



Asset Management Plan

BRIDGES

2022

Date adopted by Council	27 June 2022
Minute number	SCR06.22
CM Ref	INT-23907/22
Due for review	June 2023
Related documents	Asset Management Policy Asset Management Strategy Asset Management Plans Delivery Program and Operational Plan Community Strategic Plan 2032 Integrated Planning and Reporting requirements
Responsible officer	Manager Strategic Assets
Department/Section	Strategic Assets
Category	Financial & Asset Management
Community Strategic Plan Priority	<p>Maintaining and developing our infrastructure network to meet the ongoing needs of our population.</p> <p>SO 4.1 Provide for replacement, improvement and additional Community and open space infrastructure through investment, best practice and risk management.</p> <p>SO 4.2 Provide inviting public spaces that are clean, green, properly maintained, well designed, encourage active participation, family friendly and accessible to all.</p> <p>SO 4.3 Provide safe and reliable water and sewerage services to meet the demands of current and future generations.</p> <p>SO 4.4 Maintain and upgrade the road network and bridges.</p> <p>SO 4.5 Advocate and improve access to communication services.</p>

Contents

1	EXECUTIVE SUMMARY	4
1.1	Context.....	4
1.2	What does it cost?	4
1.3	What we will do	5
1.4	Managing the Risks.....	5
1.5	Questions you may have	6
2	INTEGRATED PLANNING AND REPORTING FRAMEWORK	7
3	INTRODUCTION	9
3.1	Background	9
3.2	Goals and Objectives of Asset Management.....	10
4	LEVELS OF SERVICE.....	12
4.1	Community Consultation	12
4.2	Customer Research and Expectations	12
4.3	Strategic and Corporate Goals.....	13
4.4	Legislative Requirements	13
4.5	Current Levels of Service	14
4.6	Desired Levels of Service	15
5	FUTURE DEMAND	15
5.1	The Shire's Growth	15
5.2	Demand Forecast.....	16
5.3	Changes in Technology.....	17
5.4	Demand Management Plan	17
5.5	Asset Programs to meet Demand	18
5.6	Growth and Demand Assumptions	18
6	LIFECYCLE MANAGEMENT PLAN.....	19
6.1	Background Data	19
6.2	Infrastructure Risk Management Plan	23
6.3	Routine Operations and Maintenance Plan	25
6.4	Renewal/Replacement Plan.....	27
6.5	Creation/Acquisition/Upgrade Plan	28
6.6	Disposal Plan.....	28
7	FINANCIAL SUMMARY	29
7.1	Financial Projections.....	29
7.2	Capital Expenditure.....	32
7.3	Forecast Reliability and Confidence.....	32

8	PLAN IMPROVEMENT AND MONITORING	33
8.1	Status of Asset Management Practices	33
8.2	Accounting and financial systems	34
8.3	Action and Improvement Program	34
8.4	Monitoring and Review Procedures	35
8.5	Performance Measures	35
9	LATEST ASSET and LOS INFORMATION	36
9.1	Bridge asset summary	36
9.2	Service Level Summary	36
9.3	Infrastructure Asset Performance Indicators.....	37
10	REFERENCES	38
11	APPENDICES.....	38
	Appendix A - Acronym Glossary	38
	Appendix B - Projected 10 year Capital Renewal, Replacement and New Works Program	40
	Appendix C - Operational Expenditure	41
	Appendix D - Forecast of Asset Ratios to Local Government Benchmarks	41
	Appendix E - Bridges Activity Risk Register	42

1 EXECUTIVE SUMMARY

1.1 Context

Upper Hunter Shire is located in the Hunter Region of NSW, approximately 250km north of Sydney. The Shire is predominantly rural and encompasses 8,100km². The Upper Hunter Local Government Area is home to a diverse mix of businesses such as agriculture, thoroughbred horse studs, retail, light and heavy industry. Bridges, culverts and associated structures are collectively referred to in this plan as “bridge assets” and form an integral part of the road and pathway network which is provided and maintained by Council on behalf of the community, businesses and visitors moving through the shire.

Council plans to operate and maintain its Bridge assets to achieve the following strategic objectives:

- Deliver the required level of service to existing and future customers in the most cost effective way
- Anticipate, plan and prioritise spending on the assets
- Optimise the life of assets at the most economic cost over time (lifecycle approach)
- Undertake a risk based approach to identify operational, maintenance, renewal and capital development needs and apply economic analysis to select the most cost effective work program

The contribution towards achievement of these strategic goals and asset management objectives will be achieved by:

- Stakeholder consultation to establish and confirm service standards.
- A regular program of inspections and monitoring activities to assess asset condition and performance.
- Application of a systematic analysis to prioritise renewals and establish the most cost effective works programs.
- Continuously reviewing and improving the quality of Asset Management practices.

1.2 What does it cost?

The projected expenditure necessary to provide the services covered by this Bridge’s Asset Management Plan (AMP) includes operations, maintenance, renewal and upgrade of existing assets.

The total amount of forecasted expenditure for bridge operations, maintenance and capital over the next ten years will be approximately \$18.8 million (as shown in Figure 1) with annual forecasted expenditure varying between \$900,000 and \$6.5 million per annum.

Forecasted operational expenditure (OPEX) for the ten year cycle will be approximately \$9.2 million which equates to 48.8% of the total forecasted expenditure. The Levels of Service (LOS) capital expenditure is for increasing the service level delivered by the assets.

It must be noted that the majority of the total capital expenditure budget is either partially or wholly dependent on funding secured through State and Federal Governments and other appropriate sources. Should a significant portion of this funding be unsuccessful or have considerable changes made to existing funding agreements or arrangements it will pose a substantial risk to the assets condition and desired level of services. Given that these assets are of an ageing nature this will have considerable consequences on maintenance and operational expenditure.

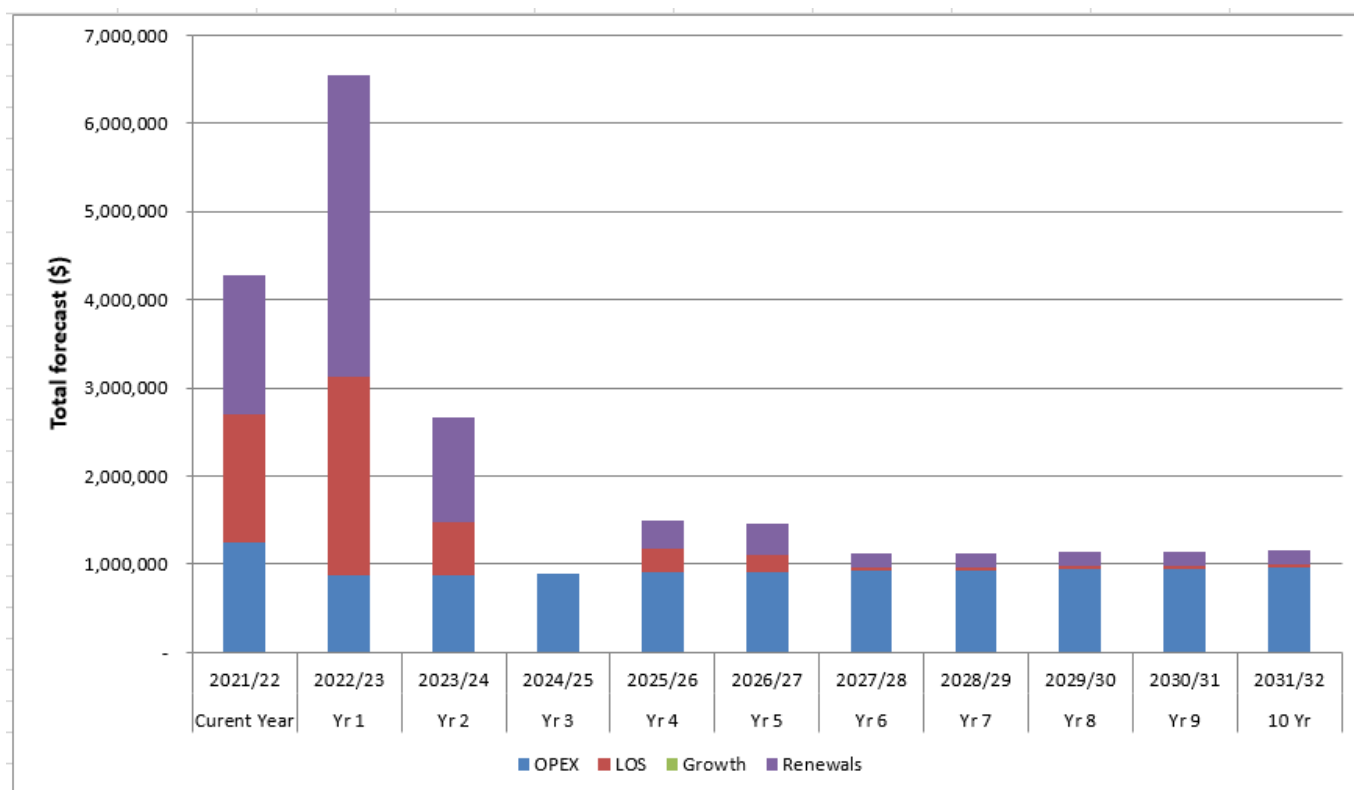


Figure 1: Summary of Bridge Total Expenditure Forecast

1.3 What we will do

Council seeks to manage infrastructure in the most cost effective way over the life of the asset. This is done in a number of ways including the following:

- Operation, maintenance, renewal, upgrade and monitoring of Upper Hunter Shire's bridge assets to meet the service levels set in this plan
- Inspect the bridge infrastructure annually to ensure that they are performing and reassess their condition grading
- Plan any works to address the defects found from asset inspections
- Plan bridge renewals based on failure statistics.
- Renewals planned within the ten year planning period have been identified to ensure that this is an acceptable backlog
- Investigate poor performing assets based on service failure and customer requests to ensure service continuity.
- Maximise community benefits against costs.
- Develop options, costs and priorities for future asset management activities.
- Consult with the community to plan future services to match the community service needs with ability to pay for services.

1.4 Managing the Risks

There are risks associated with providing the service and not being able to complete all identified activities and projects. We have identified major risks as:

- Poor or incomplete asset management practices including AMP, lifecycle management plans (LCMP) and asset condition assessments.
- Overall asset life and condition is compromised due to maintenance and renewal programs not well targeted or limited in scope.
- Financial implications with inaccurate asset valuation and long term planning including renewal forecasts.

We will endeavour to manage these risks by:

- Complete the actions identified in the Bridge's AMP including lifecycle management plans (LCMP); complete the resourcing levels for bridge asset management and complete the asset condition survey.
- Complete the full revision of the Bridge's AMP; complete the asset condition assessment program.
- Implement the asset management improvement program; continue with regular inspections and reporting on assets; start proactively analysing and reporting on data availability; start building core asset management capability; complete asset condition survey.

The Next Steps

The actions resulting from the Bridge's AMP are:

- Complete the comprehensive condition survey of all bridge assets.
- Review the currently used asset useful lives prior to the next major asset revaluation.
- Implement adequate resourcing and capability for updating the bridge services asset inventory, collection of asset repair data, and updating asset condition assessment records.
- Revise and improve the effectiveness of the current renewal programs.
- Start recording work history to assets in CONFIRM to improve renewal planning.
- Complete a formal AM Maturity Assessment of the bridge assets.
- Improve the delineation between planned, cyclic and reactive maintenance.
- Develop data collection methods to ensure consistency and ongoing improvement of condition data collection.

1.5 Questions you may have

What is an asset?

An asset is an item of property owned by the Council regarded as having value. Council's assets range from roads and footpaths to buildings, playgrounds, bridge infrastructure and street furniture.

What is an asset management plan?

Asset management planning is a comprehensive process to ensure delivery of services from infrastructure is provided in a financially sustainable manner.

