Nambucca Valley Council



Kerb and Gutter

Asset Management Plan (Concise)



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Asset Management Plan

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This Asset Management Plan may be used as a supporting document to inform an overarching Strategic Asset Management Plan.

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1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

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

This asset management plan details information about infrastructure assets including actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide the services generally over a 20-year planning period.

This plan covers the infrastructure assets that provide Kerb and Gutter

1.2 Asset Description

These assets include:

The Kerb and Gutter network comprises:

- Type SA Barrier Kerb
- Type RT Urban Mountable Kerb
- Type SB Dish Drain
- Type SM Traffic Island

These infrastructure assets extend to a combined length of 194Km and have significant value estimated at \$19.7M.

1.3 Levels of Service

Our present funding levels are sufficient to continue to provide existing services at current service levels in the medium term. The age of the kerb and gutter provides an indication its impending requirement for renewal, however the condition of the kerb and gutter allows for a modification to the useful life potentially postponing renewal. The comprehensive revaluation of these assets in 2020 revised the useful life to 120 years.

1.4 Future Demand

The main demands for new services are created by:

- Population growth and new development areas
- Redevelopment of older urban areas not currently served with K&G
- Replacement of upright barrier K&G with urban mountable kerb

These 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.

- Monitor development applications in new growth areas.
- Monitor and review growth in older urban areas and demand for extension of the K&G and drainage network
- Monitor demand for changes to requirements for vehicle access over kerbs

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this Asset Management Plan (AM Plan) includes operation, maintenance, renewal, acquisition, and disposal of assets over the 10-year planning period is \$1,290,683 or \$129,068 on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for this period is \$1,257,205 or \$125,721 on average per year as per the long term financial plan or budget forecast. This is 97 % of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the long term financial plan can be provided. The emphasis of the Asset Management Plan is to communicate the consequences that this will have on the service provided and risks, so that decision making is informed.

The anticipated planned budget leaves a shortfall of \$3,348 on average per year of the forecast lifecycle costs required to provide services in the AM Plan compared with planned budget currently included in the Long Term Financial Plan. This is shown in the figure below. The shortfall relates to the forecasted renewal derived from the age of the infrastructure. The kerb and gutter is generally in good condition given its age and it may be that, in specific cases, useful life can be extended in light of this. The condition of the kerb and gutter will be monitored and useful life adjusted accordingly. The adjustments will be reflected in the asset register and revised management plan that will in turn inform the budget.



Forecast Lifecycle Costs and Planned Budget

Figure Values are in current (real) dollars.

We plan to provide Kerb & Gutter services for the following:

- Operation, maintenance, renewal and upgrade of kerb and gutter to meet service levels set by in annual budgets.
- Council intends to service and maintain the kerb and gutter whilst reviewing its performance and useful life against its age, within the 10-year planning period.

1.6.2 Managing the Risks

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

The main risk consequences are: Choose an item.

- Failure to Construct K&G at appropriate time
- Poor Quality Finish

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

- Monitor growth of urban areas and condition/useful life of aging K&G
- Staff Training program

1.7 Asset Management Practices

Our systems to manage assets include:

- Council uses Civica's Authority Enterprise Software Suite as the financial system
- Council utilises a combination of Excel spread sheets, the Capital Value Record Management component in the Authority corporate software package and the Reflect program

Assets requiring renewal/replacement are identified from either the asset register or an alternative method. These methods are part of the Lifecycle Model.

 Asset Register data is used to forecast the renewal costs this is done using the acquisition year and the useful life, this information is modified using asset condition information with particular reference to remaining useful life.

The Asset Register was used to forecast the renewal life cycle costs for this asset management plan.

1.8 Monitoring and Improvement Program

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

- Reassess asset condition and review useful life
- Establish levels of Service through community consultation
- Further analysis of demand growth factors
- Establish renewal priority ranking criteria
- Further develop asset registers utilising asset management plans
- Develop maintenance response levels of service

2.0 Introduction

2.1 Background

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

The asset management plan is to be read with the Council's planning documents. This should include the Asset Management Policy and Asset Management Strategy, where developed, along with other key planning documents:

- Asset Management Policy
- Asset Management Strategy
- Asset Management Plans Summary

Comment on the current status of Asset Management in the Organisation.

