NORFOLK ISLAND
Regional Council

ASSET MANAGEMENT PLAN

Roads and Drainage

Adopted - 7 June 2023 (Res: 2023/57)

Document Control	Roads and Drainage Asset Management Plan				
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V1.0	May 2023	Final	Roger Nielsen	Gordon Malesevic	Andrew Roach
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1.0 EXECUTIVE SUMMARY

1.1 Context

This Asset Management Plan (AM Plan) details information about Roads and Drainage assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks.

This plan covers the infrastructure assets In the Road and Drainage network comprising:

- 2 paved runways at the Norfolk Island Airport
- 80.5km of Roads
- 1 Bridge
- 5 Cattle stops
- Footpaths located in the main town and airport area
- 3 Roundabouts
- Stormwater:
  - 7 major culverts
  - 168 minor culverts
  - 3.9km of kerb and channel

The above infrastructure assets have an estimated replacement value of $159.3m as of December 2022.

1.2 Levels of Service

The allocation in the planned budget is sufficient to continue providing existing services at current levels for the planning period. The target level of service is to ensure that assets remain in a serviceable condition. However, there is a risk that insufficient road materials will be available to meet the required maintenance and renewal work.

1.3 Future Demand

There are a limited number of future demand and impact drivers that are expected to cause a material demand shift on the road and drainage network service delivery. While tourism will continue to be the dominant known demand shift on services, increased transportation of containers from the anticipated development of roll-on-roll-off port facilities may result in the upgrading of some road assets.

1.4 Condition Assessment

An audit of roads and drainage assets undertaken in April 2023 found that 41% of the Council's Road assets have significant defects and 13% are physically unsound.[1] The finding for Stormwater assets is that 34% have significant defects and 2% are physically unsound.

1.5 Lifecycle Management Plan

The forecast lifecycle costs necessary to provide the services covered by this AM Plan include maintenance and renewal of assets. The AM Plan informs a long-term financial planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for the Road and Drainage infrastructure is estimated as $1.6m on average per year. Road surface and pavement renewal comprise 98% of forecast outlays over the planning period.

1.6 Financial Summary

The estimated available funding, including a 15% contingency, for the 10 year period is $18m so $1.8m on average per year. This will fund estimated maintenance and renewal costs over the 10 year planning period.

The reality is that only what is funded in annual budgets can be provided. Informed decision making depends on the AM Plan emphasising the consequences of planned budgets on the service levels provided and risks.

[1] Milanovic Neale Consulting Engineers, Norfolk Island Road Network Assessment Audit Report, April 2023

1.7 Monitoring and Improvement Program

Reviewing and updating this AM Plan as part of the annual budget process will ensure that it remains current and funding allocations are in line with service requirements. and asset management practices, asset hierarchy management and the asset management system will be reviewed in line with the improvement plan.

2.0 Introduction

2.1 Background

An AM Plan is developed to demonstrate planned management of assets and the services provided from those assets, compliance with regulatory requirements, and to define the funding needed to provide the planned levels of service over a 10 year planning period.

The development of this AM Plan was guided by the AM Plan structure and content recommendations set down in the IPWEA's International Infrastructure Management Manual (IIMM, Version 6.0, 2020)

This AM Plan is to be read in conjunction with Council's Asset Management Policy and with reference to the current versions of the following key planning documents:

- Community Strategic Plan
- Long Term Financial Plan
- Operational Plan including the annual budget

Asset management planning within Council is developing. The aim is to have asset management plans at the IPWEA's Core maturity level[2]. This means that AM Plans contain content including asset information, levels of service, demand and lifecycle strategies linking to financial forecasts with key assumptions stated.

The infrastructure assets covered by this AM Plan are shown in Table 2.1.