An AMP details information about infrastructure assets including actions required to provide an agreed level of service in the most cost effective manner. The plan defines the services to be provided, how the services are provided and what funds are required to provide the services.

What are the objectives of asset management?

The basic premise of infrastructure asset management is to intervene at strategic points in an asset's life cycle to extend the expected service life, and thereby maintain its performance. Generally speaking, the cost of maintaining an asset decreases with planned maintenance rather than unplanned maintenance, however, excessive planned maintenance increases costs. An objective of asset management is to strategically time

infrastructure renewals before unplanned maintenance costs become excessive, but not so soon that assets are renewed before it is really needed.

Council's goal in managing infrastructure assets is to meet the required levels of service in the most cost effective manner for present and future customers. The key elements of asset management are:

- Taking a life cycle approach.
- Developing cost-effective management strategies for the long term.
- Providing a defined level of service and monitoring performance.
- Understanding and meeting the demands of growth through demand management and infrastructure investment.
- Managing risks associated with asset failures.
- Sustainable use of physical resources, and
- Continuous improvement in asset management practices.

How do we determine when renewals are required?

Renewals are determined by considering the ability of an asset to meet an agreed standard of service. This is done by regularly reviewing the condition of assets and using this information as a basis to prioritise renewals.

How do we determine our levels of service?

Our levels of service have been developed based on legislative requirements, customer research and expectations, and strategic goals.

Why does Council need an Asset Management Plan?

Under section 122 of the Local Government Act, the Upper Hunter Shire Council has a legislative requirement to develop Asset Management Plans. In addition to the legislative requirement, there is a need for the Council to ensure effective investment in assets which need it most by having a planned, systematic approach to Asset Management.

What can you do?

We will be pleased to consider your thoughts on the issues raised in this asset management plan and suggestions on how we may change or reduce the mix of services we provide to ensure that the appropriate level of service can be provided to the community at the lowest possible cost.

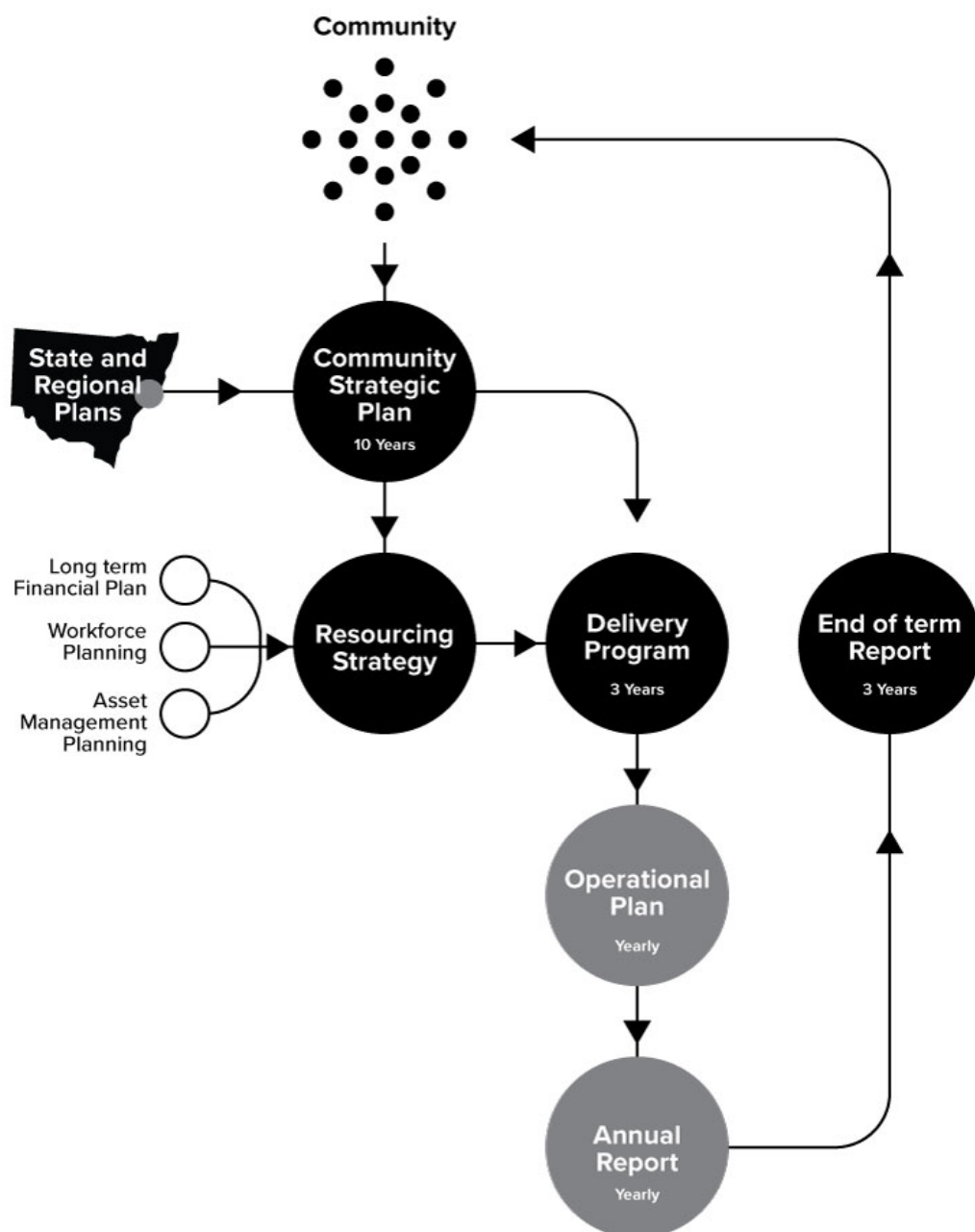
2 INTEGRATED PLANNING AND REPORTING FRAMEWORK

The Local Government Integrated Planning and Reporting (IP&R) Framework aims to ensure a more sustainable Local Government sector. The Local Government Act 1993 requires Council to work with the community to review the Community Strategic Plan and other documents within the Integrated Planning and Reporting Framework after the commencement of each four-year elected Council term.

Councils need to take a long term view and consider social, economic and environmental aspects and the needs of the current and future generations when making decisions. This underpins the Integrated, Planning and Reporting Framework. The importance of Civic Leadership and accountability and transparency in decision making should also underpin the Plan.

All NSW Councils are required to develop a Community Strategic Plan along with a Delivery Program (4 years) and Operational Plan (1 year). The CSP 2032 and its strategic objectives provide a foundation for our Delivery Program and Operational Plan. The Delivery Program and Operational Plan detail how each service addresses the CSP 2032 objectives, ongoing activities, priority projects and the strategies supporting this work.

These documents are informed by a Resourcing Strategy that is made up of a Long Term Financial Plan, Asset Management Plans and Workforce Management Plan. In order to achieve the integration envisaged by the IP&R Framework, there is an alignment between the CSP 2032, Delivery Program, Operational Plan and the other key documents. This is identified on the Upper Hunter Shire Integrated Planning and Reporting Framework.



3 INTRODUCTION

3.1 Background

About this Plan

The Bridge's AMP is to demonstrate responsible management of assets (and services provided from assets), compliance with regulatory requirements and to communicate funding needed to provide the required levels of service over a 10 year planning period.

The Bridge's AMP is to be read with Council's Asset Management Policy and Strategy and the following associated planning documents:

- Revised current year budget 2021/22
- Delivery Program 2018/2019-2022/23 and Operational Plan 2022/2023
- Community Strategic Plan 2032
- Infrastructure Asset Revaluation Supporting Documentation
- Council files on Bridge Infrastructure Assets
- Upper Hunter Shire Council Satisfaction Survey Results

Scope of Services

Upper Hunter Shire is located in the Hunter Region of NSW, approximately 250km north of Sydney. The Shire is predominantly rural and encompasses 8,100km². Bridges, culverts and associated structures are collectively referred to in this plan as “bridge assets” and form an integral part of the road and pathway network which is provided and maintained by Council on behalf of the community, businesses and visitors moving through the shire as shown in Figure 2.



Figure 2: Map of Upper Hunter Shire Towns

Council's bridge network comprises concrete and timber structures and culverts greater than 6m in length. Refer to sections 5 and 8 for bridge asset details including asset valuation.

Our Stakeholders

Key stakeholders interested in bridge assets are shown in Table 1.

Table 1: Key Stakeholders in Bridge Assets

Key Stakeholder	Area of Interest and Role in AMP
Councillors	Represent needs of community/stakeholders
	Allocate resources to meet the organisation's objectives in providing services while managing risks
	Ensure organisation is financially sustainable
	Set policy
General Manager	Provide leadership and community engagement
Senior Management Group	Development of overall strategy
Director Infrastructure Services	Oversee development of strategies and liaison with all relevant parties
Stormwater Program Area	Owner of this plan and responsible for assets covered by this plan
Strategic Assets	Owner of Asset Management Policies and Strategies
Local residents	Users of Council Assets and Services
Local businesses	As User of Council Assets and the future of new commercial and community growth
Developers	Users of Council's infrastructure and services
	Build infrastructure and hand over to Council ownership
Environmental groups	Interested in improvement to the natural environment and efficiency initiatives
Council's roads department	Interested in the coordination of the capital programs in the road corridor

3.2 Goals and Objectives of Asset Management

Upper Hunter Shire Council exists to provide services to its community. Some of these services are provided by infrastructure assets. We have acquired infrastructure assets by 'purchase', by contract, construction by our staff and by donation of assets constructed by developers and others to meet increased levels of service.

Our goal in 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 associated with asset failure
- Having a long-term financial plan which identifies required, affordable expenditure and how it will be financed
- Continuous improvement in asset management practices.

The Bridge's AMP is prepared under the direction of Council's Vision, Charter and Corporate Values contained within Council's:

- Asset Management Policy
- Asset Management Strategy
- Community Strategic Plan 2032

Council's goal is to achieve this in an efficient, cost effective manner while remaining ecologically sustainable and to investigate the future delivery of services.

Council's vision is:

“A quality rural lifestyle in a vibrant, caring and sustainable community”

Our commitment to the Community

- We will deliver high quality, innovative, consistent and responsive services to the community.
- We respect the rights of everyone to be treated fairly.
- We will keep our community informed about Council services and financial position.
- We will continually strive to improve our services to the community and encourage community engagement.
- We will deliver increased effort in the protection of the environment.

Council's relevant community strategic objectives (as stated in the Community Strategic Plan 2032) and how these are addressed in this AMP are outlined in Table 2.

Table 2: Organisation objectives and how these are addressed in this Plan

COMMUNITY PRIORITY	STRATEGIC OBJECTIVES	HOW OBJECTIVES AND INITIATIVES ARE ADDRESSED IN AMP
Maintaining and developing our infrastructure network to meet the ongoing needs of our population	Provide for replacement, improvement and additional Community and open space infrastructure through best practice and risk management.	By sustainably managing the bridge asset portfolio and by renewing and upgrading structures as required.
	Maintain and upgrade the road network.	By providing for the cost effective development, upgrade, renewal and maintenance of bridge services assets in the Shire
	Increased Community engagement and updates on infrastructure planning, road priorities, works and improvements	By proactively surveying the asset condition of our bridge network we will understand and make long term plans for a sustainable infrastructure

COMMUNITY PRIORITY	STRATEGIC OBJECTIVES	HOW OBJECTIVES AND INITIATIVES ARE ADDRESSED IN AMP
		By measuring the achievement of our service levels to our communities to ensure adequate bridge services provision

4 LEVELS OF SERVICE

Levels of service relate to outcomes the customer receives in terms of quality, quantity, responsiveness and performance as it is provided by the asset utilised by Council to provide the service. To achieve and maintain acceptable levels of service for Council's bridge network, a system of setting, recording and reviewing service levels achieved with the assistance of Community input is required. Future iterations of this plan will involve further and more detailed community consultation in this regard.