The infrastructure assets covered by this asset management plan include Kerb & Gutter. For a detailed summary of the assets covered in this asset management plan refer to Table in Section 5.

These assets are used to contribute to the stormwater drainage collection network and sealed road network.

The infrastructure assets included in this plan have a total replacement value of insert \$ 19,775,335.

2.2 Goals and Objectives of Asset Ownership

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, and
- Linking to a long-term financial plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are

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

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

- International Infrastructure Management Manual 2015¹
- ISO 55000²

A road map for preparing an asset management plan is shown below.

Road Map for preparing an Asset Management Plan

Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11

¹ Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2 | 13

² ISO 55000 Overview, principles and terminology



3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

Nambucca Valley Council Community Survey was undertaken in 2021. Table 3.1 summarises the results from our Customer Satisfaction Survey.

Table 3.1:	Customer	Satisfaction	Survey	Levels
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	Satisfaction Level						
Performance Measure	Very Satisfied	Fairly Satisfied	Satisfied	Somewhat satisfied	Not satisfied		
Council services and facilities		~					

3.2 Strategic and Corporate Goals

This asset management plan is prepared under the direction of the Council vision, mission, goals and objectives.

Our vision is:

Nambucca Valley – Living at its best

Our mission is:

The Nambucca Valley will value and protect its natural environment, maintain its assets and infrastructure and develop opportunities for its people.

Strategic goals have been set by the Council. The relevant goals and objectives and how these are addressed in this asset management plan are summarised in Table 3.2.

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

Goal	Objective	How Goal and Objectives are addressed in the AM Plan
Documented Levels of Service	Service levels to be provided and the costs of providing the service	Community consultation
Maintain assets	Provide and maintain assets which meet the needs of the Valley.	Establishing a maintenance and renewal program that ensures provision of adequate levels of service from kerb and gutter assets.
Appropriate services	To have a community where services reflect the needs of the population.	Taking into account community expectations when setting levels of service for kerb and gutter assets.

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the kerb and gutter service are outlined in Table 3.3.

Table 3.3: Legislative Requirements

Legislation	Requirement			
Local Government Act	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			
Work Health and Safety Act	Secures and promotes health, safety and welfare of people at work			
Roads Act 1993	Defines rites of passage on public roads and rights of property owners adjoining public roads. Confers the authority of the road authority and provides for road classifications			
Australian Accounting Standards	Set out the financial reporting standards relating to, inter alia the (re)valuation and depreciation of infrastructure assets			
Australian Road Rules	Contains powers for Council to install and remove traffic control devices			
Native Vegetation Act 2003	Prevent broad scale clearing unless it improves or maintains environmental outcomes			
Noxious Weeds Act 1993	Prevent the establishment of new and spread of existing significant weeds. Reduce existing significant weeds			
Protection of the Environment Operations Act 1997	Protect, restore and enhance the quality of the environment, having regard to the need to maintain ecologically sustainable development. Rationalise, simplify and strengthen the regulatory framework for environment protection			
Road Transport (Safety and Traffic Management) Act 1999	Improve safety and efficiency of transport on roads and road related issues.			
Water Management Act 2000	The objects of this Act are to provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations and, in particular: (a) To apply the principles of ecologically sustainable development, and (b) To protect, enhance and restore water sources, their associated ecosystems, ecological processes and biological diversity and their water quality, and (c) To recognise and foster the significant social and economic benefits to the State that result from the sustainable and efficient use of water, including: (i) benefits to the environment, and (ii) benefits to urban communities, agriculture, fisheries, industry and recreation, and (iii) benefits to the Aboriginal people in relation to their spiritual, social, customary and economic use of land and water, (d) To recognise the role of the community, as a partner with government, in resolving issues relating to the management of water sources, (e) To provide for the orderly, efficient and equitable sharing of water from water sources, (f) To integrate the management of water sources with the management of other aspects of the environment, including the land, its soil, its native vegetation and its native fauna, (g) To encourage the sharing of responsibility for the sustainable and efficient use of water between the Government and water users, (h) To encourage best practice in the management and use of water.			