Table 2.1: Infrastructure assets covered by this AM Plan

Category	Estimated Replacement Value[3]	Category	Estimated Replacement Value
■ Airport runways	$109.3m	■ Footpaths	$1.8m
■ Roads	$42.1m	■ Roundabouts	$421k
■ Bridges	$136k	■ Stormwater	$5.1m
■ Cattle stops	$161k	■ Traffic islands	$125k

The above infrastructure assets have an estimated replacement value of $159.3m as of December 2022.

2.2 Asset Data

Council's Asset Management System, AssetFinda, currently stores data on roads and drainage assets controlled by Council.

The data being captured is reliant on the type of asset being entered into the AssetFinda system. For example larger complex assets, such as roads, that have significant parts with differing lifecycles are componentised.

The asset hierarchy, componentisation and estimated useful lives are set down in Council Policy Statement No. 3.07 Asset Accounting Policy and are summarised in Table 5.3 of this AM Plan.

2.3 Key Stakeholders

Key stakeholders in the preparation and implementation of this AM Plan are shown in Table 2.3.

[2] IPWEA, 2020, Sec 3.6.5, Aligning the AM PLANs and Corporate Plan: identifies 5 levels of maturity from Aware to Advanced. Core level is level 3. Currently, Council's AM planning is considered to be at level 2, Basic.

[3] All figure values are shown in current-day dollars (December 2022). The gross carrying amount recorded in the asset register has been indexed using the Road and bridge construction Australia Producer Price Index published by the Australian Bureau of Statistics.

Table 2.3: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Norfolk Island Community	■ Primary consumers of the services provided by the assets
Council Administrator and General Manager	■ Endorse the AM Plan ■ Allocate resources to meet planning objectives in providing services while managing risks, ■ Ensure services are sustainable.
Audit and Risk Management Committee	■ Independent assurance and assistance to Council on Council's risk, control and compliance frameworks, and external accountability.
Management	■ Support the objectives of the AM Plan, ■ Provide strategic and operational input and support, ■ Project manage the design and implementation of renewal, upgrade and new construction of infrastructure assets. ■ Allocate and manage the necessary resources to support the implementation of the AM Plan.
Engineer and technical officers	■ Provide technical input and support, ■ Prepare and update works programmes, ■ Delivery of works programmes, ■ Update and maintain the integrity of asset data.
Corporate and Finance	■ Ensure the integrity of financial data relevant to the implementation of the AM Plan

2.4 Goals and Objectives of Asset Management

Our goal for managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for the present and future community. We have acquired infrastructure assets by purchase, by contract, by construction by our staff and by donation of assets constructed by the Commonwealth and others.

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.

2.5 AM Plan Framework

- The IIMM outlines that there is no single correct way to structure an AM Plan and many councils have developed their own[4]. This plan incorporates the IIMM AM Plan structure although it has modified elements to suit Council's asset management position at this point in time.
- The key structure of the plan is as follows:
    - 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,
    - Risk management,
    - Financial summary – what funds are required to provide the defined services,
    - Monitoring – how the plan will be monitored to ensure objectives are met,
    - Asset management improvement plan – how we increase asset management maturity.

[4] IPWEA, IIMM,2020, Sec 3.6.3, The Portfolio AM PLAN, Activity and Service Plans

3.0 LEVELS OF SERVICE

3.1 Community Research and Expectations

Council receives community input from a variety of sources including:

- the community strategic planning consultation process,
- feedback on Council's delivery program,
- submissions on the annual Operational Plan including the annual budget,
- reports from the Council advisory committees,
- consultation outcomes from planning and review undertakings, and
- ad hoc representations from community groups and individuals.

The **Norfolk Island Community Strategic Plan: 2016-2026** was prepared in consultation and cooperation with a broad cross section of the community and reflects the aspirations and values of the people who live on Norfolk Island. Development of the Plan was undertaken in three phases and included twenty-one focus groups, individual surveys, community workshops, public forums and a draft plan released for public consultation during each phase.

The community's vision and the Council's mission are set down in the Plan.