The levels of service have been reviewed as part of the AMP development. They support Council's strategic goals and are based on user expectations, statutory and state standard requirements.

4.1 Community Consultation

The Bridge AMP is prepared to facilitate community consultation initially through feedback on public display of draft AMPs prior to adoption by the Council.

Future revisions of the Bridge AMP will incorporate community consultation on service levels and costs of providing the service. This will assist the Council and the community in matching the level of service needed by the community, service risks and consequences with the community's ability and willingness to pay for the service.

4.2 Customer Research and Expectations

In a broader attempt to assess the priorities and service expectations of our wider community, across all areas of performance, Council has commissioned detailed surveys through the company Micromex Research Consultants. They undertook extensive telephone surveys in 2009, 2013 and 2015.

This survey concentrated on establishing the community's assessment of the importance of, and their satisfaction with, a number of services (52 in total). A scale of 1 to 5 was used in all rating questions where 1 was the lowest importance or satisfaction, and 5 was the highest importance or satisfaction.

Separately, comprehensive community surveys were undertaken in 2010, 2013 and 2015 using a mix of phone and face to face surveys.

Respondents in the survey did not make any specific reference to bridge maintenance/construction matters and most road maintenance concerns appeared to be related to maintenance of unsealed roads.

Further research on customer expectations in relation to bridge and culvert assets will be investigated in future updates of this Asset Management Plan.

4.3 Strategic and Corporate Goals

The Bridge’s AMP is prepared under the direction of Council’s Vision, Charter and Corporate Values. It is intended to expand on the strategies defined in Council’s Publication “Community Strategic Plan 2032”. Table 3 shows the areas of focus and key objectives.

The Council will exercise its duty of care to ensure public safety in accordance with the infrastructure risk management plan prepared in conjunction with this AMP. Management of infrastructure risks is covered in Section 5.2.

Table 3: Bridge Asset Objectives

Focus Areas	Objectives
Customer Service	Meet Levels of Service to which customers have agreed and can afford
	Establish affordable service areas and solutions
	informed and be responsive to its needs
	Community consulted and considered on all major expenditure decisions
Financial Management	Evaluate options to achieve capital and maintenance programs with affordable rates and relatively low levels of reserves
	Set up the sewer fund as an independent business
	Promote and assist establishment of industry and developers in the Upper Hunter Shire Council area
Asset Management	Ensure reliable, secure and cost effective service using latest technology
	Ensure the system provides levels of service agreed
	Provide a Capital Works Program which supplies system needs
Human Resources	Maintain a capable, motivated and skilled workforce
Environment	Manage the system to prevent adverse environmental impacts
	Promote and assist establishment of industry and developers in the Upper Hunter Shire Council area.

4.4 Legislative Requirements

Council is required to adhere to many Federal and State Government legislative regulations and requirements as shown in Table 4.

Table 4: Legislative Requirements

Legislation	Requirement
Local Government Act, 1993 and Local Government (General) Regulation 2005	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.
National Asset Management Framework Legislation 2010	Focuses on long term financial sustainability and provides a mandate to have long term strategy, financial statements and annual reporting mechanisms. AM plans are likely to be audited.

Legislation	Requirement
OLG Integrated Planning NSW	Key requirement is to integrated community plans with operational and delivery plans.
Protection of Environment Operations (POEO) Act, 1997	Under the POEO Act, it is an offence for the operator of any facility to cause pollution, including odour.
Road Transport (Safety and Traffic Management) Act 1999	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 2005	Provides for the administration and enforcement as well as review of the road transport legislation, ultimately aiming to improve road safety and transport efficiency.
Road Management Act 2004	Council is the Responsible Authority for local roads, as defined in the Road Management Act 2004. The act specifies the roads that Council is responsible for under Section 37. Specific duties are also highlighted. Bridge are considered part of the road network and, as per the Local Government Act, are referred to in a schedule: Sch 3 clause 9. Under the above legislation a bridge is deemed to be part of the road network and the responsible authority for the road is therefore the responsible authority for the bridge. The relevant co-ordinating road authority for a public road must register the public road on its register of public roads
WHS Act and Regulations	Council must ensure a safe workplace for all its employees and the public
Disability Discrimination Act	Sets out the responsibilities of Council and staff dealing with access and use of public infrastructure.

4.5 Current Levels of Service

We have defined service levels in two terms.

Community Levels of Service

This measures how the community receives the service and whether the organisation is providing community value.

Community levels of service measures used in the AMP are:

Quality	How good is the service?
Function	Does it meet users' needs?
Capacity/Utilisation	Is the service over or under used?

Technical Levels of Service

Supporting the community service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the organisation undertakes to best achieve the desired community outcomes and demonstrate effective organisational performance.

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services to meet legislative requirements and environmental outcomes.
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition (e.g. repair damaged bridge)
- Renewal – the activities that return the service capability of an asset up to that which it had originally (e.g. bridge replacement).
- Upgrade – the activities to provide a higher level of service (e.g. widening a bridge, or a new bridge that did not exist previously).

The bridge levels of service are summarised in Table 5. The full levels of service (LOS) table including performance measures and targets are detailed in Section 8.2.

Table 5: Bridge Customer LOS

Key Service Attribute	Customer LOS
Safety	Manage transport infrastructure to maximise safety for users
Quality - reliability	Provide bridges and culverts of an appropriate standard
Responsiveness	Provide prompt responses for service
Sustainable -Environmental performance	Provide a network that meets customer requirements
Sustainable -Cost Effectiveness	Provide service in a cost effective manner
Function	Suitable geometric width and load capacity adequate to meet road class

4.6 Desired Levels of Service

Indications of desired levels of service are obtained from community consultation/engagement. The bridge asset management planning process includes the development of scenarios to assist in planning future levels of service that are financially sustainable, and provide what the community wants at an affordable price.

The rollout of bridge and culvert assets to a number of new areas is considered during a review of councils Strategic Business Plan, which includes detailed and long term financial modelling of options for service extensions.

5 FUTURE DEMAND

5.1 The Shire's Growth

The total population of Upper Hunter Shire as reported by the 2016 Census was 14,350. Population projections for the Shire, as published by the NSW Department of Planning and Infrastructure, are shown in Table 6: Population Projections for Upper Hunter Shire reflecting an average annual growth rate of -0.50 % pa.

Table 6: Population Projections for Upper Hunter Shire

Population	2016 Census	2021	2026	2031	2036	2041	Total Change	Annual % Change
UHSC	14,350	14,200	13,950	13,600	13,200	12,700	-1,650	-0.50%

Source: Population Estimates & Projections for Local Areas NSW; NSW Planning & Infrastructure, 2019

5.2 Demand Forecast

The key factors that directly impact the demand for Bridge infrastructure are:

- population growth
- demographic changes
- residential development
- extension of services to towns and villages.

Demand factor trends and impacts on service delivery are summarised in Table 7.

Table 7: Demand Factors

Demand factor	Present position	Projection	Impact on services
Population	Upper Hunter Shire Council's population in 2016 was 14,350	Upper Hunter Shire Council's population is predicted to decline the next 10 years.	A negative growth rate will have an insignificant demand on services
Demographics	28.6% of the Shire's population is aged between 15 – 39 years. This is lower than the national average of 35.5% and can be attributed to fewer job opportunities and lack of higher educational institutions in the area	The percentage of the population in this age group is expected to remain static or increase slightly.	Insignificant
Residential development	Low growth rate reflects demand for residential development	Future growth rate is likely due to the proximity to the coal mining industry	Small increase in demand on services
Climate Change	Extremes increasing	More frequent extreme weather events and increased exposure to radiation effects.	More rapid deterioration of bridge, increasing frequency of inspections and maintenance and repairs.

Demand factor	Present position	Projection	Impact on services
Ageing Assets	Current bridge network reaching maturity	Deteriorating condition of assets	Increased demand for timely asset renewal and upgrade as assets begin to show increasing signs of wear and tear.

5.3 Changes in Technology

Technology changes are forecast to affect the delivery of services covered by this plan as shown in Table 8.

Table 8: Changes to Technology

Technology Change	Effect on Service Delivery
Implementation of electronic asset management system	Key areas of concern in service delivery will be identified and addressed as implementation progresses and more data becomes available on level of service criteria. Service provision is also expected to become more efficient, enabling increased service delivery.
Improvements in data capture, analysis and monitoring	Accurate and up-to-date asset registers will lead to more accurate works planning and financial data. This will enable a more pro-active approach in asset management.
Introduction of new machinery	Reduced costs, improved productivity and WHS
Bridge renewal treatments	Increased residual life and lower lifecycle costs

5.4 Demand Management Plan

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

Opportunities identified to date for demand management are shown in Table 9. Further opportunities for demand management will be developed in future revisions of this AMP.

Table 9: Demand Management Plan

Service Activity	Demand Management Plan
Community engagement	Engage with the community to identify justifiable community needs from other expectations and consider only community needs consistent with Council's Charter.
Customer requests	Analyse customer requests to optimise the use and performance of existing road services and look for non-asset based solutions to meet demand for services
Traffic load and volume control	Improve bridge performance through road mass restrictions and reducing traffic volumes.

Service Activity	Demand Management Plan
	Load limits to be placed on bridges in poor condition, where reasonable alternate access is available.
Provision of new bridge	Development applications will be assessed to ensure that access or egress to or from a site is appropriate and in some instances new bridge or other forms of suspended structures may be required. Construction of new bridges may be a condition of consent for the development.
Upgrade of existing bridge	New development applications may result in a change of access requirements for a site. An assessment of any existing bridge capacity will be made as part of the application review, and as a result an upgrade of existing bridge may be required as part of the conditions of consent of the development. Service authorities may wish to utilise bridge to carry new services. Upgrade to the structure by these service authorities may be required in these situations. The Road and Maritime Services may approve higher vehicle mass limits into the future on some roads. Council will provide feedback about bridge capacity if required to the RMS and request funding if required.

5.5 Asset Programs to meet Demand

The new assets required to meet growth will either be acquired free of cost from land developments (in most cases) or funded by Section 94 contribution plans and constructed by the Council or its nominated contractor.

The cumulative value of new contributed and constructed asset values have not been considered in any detail in this plan, as the historical and expected growth rates for Council have not been particularly high, and would not be considered to have any significant impact in the 10-year horizon of this plan.

Acquiring these new assets will commit the organisation to fund ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs will be more accurately identified, and options considered, as part of the revision process. In particular, there will be full financial provision for maintenance and renewal costs of these new assets in the revised financial plan. This information will be incorporated in future versions of the Bridge's AMP.

5.6 Growth and Demand Assumptions

The key growth and demand assumptions are as follows:

- Population projections are based on Population Estimates and Projections for Local Areas NSW; NSW Planning and Infrastructure, 2019
- Projections have been based on historic census data and it has been assumed that the trends that have been observed will continue.

6 LIFECYCLE MANAGEMENT PLAN

Overview

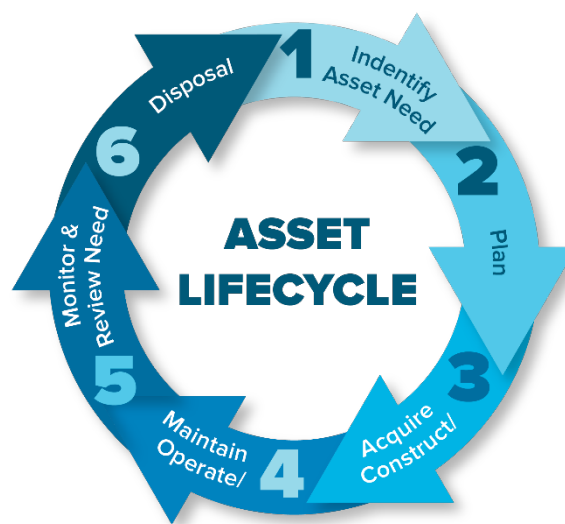
The lifecycle management plan details how Council plans to manage and operate the bridge assets at the agreed levels of service defined in Section 3 while optimising life cycle costs. The bridge assets and culverts are maintained and developed in a way that is fit for purpose and sustainable over time and consistent across the Shire.