3.4 Customer Values

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

Customer Values indicate:

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

3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Quality How good is the service ... what is the condition or quality of the service?

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

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

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

These are measures of fact related to the service delivery outcome e.g. number of occasions when service is not available, condition %'s of Very Poor, Poor/Average/Good, Very Good and provide a balance in comparison to the customer perception that may be more subjective.

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Condition	Suitable network for purpose and aesthetically satisfactory	Free of defects, straight and aligned	Majority is in good condition, defects noted and referred for repair	Defects will be removed with scheduled road upgrades
	Confidence levels		High	High
Function	Fit for purpose in drainage and road network	Free of defects, straight and aligned without dips or ridges or ponding	Majority is in good condition, defects noted and referred for repair	Defects will be removed with scheduled road upgrades
	Confidence levels		High	High
Capacity	Fit for purpose in drainage and road network	Free of defects, straight and aligned without dips or ridges or ponding	Majority is in good condition, defects noted and referred for repair	Defects will be removed with scheduled road upgrades
	Confidence levels		High	High

3.6 Technical Levels of Service

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

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

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

Service and asset managers plan, implement and control technical service levels to influence the service outcomes.³

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

	Table	3.6:	Technical	Levels	of	Service
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Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEV	ELS OF SERVICE			
Acquisition	Acquire quality K&G assets though developer contributions	Metres of new K&G contributed each year	To the limit created in the development cycle	Optimise the development cycle to reduce cycle time
	Upgrade road network removing swales in urban areas in accordance with redevelopment plan	Metres of new K&G constructed each year	To the limit of the adopted budget	Implement re- development plan
		Budget	\$61,180	Subject to review
Operation	Keep roads swept and gutters cleaned	Frequency of cleaning	Variable subject to hierarchy of road, min of once/month	All roads swept on same frequency
	Review functionality by inspection	Frequency of inspection	Variable subject to hierarchy of road, min of once/3month	All roads reviewed on the same frequency
		Budget	Incorporated in sealed roads operational costs	Growth with CPI
Maintenance	Remove trip or vehicle damage hazard	Regular and reactive inspections	Reactive repairs to cracks and dislocations	Regular condition assessment to inform, maintenance/renewal program
	Preserve gutter drainage performance	Regular and reactive inspections	Reactive patching and adjustment to remove ponding	Regular condition assessment to inform, maintenance/renewal program
		Budget	\$0 for this particular year	Grow with CPI
Renewal	Ensure that K&G is pedestrian and vehicle friendly and aesthetically pleasing	Technical design standards for K&G	Design Life	Useful life based on condition assessment

³ IPWEA, 2015, IIMM, p 2|28.

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
	Ensure that K&G is functional and efficient to convey stormwater	Design standards for K&G stormwater conveyance	Design Life	Useful life based on condition assessment
		Budget	\$0	No renewal in scheduled in the planning period
Disposal	Not applicable to K&G	Measure used	Frequency or annual amount spent on Activity	Optimal frequency or annual amount spent on Activity
		Budget	Average Planning Period Proposed Disposal Budget	Average Planning Period Forecast Disposal Work

Note: * Current activities related to planned budget.

** Forecast required performance related to forecast lifecycle costs.

It is important to monitor the service levels provided regularly as these will change. The current performance is influenced by work efficiencies and technology, and customer priorities will change over time.

4.0 FUTURE DEMAND

4.1 Demand Drivers

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

4.2 Demand Forecasts

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

4.3 Demand Impact and Demand Management Plan

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

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

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

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Population	Present population of just over 20,000	Forecast population by 2025 is in the order of 22,000	Increaseinpopulationwillgeneratenewassetsandpressuretoredevelopolderurban areas	Monitoring development applications for changing trends in population growth.
Lifestyle/vehicle access	Majority of K&G is upright with a demand for crossover risers	Population demographic may push for changes to kerb profile	Pressure of demand may bring forward planned renewals	Monitor demand and evaluate vehicle access options.

Table 4.3: Demand Management Plan

4.4 Asset Programs to meet Demand

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

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

4.5 Climate Change and Adaption

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

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

As a minimum we should consider both how to manage our existing assets given the potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions.

Opportunities identified to date for management of climate change impacts on existing assets are shown in Table 4.4.