Our vision is:

> *Norfolk Island – the Best Small Island in the World*

Our mission is:

> *The Norfolk Island Regional Council will provide local civic leadership and governance through good decision making, accountability and transparency.*
>
> *We will protect and enhance our unique culture, heritage, traditions and environment for the Norfolk Island People. We will do this through promoting a healthy and sustainable lifestyle, by looking after our community assets, and by fostering a prosperous economy.*

The community's aspirations from the Strategic Plan are incorporated into the **Delivery Program** that each elected Council commits to undertake during its four-year term of office. These commitments are given substance by Council's annual **Operational Plan** which includes the annual budget. The cost to procure and renew assets are detailed in the annual budget along with the forecast operation and maintenance costs to ensure that the assets can deliver their intended level of service to the community.

The local government act covering Norfolk Island stipulates a minimum of twenty-eight days of public exhibition of the draft operational plan before it is adopted. During that period, submissions from the community are received and considered by Council.

Council advisory committees provide a structure for interested residents and subject matter experts to play an active role in contributing to council policy and direction. Advisory committees provide an important link for the council with the community and are supported via other community consultative methods.

Council has established four advisory committees, being:

- Business, Innovation and Tourism,
- Reserves and Conservation,
- Sustainability, and
- Youth.

3.2 Community Values

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

Community values indicate:

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

Table 3.2.1: Community Values

Community Values	Source
The Norfolk community sees value in the renovation of infrastructure and the provision of quality services.	Norfolk Island Community Strategic Plan: 2016-2026
The "Country Lanes Aspect" is a key criterion in deciding how to address the standards and methods that would be applied to treat problems with road infrastructure conditions and risk areas.	Worley Parsons 2015 Norfolk Island Roads Audit and Strategy Report undertaken on behalf of the Department of Infrastructure and Regional Development
Safer roads through hazard reduction	Worley Parsons 2015

Hazards and the associated risks identified during the community consultation process for the 2015 Worley Parsons report[5] are listed in Table 3.2.2 Identified Hazards and Risks.

Table 3.2.2: Identified Hazards and Risks

Hazard	Risks
Cows on road and adjacent in road reserve	Difficult to see at night - not a huge risk in daylight hours. Report of a cow landing on a car, after coming off a cutting adjacent to the road.
Potholes	Vehicles can encounter large potholes in the wheel path, causing drivers to swerve to miss the hazards, with the potential risk of head-on collisions. Filled potholes using current methods create a very bumpy road; however, this can serve to reduce the risk ("self-enforcing") of drivers going too fast for general road alignment and conditions.
Overhanging tree branches. Tree branches on roads not cleaned off.	Potential damage to vehicles, reduced sight distances. Drivers may swerve to avoid branches, thus risking a crash.
Steep high drop offs, adjacent to roads	Potential for vehicles to go over embankments or cliffs – large consequences.
Lack of shoulders and table drains, adjacent to	Narrow roads with minimal shoulders make it difficult to pull off in safety. Roads without table drains have inadequate surface drainage and consequently a reduced

[5] Worley Parsons report, Norfolk Island Roads Audit and Strategy Report,2015.

Hazard	Risks
bitumen sealed roads. Embankments are often present.	life. Where the verge is above the pavement level the road acts as a drain risking the driver swerving to avoid water on the road.
Limited sight distances, at intersections	Potential collisions.
Limited sight distances, on horizontal curves	Potential for collisions with oncoming vehicles or objects on the road (e.g., cows).
Unseen footpath hazards (unconstructed footpaths)	Potential for pedestrian falls; and vehicles running into pedestrians, because pedestrians choose to walk on the road wherever footpaths are not constructed or are in poor condition.
Difficult to see road edge	Potential for vehicles to leave the road and collide with street furniture or worse.
Bridges and other structures with low structural capacity	Potential collapse – could be catastrophic
Slippery roads, when wet	Drivers are at risk of being unable to negotiate slippery inclines on unsealed roads. Instances of vehicles being abandoned until conditions improve.
Bikes and loose stones on roads	Potential accidents due to loss of traction
Utility poles close to the road edge	Potential impacts between vehicles and poles.
Steep grassed batters adjacent to roads – inadequate footpaths	Dangerous to walk on. If pedestrians choose not to use these cuttings, they invariably walk on the road.
Road Safety issues around the school (in general)	Interaction between cars and students in drop-off zones outside schools is always a risk unless all people are vigilant, educated and the areas are well signed and supervised.
Non frangible hazards near road edge.	The collision between errant vehicle that hasn't had time to recover and non-frangible objects (e.g. trees, power poles, sign posts, headwalls).