Council's key asset management principle is meeting the service levels and managing risk while minimising whole-of-life costs. It is important that asset lifecycle costs are considered in decision making as they are typically several times greater than the initial development costs.

The Asset Lifecycle

Figure 3 below provides a graphical representation of the asset lifecycle including each of the stages an asset passes through during its life.

Figure 3: Asset Lifecycle



6.1 Background Data

6.1.1 Physical parameters

The summary of the bridge asset classes covered by this AMP are shown in Table 10. The most recent information available for the quantities and total values are detailed in Section 8.

Table 10: Bridge asset classes

BRIDGE ASSET CLASS
Timber Bridge
Concrete Bridge
Steel Bridge
Pipe Culvert Steel
Pipe Culvert Concrete

The age profile of the bridge and culvert assets generally range from the 1930's to present. The oldest still functional bridge was built in 1917 which verifies the adopted useful life of 100 years and may in fact indicate that these structures, maintained correctly could have longer useful lives.

Based on the age profile it could be expected that there will be renewal and maintenance expenditure required over the modelling period.

6.1.2 Asset Capacity and Performance

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

Council's bridge and culvert assets would have been designed to meet the current standards applicable at the time of construction, taking into account forecast growth. This may mean that some of the older structures may need to be re-assessed to determine if their loading capacity is adequate and relevant to today's bridge

design standards and traffic composition. Bridge and culvert capacities may need to be assessed as part of Councils floodplain risk management processes for emergency access.

Locations where deficiencies in service performance are known are detailed in Table 11.

Table 11 - Known Service Performance Deficiencies

Location	Service Deficiency
Local Rural and Urban Roads	Some bridge widths are below the desirable width for road classification.
	Some bridges have load limit restrictions
	Some bridges and culverts are subject to inundation

6.1.3 Asset condition

Condition surveys

Asset condition is an important determinant for Council's asset renewal planning. Condition is monitored through failure statistics, routine maintenance inspections and customer requests.

The frequency of condition assessments will depend on a number of factors including the age, life, risk and criticality of the asset. In taking these factors into account and the current revaluation cycle for assets Council has determined a condition inspection frequency for each asset class. The following inspection frequency has been adopted for each asset class for future condition surveys:

- Timber Bridge – Annually
- Concrete Bridges - Biannually
- Culverts - Biannually

At present the condition of an asset is gauged by a visual rating system that assigns a condition rating on the asset based on how it appears to be functioning in providing its service to the community.

The visual condition assessments are measured using a 1-5 rating system as shown in Table 12.

Table 12: Visual Condition Assessment

Rating Scale	Condition Description
Concrete - This element defines the condition and load carrying capacity of the concrete members.	
1	No significant deterioration.
2	Minor cracks and spalls. No exposed reinforcement or evidence of corrosion.
3	Some delimitation or spalls may be present and some reinforcement may be exposed. Corrosion of reinforcement may be present but loss of section is minor and does not significantly affect the serviceability of the element or bridge.
4	Advanced deterioration. Corrosion of reinforcement and/or loss of section is sufficient to warrant analysis to ascertain the impact on the strength and/or serviceability of either the element or the bridge.
5	Structural failure, no longer providing service.

Rating Scale	Condition Description
Steel - This element defines the condition of protective coatings and section loss of steel members.	
1	There is no evidence of corrosion and the protective coating is sound and functioning as intended to protect the metal surface.
2	There is little or no corrosion. The protective coating may be chalking, peeling, cracking or showing early signs of deterioration. There is no exposed metal.
3	The protective coating has failed. Rust and pitting may be present but section loss is minor and does not yet affect the serviceability of the member or structure.
4	Corrosion is advanced. Section loss is sufficient to warrant analysis to ascertain the impact on the strength and/or serviceability of either the element or the structure.
5	Structural failure, no longer providing service.
Timber - This element defines timber condition and load carrying capacity	
1	Investigation indicates no decay. There may be cracks, checks or splits having no affect on strength or serviceability.
2	Decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability.
3	Decay, insect infestation, splitting, cracking, checking or crushing has resulted in loss of strength of the element but not of sufficient magnitude to affect the serviceability of the structure.
4	Advanced deterioration. Decay, insect infestation, splitting, cracking, checking or crushing has produced loss of strength that affects the serviceability of the structure.
5	Structural failure, no longer providing service.

Given the long life of Bridge assets and the difficulties in establishing their condition it is recognised that this process is largely subjective.

Condition assessment

A desktop assessment of asset condition has been completed for the purposes of developing this AMP. Periodic bridge condition assessments are critical in keeping a grasp on the condition of a bridge asset's various components. Council undertakes asset condition inspections on a yearly basis to give a snap shot of the condition of each of the following structural elements:

- Pylons/ foundations
- Cross Heads
- stringers
- cross beams
- deck
- guard rails
- end walls/ abutments
- culvert fabric

This high level assessment of asset condition is summarised in Table 13. Note that the percentages are based on gross replacement costs.

Table 13: Assessed Bridge asset condition summary

BRIDGE ASSET CLASS	ASSET CONDITION GRADE				
	1	2	3	4	5
Bridges	55.0%	42.0%	3.0%	0.0%	0.0%
Culverts	84.0%	13.0%	2.0%	1.0%	0.0%

6.1.4 Asset valuations

The value of assets as at 30 June 2021 covered by this asset management plan is summarised below. Assets are valued at Brownfield rates with the unit rates for each asset type based on recent similar construction projects.

- Current Replacement Cost \$104,043,000
- Accumulated Depreciation \$ 24,938,000
- Written Down Value \$ 79,105,000

The assets recorded in the asset register are on a valuation basis with any additions constructed by Council for new and/or renewed assets, since this valuation, recorded at cost or for any assets received by Council on an “in-kind” basis from property developer’s (i.e. free of cost to Council) valued using industry data to estimate the cost of their construction. It also noted that where applicable, adjustments are made to the asset register for the value of any corresponding redundant assets that have been renewed.

The write-down of assets is based on the useful life of the asset class within their asset lifecycle. This predominantly entails the use of a consumption based curve which shows an increase in the deterioration of the asset in the later part of its lifecycle as depicted in figure 4.

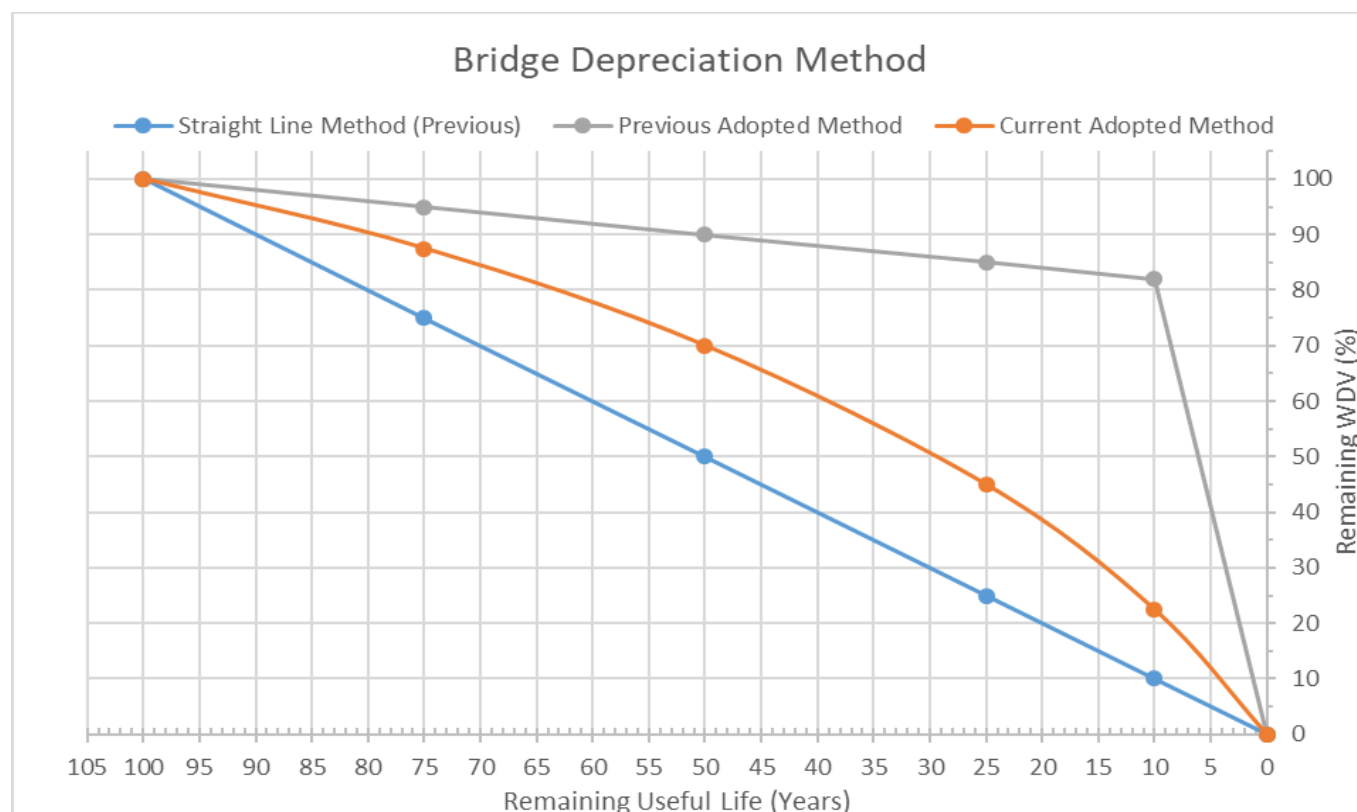


Figure 4 – Bridge and Culvert asset write-down methodology

Asset revaluations are required to be completed by Council's on a 5-year cycle (at a minimum) in accordance with the "Local Government Code of Accounting Practice and Financial Reporting". This revaluation considers the suitability of design, useful life and condition assessment of the asset components that are being revalued. It also uses industry specific data to estimate the current replacement cost of the assets held.

Useful lives are currently being reviewed as part of the revaluation process with the assets to be reviewed again in 2025/26 in line with the revaluation cycle as set by the Office of Local Government.

Key assumptions made in preparing the valuations were:

- Industry standard design lives are used for all asset classes
- NSW Reference rates used for most assets replacement cost estimate.

There has been no major variation to the revaluation processes since the last Council adopted Asset Management Plan other than the change in methodology for asset write-down from a straight line method to consumption usage method which provide a more realistic approach for the deterioration of the asset.

6.2 Infrastructure Risk Management Plan

The objective of the risk management process with regards to bridge assets is to ensure that

- All significant operational and organisational risks are understood and identified.
- The highest risks that need to be addressed in the short to medium term are identified.
- Strategies and treatments to address risks are identified and applied.

An assessment of risks associated with service delivery from infrastructure assets has identified the most critical risks to Council. The risk assessment process identifies and assesses risks, develops a risk rating and develops a risk treatment plan for non-acceptable risks.

The key risk management criteria relating to Council's bridge assets include:

- Public health and safety
- Service provision
- Environmental and legal compliance
- Security, theft and vandalism
- Business interruption
- Financial risk (escalating costs in deterioration)
- Asset damage through storms, flooding, water damage or events such as accidents.

Risk identification for bridge assets can be identified from a number of resources such as:

- Routine inspections
- Reports and complaints from general public
- Information obtained from incidents
- Advice from professional bodies
- Past experience.

Once risks have been assessed and rated, the most significant risks (those rated as high or extreme) are isolated for treatment/control. Those identified as moderate or low will continue to be monitored and reviewed if circumstances change.