Table 4.4 Managing the Impact of Climate Change on Assets

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Rainfall intensity/frequency	Increased frequency of rood flooding	K&G inundated more frequently with road network	Review overall drainage strategy. Public education of road inundation

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

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

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this asset management plan.

5.0 LIFECYCLE MANAGEMENT PLAN

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

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this asset management plan are concrete kerb and gutter with a current combined length of 194Km and replacement value of \$19.7M

The age profile of the assets included in this AM Plan are shown in Figure 5.1.1.

The age profile is based on virtual age derived from the asset condition predicting remaining useful life.



Figure 5.1.1: Asset Age Profile

All figure values are shown in current (real) dollars.

5.1.2 Asset capacity and performance

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

Location	Service Deficiency
Bowraville	Older urban areas retain grassed table drains and culvert access. Will eventually be redeveloped with K&G.
Macksville & Bowraville	Old service lanes are unconstructed roads without K&G to intercept and manage stormwater

The above service deficiencies were identified from field survey and Arc GIS

5.1.3 Asset condition

Condition is currently monitored yearly and is incorporated in regular asset revaluation process.

Condition is measured using a 1 - 5 grading system⁴ as detailed in Table 5.1.3. It is important that consistent condition grades be used in reporting various assets across an organisation. This supports effective communication. At the detailed level assets may be measured utilising different condition scales, however, for reporting in the AM plan they are all translated to the 1 - 5 grading scale.

⁴ IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

Table 5.1.3: Simple Condition Grading Model

Condition Grading	Description of Condition
1	Very Good: only planned maintenance required
2	Good: minor maintenance required plus planned maintenance
3	Fair: significant maintenance required
4	Poor: significant renewal/rehabilitation required
5	Very Poor: physically unsound and/or beyond rehabilitation

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





The recent inspection of the kerb and gutter assets revealed that they are generally in good to very good condition for their age. There are signs of surface deterioration exposing the concrete aggregate but this does no impact on its performance. The good condition may support re-assessing and extending the nominated useful life.

All figure values are shown in current (real) dollars.

5.2 Operations and Maintenance Plan

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

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

The trend in maintenance budgets are shown in Table 5.2.1.

TUDIE J.Z.I. WIUIIILEIIUIILE DUUUEL TIEIIUS	Table	5.2.1:	Maintenance	Budaet	Trends
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Year	Maintenance Budget \$
2020/21	\$13,402

2021/22	\$63,850
2022/23	\$0

Maintenance budget for 2022/23 was reduced to zero to allow in increase in drainage maintenance for this particular year.

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

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

Summary of forecast operations and maintenance costs

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





All figure values are shown in current (real) dollars.

The operational costs relate to street sweeping and as such are included in the provision for sealed roads and carparks. The trend line of growing cost of maintenance and operation appears to exceed the forecast budget. The reality is that the work will match the budget without impacting on the level of service.

5.3 Renewal Plan

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

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

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

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3. Asset useful lives were last reviewed on 2020. Useful life has been extended in all classes to 120 years to align with future road renewal (i.e. 2nd renewal at 120 years) and in light of general good condition of the asset.

Table 5.3: Useful Lives of Assets	Table 5.3:	Useful Live	s of Assets
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Asset (Sub)Category	Useful life
Class 1 Concrete (All types of K&G)	60 years extended to 120 years.
Class 2 Concrete (All types of K&G)	60 years extended to 120 years
Class 3 Concrete (All types of K&G)	68 years extended to 120 years
Class 4 Concrete (All types of K&G)	84 years extended to 120 years

The estimates for renewals in this asset management plan were based on the asset register.

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a playground).⁵

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

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.⁶

The ranking criteria used to determine priority of identified renewal proposals is detailed in Table 5.3.1.

Table 5.3.1: Renewal Priority Ranking Criteria

Criteria	Weighting
Physical Conditions (e.g. type of material, structure, defects)	50%
Risk and Safety Impact	25%
Environmental Condition including aesthetic	10%
Social conditions (e.g. Location – shopping centre etc.)	15%

⁵ IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

⁶ Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3 | 97.

Criteria	Weighting
Total	100%

5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases.