Options to treat risk posed by bridge assets include (but not limited to):

- risk elimination.
- reduction in the cause or likelihood of the event occurring.
- reduction in the consequence or severity of the event if it were to occur.
- increasing the maintenance regime.
- initiating council improvements.
- changing operating processes and procedures.
- sharing the risk through insurance or contracts.
- doing nothing and accepting the risk.

Asset risks have been identified for the bridge activity using the NAMS risk management framework including the likelihood and consequence tables. The full activity risk register is detailed in Appendix E.

Table 14 shows the very high (VH), high (H) and medium (M) risks identified (top 3 only shown), the current controls and additional controls through mitigation strategies which will be implemented to result in the mitigated risk rating.

Table 14 – Critical Risks and Treatment Plan

Asset at Risk	What can happen	Risk Rating	Risk treatment plan
Deteriorated timber bridge or load limited bridge failure	Structure fails without warning	M	Regular inspection and repair as required.
Bridge/large culvert network	Lack of maintenance leading to water ponding, poor delineation/signage, tree/vision obstructions, rough deck surface	H	Annual inspections identify maintenance and works carried out promptly in accordance with RMP
	Increased public liability	H	Prioritise urgent works identified in 2015-2016 survey and program other repair works, as budget permits from annual inspections.
	Inadequate information to make required financial renewal decisions	M	Condition inspections carried out on regular five-year cyclic basis
Bridge network	Overloading of structures and associated reduced asset life and load capacity	M	Inspections identified bridges that should undergo a Level 2 inspection. Recommendations on load limit to be undertaken.

6.3 Routine Operations and Maintenance Plan

Operations include regular activities to provide services at the agreed service levels.

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again. Maintenance includes reactive, planned and cyclic work activities.

6.3.1 Operations and Maintenance Plan

Maintenance includes reactive, planned and cyclic maintenance work activities.

- Reactive maintenance is unplanned repair work carried out in response to service requests, risk assessment priorities and management/supervisory directions. Assessment and prioritisation of reactive maintenance is undertaken by Council staff using experience and judgement, and risk management procedures.
- Planned maintenance is repair work that is identified and managed through a maintenance program. Activities include inspection, assessing the condition against failure/breakdown experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.
- Cyclic maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting. This work generally falls below the capital/maintenance threshold.

Maintenance expenditure trends are shown in Table 15.

Table 15: Maintenance Expenditure Trends

Maintenance Expenditure	
Planned and Specific	Unplanned
10%	90%

Planned/cyclic maintenance work is approximately 20% of total maintenance expenditure depending on the frequency and intensity of natural disasters which occur during the year. It is Council's goal to increase this amount progressively and reduce the amount of reactive maintenance, which should then provide operational cost savings, and maximised asset performance.

Due to there being a minimal backlog of works and that most assets are reaching their full useful life indicating that existing maintenance expenditure levels are adequate to meet required service levels. The assessment and prioritisation of reactive maintenance is undertaken by Council staff using professional experience and judgement.

6.3.2 Operations and Maintenance Strategies

The organisation will operate and maintain assets to provide the defined level of service to approved budgets in the most cost-efficient manner. The operation and maintenance activities include:

- Scheduling operations activities to deliver the defined level of service in the most efficient manner
- Maintain and review on an annual basis a current infrastructure risk register for assets. Present service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and Council

- Review current and required skills base and implement workforce training and development to meet required operations and maintenance needs
- Review asset utilisation to identify underutilised assets and appropriate remedies, and over utilised assets and customer demand management options
- Maintain a current hierarchy of critical assets and required operations and maintenance activities
- Review management of operations and maintenance activities to ensure Council is obtaining best value for resources used

6.3.3 Critical Assets

Critical assets are those assets which have a high consequence of failure but not necessarily a high likelihood of failure. By identifying critical assets and critical failure modes, organisations can target and refine investigative activities, maintenance plans and capital expenditure plans at the appropriate time.

Operations and maintenance activities may be targeted to mitigate critical assets failure and maintain service levels. These activities may include increased inspection frequency, higher maintenance intervention levels, etc.

A high level criticality assessment has been completed for Council's infrastructural asset groups including bridge and culvert assets. Different bridge asset elements were assessed as high, medium or low criticality rating and are detailed in Table 16. The next step is to identify and rank the critical assets using this methodology across the asset inventory.

Table 16: Critical Bridge Assets

	High	Medium	Low
Road Classification	Regional Roads, R1 Roads	R2, R3 & urban Roads	R4 roads
No of Spans	>=3	2	1
Material	Timber	Concrete / Steel / Composite	Culverts
Usage		Traffic	Pedestrian
Number of Bridges	1st or only bridge	2nd bridge from end	other
Number of Residences	> 20 properties	5 - 19 Properties	< 5 properties

6.3.4 Standards and Specifications

Maintenance work is carried out by council staff in accordance with the Council standard drawings.

6.3.5 Future Maintenance Expenses

Future maintenance costs are forecast to trend in line with the value of the asset network, plus an allowance for increase in levels of service over the planning period. Asset values are forecast to increase as additional assets are added to the asset network from construction and acquisition by Council and from assets constructed by land developers and others that are donated to Council.

6.4 Renewal/Replacement Plan

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

Renewal will be undertaken using 'low cost' renewal methods where practical. The aim of 'low cost' renewals is to restore the service potential or future economic benefits of the asset by renewing the assets at a cost less than replacement costs.

6.4.1 Renewal plan

Assets requiring renewal are identified from estimates of remaining life obtained from the condition survey. The estimated service life of bridges is between 80-100 years. Based on the age profile from the asset register the remaining life of the 1960's portion of the bridge network is estimated to be a greater than 40 years. Renewal will be undertaken using 'low-cost' renewal methods where practical. The aim of 'low-cost' renewals is to restore the service potential or future economic benefits of the asset by renewing the assets at a cost less than replacement cost.

The decision criteria for major bridge and culvert renewals include, in descending importance:

- Accident potential
- Heavy vehicle volume
- Local network significance
- Regional network significance
- Light traffic volume
- Cost/Benefit ratio
- Existing maintenance costs
- Environmental issues

6.4.2 Renewal and Replacement Strategies

Council will plan capital renewal and replacement projects to meet level of service objectives and minimise infrastructure service risks by:

- Planning and scheduling renewal projects to deliver the defined level of service in the most efficient manner
- Undertaking project scoping for all capital renewal and replacement projects to identify:
 - the service delivery 'deficiency', present risk and optimum time for renewal/replacement
 - the project objectives to rectify the deficiency
 - the range of options, estimated capital and life cycle costs for each options that could address the service deficiency
- evaluate the options against evaluation criteria adopted by Council
- select the best option to be included in capital renewal programs
- Using 'low cost' renewal methods (cost of renewal is less than replacement) wherever possible
- Maintain a current infrastructure risk register for assets and service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and Council
- Review current and required skills base and implement workforce training and development to meet required construction and renewal needs
- Maintain a current hierarchy of critical assets and capital renewal treatments and timings required

- Review management of capital renewal and replacement activities to ensure Council is obtaining best value for resources used.

6.4.3 Renewal standards

Renewal work is always carried out to current standards and capacity unless a reduced capacity can be justified.

6.4.4 Summary of future renewal expenditure

Future renewal costs are forecast to increase over time as the asset network ages and traffic loading and use increases. Renewals are to be funded from the council's capital works program and grants where available, see appendix B.

6.4.5 Impact of Deferring Renewal Works

Renewal works identified in terms of renewal strategies may be deferred if the cost (or aggregate cost) is beyond the current financial ability to fund it. This can occur when there are short term renewal profile peaks, or higher priority works are required on other infrastructure asset groups.

When renewal works are deferred, the impact of the deferral on the assets ability to still provide the required level of service will be assessed. Although the deferral of some renewal works may not impact significantly on the short-term operation of the assets, repeated deferral will create a liability (backlog) in the longer term.

6.5 Creation/Acquisition/Upgrade Plan

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

6.5.1 Selection criteria

New assets and upgrade/expansion of the existing bridge and culvert assets are identified from the following:

- proposals identified by strategic plans or partnerships with other organisation;
- growth – increased development and potential flooding;
- known road or street flooding locations;
- poor condition, under capacity bridge/culvert locations.

In preparing future works programs to upgrade/expand the bridge and culvert network consideration is given to the following:

- extent of flooding including potential damage and hazards;
- capacity and condition of the existing bridge and culvert asset;
- strategic locations to improve the quality of access.

6.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. It is unlikely that any bridge would be disposed of while it is still in service. Demolition and disposal of bridge assets will occur during the replacement process.

7 FINANCIAL SUMMARY

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

Note that expenditure forecasts (operational and capital) are based on the on the Delivery Program 2018/2019-2022/2023 and Operational Plan 2022/2023.

The improvements proposed for condition monitoring and establishing more accurate useful lives for the Bridge system will be an input into that process also.

7.1 Financial Projections

7.1.1 Financial Summary Overview

The total amount of forecasted expenditure for bridge operations, maintenance and capital over the next ten years will be approximately \$18.8 million (as shown in Figure 5) with average annual forecasted expenditure \$900,000 and \$6.5 million per annum.

This expenditure is divided into two main categories being:

- Capital Expenditure (CAPEX), which is approximately \$9.6 million or 51.2% of total expenditure and Operational Expenditure (OPEX), which is approximately \$9.2 million or 48.8% of total expenditure.

The CAPEX is further separated into three main subcategories being:

- Level of Service (LOS), which increases the service level delivered by the assets. This accounts for approximately \$3.5 million or 36.4% of total capital expenditure.
- Renewal, which replaces the assets as new. This equates to approximately \$6.1 million or 63.6% of total capital expenditure.
- Growth, refers to the expansion of the existing asset network. There is currently no planned expansion to the existing asset network.

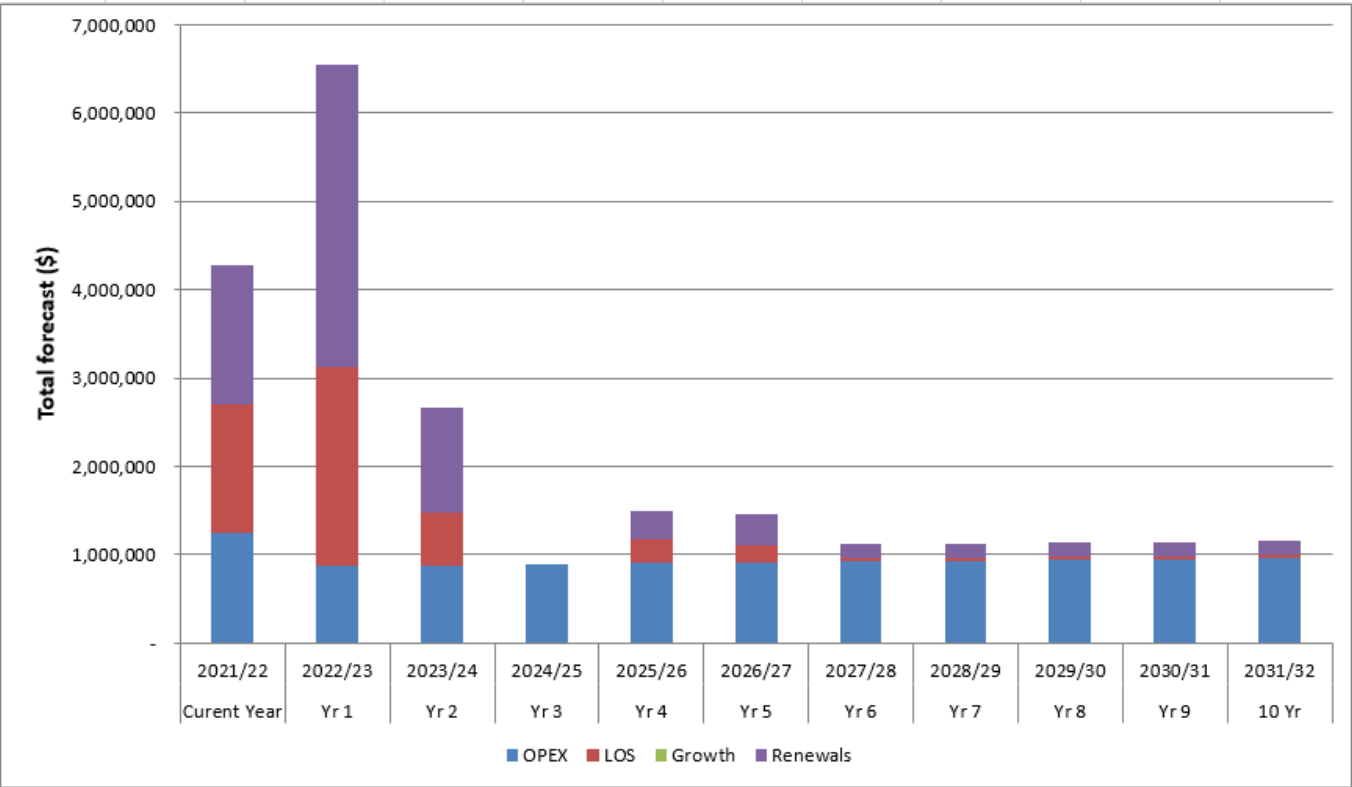


Figure 5: Summary of Bridge Total Expenditure Forecast



Table 17: Summary of Bridges Total Expenditure Forecast

BRIDGES SUMMARY	CURRENT 2021/22	YR 1 2022/23	YR 2 2023/24	YR 3 2024/25	YR 4 2025/26	YR 5 2026/27	YR 6 2027/28	YR 7 2028/29	YR 8 2029/30	YR 9 2030/31	YR 10 2031/32	10 YEAR TOTAL
OPEX	1,246,840	874,643	878,454	891,156	903,927	912,859	921,879	930,215	938,685	946,940	959,410	9,158,168
LOS	1,455,808	2,252,492	595,364	-	270,000	185,000	40,000	40,000	40,000	40,000	40,000	3,502,856
Growth	-	-	-	-	-	-	-	-	-	-	-	-
Renewals	1,577,430	3,427,421	1,198,909	-	330,000	365,000	160,000	160,000	160,000	160,000	160,000	6,121,330
TOTAL	4,280,078	6,554,556	2,672,727	891,156	1,503,927	1,462,859	1,121,879	1,130,215	1,138,685	1,146,940	1,159,410	18,782,354

Note that the operational and capital expenditure are inflated.

7.1.2 Operational expenditure summary

The recommended ten-year operational expenditure forecast is shown in Table 18 with \$9.2 million forecast over the next ten years. This shows that bridge and culvert maintenance is 34% of the total operations expenditure, followed by administration overheads at 33%.

Table 18: Summary of Bridges Operational Expenditure

BRIDGES OPEX SUMMARY	CURRENT 2021/22	YR 1 2022/23	YR 2 2023/24	YR 3 2024/25	YR 4 2025/26	YR 5 2026/27	YR 6 2027/28	YR 7 2028/29	YR 8 2029/30	YR 9 2030/31	YR 10 2031/32	10 YEAR TOTAL
OPERATING EXPENDITURE												
DIRECT ASSET COSTS												
Administration	13,500	12,000	12,400	12,808	13,225	13,566	13,917	14,276	14,645	15,024	15,412	137,273
Bridge and Culvert Maintenance	450,000	280,250	288,813	297,466	305,932	313,731	321,729	329,932	338,344	346,972	355,820	3,178,989
INDIRECT ASSET COSTS												
Depreciation	443,161	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623	2,446,230
Loan Interest – Bridges Loan	65,836	61,285	55,538	50,031	43,901	37,287	30,366	22,359	14,073	5,146	-	319,986
Loan Interest – Bridges Loan 1	14,674	2,787	-	-	-	-	-	-	-	-	-	2,787
Loan Interest – Bridges Loan 2	14,222	6,501	531	-	-	-	-	-	-	-	-	7,032
Corporate Admin Overheads	245,447	267,197	276,549	286,228	296,246	303,652	311,244	319,025	327,000	335,175	343,555	3,065,871
TOTAL	1,246,840	874,643	878,454	891,156	903,927	912,859	921,879	930,215	938,685	946,940	959,410	9,158,168

7.2 Capital Expenditure

There is a total of \$9.6 million for capital expenditure for the next ten years as shown in Table 17. Total annual renewals fluctuate with an average of \$612,133 per annum for bridge assets. It is estimated that 36% of the capital expenditure is for LOS works, mainly for new causeways and upgrading single structures to dual lane. The full capital expenditure program is detailed in Appendix B.

7.3 Forecast Reliability and Confidence

The expenditure and valuations projections in the Bridge's AMP are based on the best available data. Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale in accordance with Table 19.

Table 19: Data Confidence Grading System

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

The estimated confidence level for and reliability of data used in Bridge AMP is shown in Table 20.

Table 20: Data Confidence Assessment for Data used in AMP

Data	Confidence Assessment	Comment
Demand drivers	C	
Growth projections	C	Multiple scenarios developed and considered during 30 year financial modelling
Operations expenditures	B	Current levels generally known and recorded, scenarios considering additional resourcing need to be developed
Maintenance expenditures	B	Generally known but maintenance history not recorded at asset ID level. Need to start recording work history to asset lengths in CONFIRM to improve renewal planning.
Projected Renewal exps - Asset values	B	Asset revaluation completed in June 2015. Major revaluation scheduled for every five years and due 2019/20.

Data	Confidence Assessment	Comment
- Asset useful lives	B	Useful lives were last reviewed in June 2015 and will be reviewed in 2019/20 prior to the major asset revaluation.
- Condition modelling	E	There has been limited condition information collected and therefore no modelling undertaken to date.
- Network renewals	C	Generally sound renewal programs based on operational knowledge and identified defects.
- Defect repairs	C	
Upgrade/New expenditures	B	Based on specific studies and/or designs.
Disposal expenditures	C	Generally as part of a capital project or at asset component level for complex assets. Disposal costs are generally included as part of the capital project.

Over all data sources, the data confidence is assessed as reliable confidence level for data used in the preparation of this AMP.

8 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices

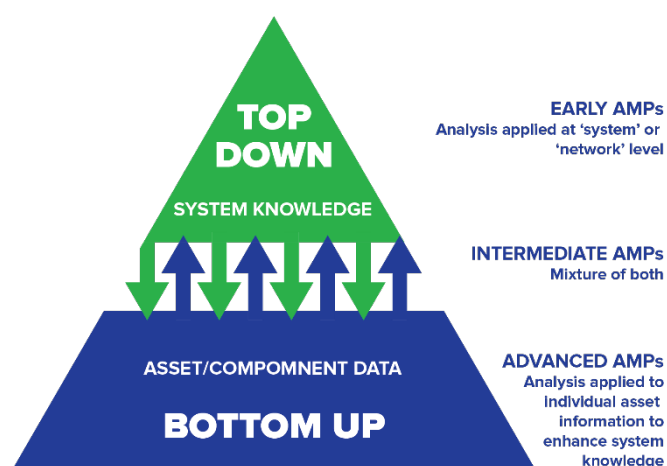
Asset Management Commitment

Through the initiatives presented in this section, Council is committed to appropriate asset management practices. This practice is being developed in line with the IPWEA NAMS practice as presented the suite of asset management publications including the 2015 IIMM. Council is committed to delivering the most appropriate levels of service balanced with affordability and good industry practice.

Core and Advanced Asset Management

This plan is prepared as a 'core' AMP over a 10 year planning period in accordance with the 2015 IIMM. It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level as shown in Figure 66.

Future revisions of this AMP will move towards 'intermediate' asset management using a 'bottom up' approach for gathering asset information for individual assets to support the optimisation of activities and programs to meet agreed service levels.



8.2 Accounting and financial systems

Council uses the Authority suite for its financial / accounting systems. Responsibility for the financial system lies with the Finance Manager and the Director of Corporate Services. Council currently has a maintenance/capital threshold.

Council manages and is responsible for all of the accounting, budgeting and financial aspects of all of its assets. The primary issue for the financial systems section is to:

- Ensure that asset valuations are conducted regularly
- Valuations match what is out in the field
- Ensure that updates to the system are regularly undertaken.

Accountabilities for financial systems

Under the Local Government Act 1993 the Finance Section of Upper Hunter Shire Council must meet reporting requirements. These include budget reviews with all AMP sections within the Council. They also must provide an annual report outlining the year's achievements, in terms of meeting its objectives and performance targets as it had set out. This document also outlines the amount of expenditure required to meet the standards set in the asset plans, the amount of annual maintenance required to keep the assets at the level of service specified, and Upper Hunter Shire Council's maintenance program for the year in relation to the work carried out.

Accounting standards and regulations

To effectively account for the Bridge assets of Upper Hunter Shire Council, the Finance Section must meet statutory and regulatory reporting protocols. These protocols are addressed in the Local Government Act 1993.

Capital/maintenance threshold

Renewal or enhancement works over \$5,000 are capitalised.

8.2.3 Asset registers and management systems

Currently CONFIRM is used, supplemented by spreadsheets and Content Manager documentation. There is a need to obtain more sophisticated reports from CONFIRM, and also to increase the skills and training of a number of Council officers who either presently, or could in future, use the CONFIRM system. Currently, there is a link between asset management systems and accounting systems. In order for this AMP to grow in maturity and improve in accuracy it is vital that integration of asset register systems and financial systems be further improved.

Required changes to asset management system arising from this AMP

- Condition monitoring and obsolescence to be accounted for and recorded
- The link between the financial plan, asset plan and the works order system will be addressed in the future
- Establish recording systems where reactive maintenance can be measured in terms of frequency and scope of work undertaken
- For CONFIRM, improve the provision for, and records contained, in the large single point assets.

8.3 Action and Improvement Program

Key improvement programmes and associated projects have been developed through a review of the gaps in developing this draft AMP and the issues identified. The improvement programme is summarised in Table 21.

Table 21: Improvement Plan Summary Programme

AM Improvement Area	Action	Indicative Timeframe	Priority	Responsibility
Asset Data	Develop a regime covering inspection program and reporting and recording mechanisms.	2021/22	Very High	Strategic Assets
Asset valuation	Review the currently used asset useful lives prior to the next major asset revaluation.	2021/22	High	Strategic Assets
Asset capability	Implement adequate resourcing and capability for updating the bridge and culvert asset inventory, collection of asset repair data, and updating asset condition assessment records.	2021/22	Very High	Strategic Assets
Renewal planning	Undertake proactive and regular analysis of the bridge and culvert blockages and overflow history.	2021/22	High	Strategic Assets, Operations
	Revise and improve the effectiveness of the current Bridge renewal program	2021/22	High	Strategic Assets
Risk management	Develop an Emergency Response Plan for the critical Bridge assets.	2021/22	High	Strategic Assets, Internal Auditor/Risk Co-ordinator
Systems Improvements	Maintenance Service Agreement – review current levels of service, covering maintenance activities and service standards, to reflect the work undertaken with the current budget	2021/22	Very High	Strategic Assets, Information Technology, Operations

8.4 Monitoring and Review Procedures

This AMP will be reviewed during annual budget planning processes and amended to recognise any material changes in service levels and/or resources available to provide those services as a result of budget decisions.

The AMP will be updated annually to ensure it represents the current service level, asset values, projected operations, maintenance, capital renewal and replacement, capital upgrade/new and asset disposal expenditures and projected expenditure values incorporated into the Council's long term financial plan.

The AMP has a life of four years (Council election cycle) and is due for complete revision and updating within one year of each Council election.