The recent condition assessment revealed that the kerb and gutter was in better condition that its age would imply and useful life has been extended as discussed above. Consequently there are no significant renewal projects anticipated within the planning period.

5.5 Acquisition Plan

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

5.5.1 Selection criteria

Proposed upgrade of existing assets, and new assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the Entities needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.4.1.

Table 5.4.1: Acquired Assets Priority Ranking Criteria

Criteria	Weighting
Business and commercial centres	15%
Missing links within the drainage/road system	25%
Urban growth areas	15%
Petitions received	20%
Tourist areas	25%
Total	100%

Summary of future asset acquisition costs

Forecast acquisition asset costs are limited at this time to contributed assets. There are currently no planned works or budget to extend the kerb and channel network.

When an Entity commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long-term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Entity. The cumulative value of all acquisition work, including assets that are constructed and contributed shown in Figure 5.4.2.

Figure 5.4.2: Acquisition Summary



All figure values are shown in current (real) dollars.

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

Council's budget going forward meets the required funding for operating and capital expenditure.

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.4.3. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

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



Figure 5.4.3: Lifecycle Summary

All figure values are shown in current (real) dollars.

Previous discussion has addressed the apparent divergence of budget and asset renewal. The condition of the kerb and gutter will be monitored and the useful life and renewal adjusted accordingly.

5.6 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation.

At the time of writing this asset management plan, Council has not identified any assets for disposal.

6.0 RISK MANAGEMENT PLANNING

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

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

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

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Council does not consider kerb and gutter to be a critical asset

6.2 Risk Assessment

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

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

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



Source: ISO 31000:2018, Figure 1, p9

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

An assessment of risks⁷ associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

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

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Kerb & Channel	Failure to Construct K&G at appropriate time	Medium	Monitor growth of urban areas and condition/useful life of aging K&G	Low	\$2,000
Kerb & Channel	Poor Quality Finish	Medium	Staff Training program	Low	\$2,000

Table 6.2: Risks and Treatment Plans

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

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to 'withstand a given level of stress or demand', 1 and to respond to possible disruptions to ensure continuity of service.

Resilience is built on aspects such as response and recovery planning, financial capacity, climate change and crisis leadership.

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

⁷ REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

Table 6.3: Resilience

Threat / Hazard	Current Resilience Approach		
Discontinuation of road network service (including K&G) due to severe weather damage	Council require a Business Continuity Policy and Plans to ensure that in the event of disruption to the services, a strategy is in place to provide fo the reinstatement of those services as soon a possible to minimise any disruption to th community		

6.4 Service and Risk Trade-Offs

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

6.4.1 What we cannot do

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

Nil

6.4.2 Service trade-off

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

Nil

6.4.3 Risk trade-off

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

Nil

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

7.0 FINANCIAL SUMMARY

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

7.1 Financial Statements and Projections

7.1.1 Asset valuations

The best available estimate of the value of assets included in this Asset Management Plan are shown below. The assets are valued at fair market value replacement costs at present day.



7.1.2 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the asset management plan for this service area. The two indicators are the:

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

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio⁹ 0%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 0% of the funds required for the optimal renewal of assets i.e.there are no identified renewal projects required within the planning period.

Medium term - 10 year financial planning period

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

This forecast work can be compared to the proposed budget over the 10 year period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is \$129,068 on average per year.

The proposed (budget) operations, maintenance and renewal funding is \$125,205 on average per year giving a 10 year funding shortfall of \$3,348 per year. This indicates that 97% of the forecast costs needed to provide the services documented in this asset management plan are accommodated in the proposed budget. This excludes acquired assets.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast costs and financing to achieve a financial indicator of approximately 1.0 for the first years of the asset management plan and ideally over the 10-year life of the Long Term Financial Plan.

⁸ Also reported as Written Down Value, Carrying or Net Book Value.

⁹ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

7.1.3 Forecast costs for long term financial plan

Table 7.1.3 shows the forecast costs for the 10 year long term financial plan.

Forecast costs are shown in current dollar real values.