8.5 Performance Measures

The effectiveness of the asset management plan can be measured in the following ways:

- The degree to which the required projected expenditures identified in this AMP are incorporated into the organisation's long term financial plan

- The degree to which 1-5 year detailed works programs, budgets, business plans and organisational structures take into account the ‘global’ works program trends provided by the AMP
- The degree to which the existing and projected service levels and service consequences (what we cannot do), risks and residual risks are incorporated into the organisation’s Strategic Plan and associated plans

9 LATEST ASSET and LOS INFORMATION

9.1 Bridge asset summary

A summary of the Shire’s Bridge asset class values is below as at 30 June 2021 are shown in Table 22.

Table 22: Value of Bridge asset classes

Bridge Asset Class	Current Replacement Value (\$ '000)	Accumulated Depreciation (\$'000)	Written Down Value (WDV) (\$'000)
Bridge	66,142,000	16,635,000	49,507,000
Culvert	37,901,000	8,303,000	29,598,000
TOTAL	104,043,000	24,938,000	79,105,000

Source: Council’s Asset Register (as at 30 June 2021)

From the latest assessment of the asset inventory, the Bridge network consists of:

- 68 Concrete Bridges
- 22 Timber Bridges
- 2 Steel Bridges
- 52 Culverts

9.2 Service Level Summary

The levels of service and performance measures for Bridge services are summarised in Table 23.

Table 23: Bridge Services Level and Performance Measure Summary

Key Service Attribute	Customer LOS	Performance measure	Performance Target	Current Performance
Minor Flooding	Minimal disruption associated with Minor Flooding	Complaints from residents regarding minor flooding	< 10 complaints per year	Achieved
Major Flooding	Adequate mitigation of major flooding events – warning, reduction of damage, etc.	Adequate systems in place and appropriate knowledge of risk	Complete regional study(ies) and Implement recommendations as per program and funding allows	Substantially met or in progress
Impact of Works	Good construction practices during and planning for construction	Business and personal disruptions during construction	< 3 complaints per year as a result of recent construction	Achieved

Key Service Attribute	Customer LOS	Performance measure	Performance Target	Current Performance
Design	Designs meet or exceed industry best practice	Current Australian Standards and guidelines met	Guidelines met or exceeded	Achieved
Maintenance	Maintenance levels keep the bridge and culvert network functioning	Complaints received for the bridge and culvert network	< 40 complaints per year regarding maintenance	Achieved

9.3 Infrastructure Asset Performance Indicators

The asset performance indicators are summarised in Table 24. The ten-year asset ratio forecasts based on three year rolling averages are detailed in Appendix D.

Table 24: Asset performance indicators

Ratio	Purpose	2020/21	Benchmarks	Achieved	Comments
Infrastructure Renewals Ratio	To assess the proportion spent on infrastructure renewals vs infrastructure deterioration	313.69%	>100%	Yes	Renewals planned over the next four years average will reach benchmarks.
Infrastructure Backlog Ratio (estimated cost to bring the assets to a satisfactory condition/ value of assets)	To assess the infrastructure backlog against the total value of council's infrastructure	0.51%	<2%	Yes	97% of assets are in condition 1 and 2.
Asset Maintenance Ratio	To assess the actual vs required annual maintenance expenditure	0.52%	>100%	No	Council's Bridge and Culvert assets did not meet the required planned maintenance in 2020/21.
Capital Expenditure Ratio (assessed as annual capital expenditure/ annual depreciation)	To assess the extent to which council is expanding its asset base through capital expenditure (on both new assets and through replacement of existing assets)	3.14	>1.1	Yes	Capital expenditure planned over the next seven year average is favourable to the benchmarks.

It must be noted that all these ratios are purely based on financial information not the physical infrastructure that has been renewed. That is to say, that although Council is financially meeting the benchmark of renewals but may in fact not be physically due to the increased cost of renewals.

Specifically the Infrastructure Renewal Ratio (Renewals/Depreciation) for 2020/21 for Bridge and Culvert assets is 313.69%, which is considerably higher than the benchmark of 100%. This is due to the amount of State and Federal Government grant funding received. Renewals planned over the next four years will reach benchmarks.

Specifically the Infrastructure Backlog Ratio (Cost to Bring to Satisfactory/Written Down Value) for 2020/21 for Bridge and Culvert is 0.51% which is lower than the benchmark of 2%. The cost to bring to satisfactory is calculated by using a percentage of the replacement cost for assets in condition three (2.64%) and four (0.36%). An increase in capital expenditure with a clear focus on renewal programs and/or an increase in operational expenditure with a strategic emphasis on efficient and effective planned maintenance regimes should assist in reducing this for the future.

Specifically the Asset Maintenance Ratio (Asset Maintenance Expense/Required Maintenance) for 2020/21 for Bridge and Culvert assets is 0.52% which is lower than the benchmark of 100%. This indicates that an increase in operational expenditure is required to ensure the assets are maintained to an acceptable level of service and that premature renewals are not required. If this is not rectified the assets will have a declining condition and require much higher investments in asset renewals.

Specifically the Capital Expenditure Ratio (Capital Expenditure/ Depreciation) for 2020/21 for Bridge and Culvert assets is 3.14 and is higher than the benchmark of 100%. The Infrastructure Renewal Ratio will increase significantly over the next seven years due to an increase in capital expenditure reliant on State and Federal Government grant funding received.

10 REFERENCES

IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/namsplus.

IPWEA, 2009, 'Australian Infrastructure Financial Management Guidelines', Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/AIFMG.

IPWEA, 2015, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/IIMM

(Refer to Section 2.1 for relevant Council's documents in relation to this AMP).

11 APPENDICES

Appendix A	Acronym Glossary
Appendix B	Projected 10 Year Capital Renewal, Replacement and New Works Program
Appendix C	Operational Expenditure
Appendix D	Forecast of Asset Ratios to Local Government benchmarks
Appendix E	Bridge Services Activity Risk Register
Appendix F	Glossary/ Definitions

Appendix A - Acronym Glossary

Acronym	Definition
AAAC	Average annual asset consumption
AM	Asset management
AMP	Asset management plan
AMS	Asset management system
BASIX	Building Sustainability Index
CRC	Current replacement cost
CRM	Customer Request Management system
DA	Depreciable amount
DRC	Depreciated replacement cost
DPI	Department of Primary Industries Water
DPOP	Delivery Program and Operational Plan
EF	Earthworks/formation
IIMM	International Infrastructure Management Manual
IWCM	Integrated Water Cycle Management Plan
LCMP	Lifecycle Management Plan
LOS	Levels of Service
LTFP	Long term financial plan
MMS	Maintenance management system
POEO	Protection of Environment Operations Act
RV	Residual value
WARR	Waste Avoidance and Recovery Act
WDV	Written Down Value



Appendix B - Projected 10 year Capital

Renewal, Replacement and New Works Program

PROJECT DESCRIPTION	Type of Works			COST OF RENEWALS	TOTALS	Current Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	TOTAL 10 YEARS
	Improved LOS	Growth	Renewals			2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	
BRIDGES CAPITAL PROJECTS																	
3612. Cullingral Rd Culvert Replacement	50%		50%	-	-	275,000	-	-				-	-	-	-	-	-
4696. Barton St Causeway	50%		50%	275,000	550,000	-	-	-	-	300,000	250,000	-	-	-	-	-	550,000
4768. Camerons Bridge Rouchel	50%		50%	-	-	2,393,260	-	-	-	-	-	-	-	-	-	-	-
4870. Dry Creek Road Causeways	50%		50%	100,000	200,000	-		-	-	200,000	-	-	-	-	-	-	200,000
4871. Murulla Street Causeway Upgrade	100%		0%	-	1,100,000	58,978	1,100,000	-	-	-	-	-	-	-	-	-	1,100,000
4873. Timor Road Causeway Upgrade	20%		80%	160,000	200,000	-	-	-	-	-	100,000	-	100,000	-	-	-	200,000
4877. Stewarts Brook Causeways	20%		80%	240,000	300,000	-	-	-	-	100,000	200,000	-	-	-	-	-	300,000
4879. Warlands Bridge No1	20%		80%	232,292	290,365	15,600	290,365	-	-	-	-	-	-	-	-	-	290,365
4880. Warlands Bridge No2	20%		80%	232,357	290,446	15,600	290,446	-	-	-	-	-	-	-	-	-	290,446
4881. Warlands Bridge No3	20%		80%	231,738	289,673	15,600	289,673	-	-	-	-	-	-	-	-	-	289,673
4882. Warlands Bridge No4	20%		80%	232,237	290,296	15,600	290,296	-	-	-	-	-	-	-	-	-	290,296
4883. Warlands Bridge No5	20%		80%	232,538	290,672	15,600	290,672	-	-	-	-	-	-	-	-	-	290,672
4884. Scotts Creek Bridge No3	20%		80%	154,089	192,611	120,000	192,611	-	-	-	-	-	-	-	-	-	192,611
4885. Scotts Creek Bridge No2	20%		80%	378,398	472,998	26,000	472,998	-	-	-	-	-	-	-	-	-	472,998
4886. Blues Bridge	20%		80%	232,886	291,108	26,000	291,108	-	-	-	-	-	-	-	-	-	291,108
5166. Dartbrook Bridge	50%		50%	788,365	1,576,730	5,000	788,365	788,365	-	-	-	-	-	-	-	-	1,576,730
5234. Lapstone Gully Bridge 2km	20%		80%	435,043	543,804	5,000	271,902	271,902	-	-	-	-	-	-	-	-	543,804
5235. Lapstone Gully Bridge 2.9km	20%		80%	124,037	155,046	5,000	77,523	77,523	-	-	-	-	-	-	-	-	155,046
5236. Little St Bridge	20%		80%	301,976	377,470	26,000	377,470	-	-	-	-	-	-	-	-	-	377,470
5237. Bobialla Creek Bridge	20%		80%	492,018	615,022	5,000	307,511	307,511	-	-	-	-	-	-	-	-	615,022
5238. Ashford's Bridge	20%		80%	268,160	335,200	5,000	167,600	167,600	-	-	-	-	-	-	-	-	335,200
5239. Albano Bridge	20%		80%	290,196	362,745	5,000	181,373	181,372	-	-	-	-	-	-	-	-	362,745
5437. Concrete Causeway Upgrades	20%		80%	720,000	900,000	-	-	-	-	-		200,000	100,000	200,000	200,000	200,000	900,000
TOTAL CAPITAL WORKS EXPENDITURE PROPOSED FOR TEN YEAR PERIOD					9,624,186	3,033,238	5,679,913	1,794,273	0	600,000	550,000	200,000	200,000	200,000	200,000	200,000	9,624,186
TOTAL RENEWALS ONLY EXPENDITURE PROPOSED FOR TEN YEAR PERIOD				6,121,330													



Appendix C - Operational Expenditure

BRIDGES OPEX SUMMARY	CURRENT	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	10 YEAR TOTAL
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	
OPERATING EXPENDITURE												
DIRECT ASSET COSTS												
Administration	13,500	12,000	12,400	12,808	13,225	13,566	13,917	14,276	14,645	15,024	15,412	137,273
Bridge and Culvert Maintenance	450,000	280,250	288,813	297,466	305,932	313,731	321,729	329,932	338,344	346,972	355,820	3,178,989
INDIRECT ASSET COSTS												
Depreciation	443,161	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623	2,446,230
Loan Interest - Bridges Loan	65,836	61,285	55,538	50,031	43,901	37,287	30,366	22,359	14,073	5,146	-	319,986
Loan Interest - Bridge Loan 1	14,674	2,787	-	-	-	-	-	-	-	-	-	2,787
Loan Interest - Bridge Loan 2	14,222	6,501	531	-	-	-	-	-	-	-	-	7,032
Corporate Admin Overheads	245,447	267,197	276,549	286,228	296,246	303,652	311,244	319,025	327,000	335,175	343,555	3,065,871
TOTAL	1,246,840	874,643	878,454	891,156	903,927	912,859	921,879	930,215	938,685	946,940	959,410	9,158,168

Appendix D - Forecast of Asset Ratios to Local Government Benchmarks



	2021/22 Current Year	2022/23 Year 1	2023/24 Year 2	2024/25 Year 3	2025/26 Year 4	2026/27 Year 5	2027/28 Year 6	2028/29 Year 7	2029/30 Year 8	2030/31 Year 9	2031/32 Year 10
INFRASTRUCTURE RENEWAL											
Asset Renewals	1,577,430	3,427,421	1,198,909	-	330,000	365,000	160,000	160,000	160,000	160,000	160,000
Depreciation Expense	443,161	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623
INFRASTRUCTURE BACKLOG											
Estimated Cost to bring back to Satisfactory	255,355	49,708	-22,226	-22,226	-42,026	-63,926	-73,526	-83,126	-92,726	-102,326	-111,926
Closing Value of Assets	77,527,570	74,100,149	72,901,240	72,901,240	72,571,240	72,206,240	72,046,240	71,886,240	71,726,240	71,566,240	71,406,240
ASSET MAINTENANCE											
Asset Maintenance Expense	450,000	280,250	288,813	297,466	305,932	313,731	321,729	329,932	338,344	346,972	355,820
Required Asset Maintenance	466,457	123,715	3,824	3824	-29176	-65676	-81676	-97676	-113676	-129676	-145676
CAPITAL EXPENDITURE											
Annual Capital Expenditure	3,033,238	5,679,913	1,794,273	-	600,000	550,000	200,000	200,000	200,000	200,000	200,000
Annual Depreciation Expense	443,161	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623	244,623
SS7 Data											
Gross Replacement Cost (GRC)	105,592,445	108,769,932	108,251,040	107,651,586	108,086,586	108,289,086	108,226,586	108,266,586	108,306,586	108,346,586	108,386,586
% Infrastructure Condition 4 and above	0.21%	-0.11%	-0.22%	-0.22%	-0.25%	-0.29%	-0.30%	-0.32%	-0.33%	-0.35%	-0.36%
% Infrastructure Condition 3 and above	2.21%	0.57%	0.02%	0.02%	-0.13%	-0.30%	-0.38%	-0.45%	-0.52%	-0.60%	-0.67%
RATIOS BASED ON 3YR AVERAGE											
	Benchmark										
Infrastructure Renewal	100%	185.53%	329.07%	665.35%	630.40%	208.34%	94.70%	116.51%	93.34%	65.41%	65.41%
Infrastructure Backlog	2%	0.48%	0.38%	0.13%	0.00%	-0.04%	-0.06%	-0.08%	-0.10%	-0.12%	-0.14%
Asset Maintenance	1.00	0.79	1.02	1.72	6.60	-41.44	-10.08	-5.33	-3.94	-3.38	-2.98
Capital Expenditure	1.10	3.45	8.93	11.27	10.18	3.26	1.57	1.84	1.29	0.82	0.82
ACTUAL RATIO MEETING BENCHMARK											
Infrastructure Renewal	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
Infrastructure Backlog	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Asset Maintenance	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
Capital Expenditure	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗

Appendix E - Bridges Activity Risk Register



Risk	Consequence	Likelihood	Risk Rating	Proposed Treatment	Responsibility	Completion Date
Damage affecting structural performance	Moderate	Likely	High	SEPs are inspected on an annual basis and several proactive litter management programs are in place. A register of known flooding issues also exists in Council's GIS that can be prioritised in terms of importance and remedied.	Operation Services	Ongoing
Load Limit signs missing, illegible or damaged making signs substantially ineffective.	Major	Possible	High	Annual Flood Mitigation Program	Engineering, Strategy and Assets	Ongoing
Broken timber deck plan	Moderate	Possible	High	Kerb renewal works and flood mitigation works	Engineering, Strategy and Assets	Ongoing

Glossary

Annual service cost (ASC)

An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost includes operating, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.

Asset class

Grouping of assets of a similar nature and use in an entity's operations (AASB 166.37).

Asset condition assessment

The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

Asset management

The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.

Assets

Future economic benefits controlled by the entity as a result of past transactions or other past events (AAS27.12).

Property, plant and equipment including infrastructure and other assets (such as furniture and fittings) with benefits expected to last more than 12 month.

Average annual asset consumption (AAAC)*

The amount of a local government's asset base consumed during a year. This may be calculated by dividing the Depreciable Amount (DA) by the Useful Life and totalled for each and every asset OR by dividing the Fair Value (Depreciated Replacement Cost) by the Remaining Life and totalled for each and every asset in an asset category or class.

Brownfield asset values**

Asset (re)valuation values based on the cost to replace the asset including demolition and restoration costs.

Capital expansion expenditure

Expenditure that extends an existing asset, at the same standard as is currently enjoyed by residents, to a new group of users. It is discretionary expenditure, which increases future operating, and maintenance costs, because it increases council's asset base, but may be associated with additional revenue from the new user group, e.g. extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

Capital expenditure

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital funding

Funding to pay for capital expenditure.

Capital grants

Monies received generally tied to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

Capital investment expenditure

See capital expenditure definition

Capital new expenditure

Expenditure which creates a new asset providing a new service to the community that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operating and maintenance expenditure.

Capital renewal expenditure

Expenditure on an existing asset, which returns the service potential or the life of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components

or sub-components of the asset being renewed. As it reinstates existing service potential, it has no impact on revenue, but may reduce future operating and maintenance expenditure if completed at the optimum time, e.g. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital upgrade expenditure

Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operating and maintenance expenditure in the future because of the increase in the council's asset base, e.g. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Carrying amount

The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon.

Class of assets

See asset class definition

Component

An individual part of an asset which contributes to the composition of the whole and can be separated from or attached to an asset or a system.

Cost of an asset

The amount of cash or cash equivalents paid or the fair value of the consideration given to acquire an

asset at the time of its acquisition or construction, plus any costs necessary to place the asset into service. This includes one-off design and project management costs.

Current replacement cost (CRC)

The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

Current replacement cost “As New” (CRC)

The current cost of replacing the original service potential of an existing asset, with a similar modern equivalent asset, i.e. the total cost of replacing an existing asset with an as NEW or similar asset expressed in current dollar values.

Cyclic Maintenance**

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, cycle, replacement of air conditioning equipment, etc. This work generally falls below the capital/ maintenance threshold and needs to be identified in a specific maintenance budget allocation.

Depreciable amount

The cost of an asset, or other amount substituted for its cost, less its residual value (AASB 116.6)

Depreciated replacement cost (DRC)

The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset

Depreciation / amortisation

The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

Economic life

See useful life definition.

Expenditure

The spending of money on goods and services. Expenditure includes recurrent and capital.

Fair value

The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arms length transaction.

Greenfield asset values **

Asset (re)valuation values based on the cost to initially acquire the asset.

Heritage asset

An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture and this purpose is central to the objectives of the entity holding it.

Impairment Loss

The amount by which the carrying amount of an asset exceeds its recoverable amount.

Infrastructure assets

Physical assets of the entity or of another entity that contribute to meeting the public's need for access to major economic and social facilities and services, e.g. roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally the components and hence the assets have long lives. They are fixed in place and are often have no market value.

Investment property

Property held to earn rentals or for capital appreciation or both, rather than for:

- (a) use in the production or supply of goods or services or for administrative purposes; or
- (b) sale in the ordinary course of business (AASB 140.5)

Level of service

The defined service quality for a particular service against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental, acceptability and cost).

Life Cycle Cost **

The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises annual maintenance and asset consumption expense, represented by depreciation expense. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

Life Cycle Expenditure **

The Life Cycle Expenditure (LCE) is the actual or planned annual maintenance and capital renewal expenditure incurred in providing the service in a particular year. Life Cycle Expenditure may be compared to Life Cycle Cost to give an initial indicator of life cycle sustainability.

Loans / borrowings

Loans result in funds being received which are then repaid over a period of time with interest (an additional cost). Their primary benefit is in 'spreading the burden' of capital expenditure over time. Although loans enable works to be completed sooner, they are only ultimately cost effective where the capital works funded (generally renewals) result in operating and maintenance cost savings, which are greater than the cost of the loan (interest and charges).

Maintenance and renewal gap

Difference between estimated budgets and projected expenditures for maintenance and

renewal of assets, totalled over a defined time (e.g. 5, 10 and 15 years).

Maintenance and renewal sustainability index

Ratio of estimated budget to projected expenditure for maintenance and renewal of assets over a defined time (e.g. 5, 10 and 15 years).

Maintenance expenditure

Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level of service. It is expenditure, which was anticipated in determining the asset's useful life.

Materiality

An item is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the financial report. Materiality depends on the size and nature of the omission or misstatement judged in the surrounding circumstances.

Modern equivalent asset.

A structure similar to an existing structure and having the equivalent productive capacity, which could be built using modern materials, techniques and design. Replacement cost is the basis used to estimate the cost of constructing a modern equivalent asset.

Non-revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to the Council, e.g. parks and playgrounds, footpaths, roads and bridge, libraries, etc.

Operating expenditure

Recurrent expenditure, which is continuously required excluding maintenance and depreciation, e.g. power, fuel, staff, plant equipment, on-costs and overheads.

Pavement management system

A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

Planned Maintenance**

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

PMS Score

A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption*

A measure of average annual consumption of assets (AAAC) expressed as a percentage of the depreciable amount (AAAC/DA). Depreciation may be used for AAAC.

Rate of annual asset renewal*

A measure of the rate at which assets are being renewed per annum expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade*

A measure of the rate at which assets are being upgraded and expanded per annum expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

Reactive maintenance

Unplanned repair work that carried out in response to service requests and management/supervisory directions.

Recoverable amount

The higher of an asset's fair value, less costs to sell and its value in use.

Recurrent expenditure

Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operating and maintenance expenditure.

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining life

The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining life is economic life.

Renewal

See capital renewal expenditure definition above.

Residual value

The net amount which an entity expects to obtain for an asset at the end of its useful life after deducting the expected costs of disposal.

Revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, e.g. public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

Risk management

The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

Section or segment

A self-contained part or piece of an infrastructure asset.

Service potential

The capacity to provide goods and services in accordance with the entity's objectives, whether those objectives are the generation of net cash

inflows or the provision of goods and services of a particular volume and quantity to the beneficiaries thereof.

Service potential remaining*

A measure of the remaining life of assets expressed as a percentage of economic life. It is also a measure of the percentage of the asset's potential to provide services that is still available for use in providing services (DRC/DA).

Strategic Management Plan (SA)**

Documents Council objectives for a specified period (3-5 yrs), the principle activities to achieve the objectives, the means by which that will be carried out, estimated income and expenditure, measures to assess performance and how rating policy relates to the Council's objectives and activities.

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

(a) the period over which an asset is expected to be available for use by an entity, or

(b) the number of production or similar units expected to be obtained from the asset by the entity.

It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the council. It is the same as the economic life.

Value in Use

The present value of estimated future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate new cash flows,

where if deprived of the asset its future economic benefits would be replaced.

Source: DVC 2006, Glossary

Note: Items shown * modified to use DA instead of CRC

Additional glossary items shown **

Version History

Rev No	Date	Revision Details	Author	Reviewer	Approver
1	May 2011	Initial draft	JB/GD	JB	JB
2	February 2013	Update asset inventory and financial data	JB/GD	JB	JB
3	March 2017	Update asset inventory and financial data	JB - GNS	JB WP ST	
4	April 2019	Update asset inventory and financial data	GNS/AG	JB WP	
5	June 2020	Update asset inventory and financial data	GNS/KW	JB WP	
6	June 2021	Update asset inventory and financial data	GNS/KW	JB WP	
7	April 2022	Update asset inventory and financial data	KW	JB	