Year	Forecast Acquisition	Forecast Operation	Forecast Maintenance	Forecast Renewal	Forecast Disposal
2023	\$60,180	\$0	\$0	\$0	\$0
2024	\$61,384	\$0	\$62,010	\$0	\$0
2025	\$62,611	\$0	\$63,959	\$0	\$0
2026	\$63,863	\$0	\$65,948	\$0	\$0
2027	\$65,141	\$0	\$67,978	\$0	\$0
2028	\$66,444	\$0	\$70,050	\$0	\$0
2029	\$67,772	\$0	\$72,164	\$0	\$0
2030	\$69,128	\$0	\$74,322	\$0	\$0
2031	\$70,510	\$0	\$76,525	\$0	\$0
2032	\$71,921	\$0	\$78,772	\$0	\$0

Table 7.1.3: Forecast Costs for Long Term Financial Plan

7.2 Funding Strategy

The proposed funding for assets is outlined in the Entity's budget and long term financial plan.

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

7.3 Valuation Forecasts

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

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

7.4 Key Assumptions Made in Financial Forecasts

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

Key assumptions made in this asset management plan are:

- Unit rates have been derived from construction costs
- Construction dates have been derived from age of local drainage network, DP plans, road construction dates.
- Condition assessment was made from visual survey of streets.

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale¹⁰ in accordance with Table 7.5.1.

Table 7.5.1:	Data Confidence	Grading System
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Confidence Grade	Description
A. Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate \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 this AM Plan is shown in Table 6.5.1.

Table 7.5.1: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	В	
Growth projections	В	Based on 10 year budget and development trend
Acquisition forecast	В	Based on 10 year budget and development trend
Operation forecast	С	Shared cost of street sweeping, can be adjusted to match budget
Maintenance forecast	В	Based on 10 year budget
Renewal forecast		
- Asset values	В	Based on unit rates for construction
- Asset useful lives	В	Based on actual asset condition
- Condition modelling	В	Based on field inspection
Disposal forecast		Not applicable

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

¹⁰ IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices¹¹

8.1.1 Accounting and financial data sources

This asset management plan utilises accounting and financial data. The source of the data is Council's forward planning financial budget for the next 10 years.

8.1.2 Asset management data sources

This asset management plan also utilises asset management data. The source of the data is Council's asset register for kerb and gutter, updated by field inspection.

8.2 Improvement Plan

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

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Optimize the development assessment process to efficiently deliver contributed assets, including asset capture into asset registers and database	DA team	Internal	2023
2	Regular and frequent (yearly) condition assessment and data review of assets to inform maintenance and renewal programs	Asset Engineer	Internal	2023
3	Establish levels of Service through community consultation	Manager Assets	Staff time	Before next AM plan review
4				
5				
6				
7				
8				
9				
10				

¹¹ ISO 55000 Refers to this the Asset Management System

8.3 Monitoring and Review Procedures

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

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, upgrade/new and asset disposal costs and proposed budgets. These forecast costs and proposed budget are incorporated into the long-term financial plan or will be incorporated into the long-term financial plan once completed.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating before 2024. This cycle matches the Council election cycle and IP & R periods.

8.4 Performance Measures

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

- The degree to which the required forecast costs identified in this asset management plan are incorporated into the long term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures take into account the 'global' works program trends provided by the asset management plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 1.0).

9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.
- IPWEA, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMM.
- IPWEA, 2015, 3rd edn., 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2012 LTFP Practice Note 6 PN Long Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- ISO, 2018, ISO 31000:2018, Risk management Guidelines
- Nambucca Valley Council 2023 community Strategic plan
- Nambucca Valley Council Annual Plan and Budget

10.0 APPENDICES

Appendix A Acquisition Forecast

Acquisition forecasts are based on current trends in development growth and urban redevelopment and expansion. Growth trends will be monitored and forecasts adjusted accordingly.

Table A1 - Acquisition Forecast Summary

Year	Constructed	Contributed	Growth
2023	\$60,180	\$175,758	\$0
2024	\$61,384	\$179,632	\$0
2025	\$62,611	\$183,591	\$0
2026	\$63,863	\$187,637	\$0
2027	\$65,141	\$191,773	\$0
2028	\$66,444	\$196,000	\$0
2029	\$67,772	\$200,319	\$0
2030	\$69,128	\$204,734	\$0
2031	\$70,510	\$209,247	\$0
2032	\$71,921	\$213,859	\$0
2033	\$73,359	\$218,572	\$0
2034	\$74,826	\$223,389	\$0
2035	\$76,323	\$228,313	\$0
2036	\$77,849	\$233,345	\$0
2037	\$79,406	\$238,488	\$0
2038	\$80,994	\$243,744	\$0
2039	\$82,614	\$249,116	\$0
2040	\$84,267	\$254,607	\$0
2041	\$85,952	\$260,218	\$0
2042	\$87,672	\$265,422	\$0

Appendix B Operation Forecast

Operational costs is a shared street sweeping function with roads and is included in that allocation. *Table B1 - Operation Forecast Summary*

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2023	0	0	0
2024	0	0	0
2025	0	0	0
2026	0	0	0
2027	0	0	0
2028	0	0	0
2029	0	0	0
2030	0	0	0
2031	0	0	0
2032	0	0	0
2033	0	0	0
2034	0	0	0
2035	0	0	0
2036	0	0	0
2037	0	0	0
2038	0	0	0
2039	0	0	0
2040	0	0	0
2041	0	0	0
2042	0	0	0

Appendix C Maintenance Forecast

The maintenance forecast includes provision for growth in acquisition, this factor will be monitored and maintenance expenditure adjusted accordingly.

Table C1 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2023	\$0	\$708	\$0
2024	\$61,302	\$723	\$62,010
2025	\$62,528	\$739	\$63,959
2026	\$63,779	\$755	\$65,948
2027	\$65,054	\$771	\$67,978
2028	\$66,355	\$787	\$70,050
2029	\$67,682	\$804	\$72,164
2030	\$69,036	\$822	\$74,322
2031	\$70,417	\$839	\$76,525
2032	\$71,825	\$857	\$78,772
2033	\$73,262	\$876	\$81,066
2034	\$74,727	\$895	\$83,407
2035	\$76,221	\$914	\$85,796
2036	\$77,746	\$934	\$88,235
2037	\$79,301	\$954	\$90,723
2038	\$80,887	\$974	\$93,263
2039	\$82,504	\$995	\$95,855
2040	\$84,155	\$1,017	\$98,500
2041	\$85,838	\$1,039	\$101,200
2042	\$87,554	\$1,039	\$103,955

Appendix D Renewal Forecast Summary

No renewal projects identified for this planning period

Appendix E Disposal Summary

At the time of writing this asset management plan, Council has not identified any assets for disposal.

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total Budget
2023	\$60,180	\$0	\$0	\$0	\$0	\$60,180
2024	\$61,384	\$0	\$62,010	\$0	\$0	\$122,686
2025	\$62,611	\$0	\$63,959	\$0	\$0	\$125,139
2026	\$63,863	\$0	\$65,948	\$0	\$0	\$127,642
2027	\$65,141	\$0	\$67,978	\$0	\$0	\$130,468
2028	\$66,444	\$0	\$70,050	\$0	\$0	\$132,799
2029	\$67,772	\$0	\$72,164	\$0	\$0	\$135,454
2030	\$69,128	\$0	\$74,322	\$0	\$0	\$138,164
2031	\$70,510	\$0	\$76,525	\$0	\$0	\$140,927
2032	\$71,921	\$0	\$78,772	\$0	\$0	\$143,746
2033	\$73,359	\$0	\$81,066	\$0	\$0	\$146,621
2034	\$74,826	\$0	\$83,407	\$0	\$0	\$149,553
2035	\$76,323	\$0	\$85,796	\$0	\$0	\$152,544
2036	\$77,849	\$0	\$88,235	\$0	\$0	\$155,595
2037	\$79,406	\$0	\$90,723	\$0	\$0	\$158,707
2038	\$80,994	\$0	\$93,263	\$0	\$0	\$161,881
2039	\$82,614	\$0	\$95,855	\$0	\$0	\$165,118
2040	\$84,267	\$0	\$98,500	\$0	\$0	\$168,422
2041	\$85,952	\$0	\$101,200	\$0	\$0	\$171,790
2042	\$87,672	\$0	\$103,955	\$0	\$0	\$175,226

Table F1 – Budget Summary by Lifecycle Activity