3.3 Levels of Service

Levels of service are the defined qualities of assets against which performance can be measured. A condition ranking is a technical measure of an assets ability to provide the desired service to the community. By specifying a condition ranking level as a performance indicator, resources can be allocated to best achieve the desired community outcomes and demonstrate effective performance.

Table 3.3: Technical Levels of Service

Performance Measure	Level of Service Objective	Performance Measure	KPI	Average condition*
Condition	Serviceable condition of assets	Average condition of airport road assets	Equal or less than condition rating 2	1.4
		Average condition of road assets	Equal or less than condition rating 2	3.4
		Average condition of bridge assets	Equal or less than condition rating 2	2.0
		Average condition of cattle stops assets	Equal or less than condition rating 3	1.8

Performance Measure	Level of Service Objective	Performance Measure	KPI	Average condition*
		Average condition of footpath assets	Equal or less than condition rating 3	1.1
		Average condition of roundabout assets	Equal or less than condition rating 3	1.1
		Average condition of stormwater assets	Equal or less than condition rating 3	3.2

* Based on the April 2023 Road Network Assessment Audit Report prepared by Milanovic Neale Consulting Engineers.

See section 5.3 below for information on asset conditions and the ranking system used by the Council.

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

3.4 Legislative Requirements

There are many legislative requirements relating to the management of assets. The key legislative requirements that impact the delivery of road and drainage services are outlined in Table 3.4.

Table 3.4: Legislative Requirements

Legislation	Requirement
Local Government Act 1993 (NSW) (NI)	Sets out the role, purpose, responsibilities, and powers of the Norfolk Island Regional Council including the preparation of a long-term financial plan supported by asset management plans for sustainable service delivery.
Roads Act 2002 (NI)	Provides for the opening and closing of public roads and for related matters.
Land Titles Act 1996 (NI)	Provides for the registration of roads.
Employment Act 1988 (NI)	Part 4, Safe Working Practices, sets out employer and employee obligations to prevent a person's death, injury, or illness from being caused by a workplace, by a relevant workplace area, by work activities, or by machinery or substances for use at a relevant place.
Environment Act 1990 (NI)	To prevent, so far as is practicable, the degradation and destruction of the natural environment and landscape beauty of Norfolk Island.
Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)	To protect and manage unique plants, animals, habitats and places. This includes heritage sites and the Norfolk Marine Park.
Australian Accounting Standards (AAS)	The Local Government Act 1993 (NSW) (NI) requires Council to comply with AAS. Standard AASB 116, Property Plant and Equipment stipulates requirements on the recognition, valuation, depreciation and disposal of assets.

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, community preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc.

Norfolk Island is one of Australia's most isolated communities. It is an external Australian territory in the Pacific Ocean about 1600 km northeast of Sydney. The island has notable historic sites having been settled six weeks after Australia's initial settlement and is of significant biological importance with many native species being unique to the island.

The projection and impact on services from demand drivers on the service delivery of the road and drainage network is documented in Table 4.1

Table 4.1: Demand Drivers and Impact on Services

Demand Drivers	Projection	Impact on Services
Population	Norfolk Island has a population of 2,188 (ABS 2021), this compares with a population of 1,748 (ABS 2016) and 1,796 in 2011 (Norfolk Island Government Census).	Minimal
Development	A port facility with roll-on-roll-off capability for shipping containers will increase the weight loads on roads which may reduce the useful lives of existing surface and pavement assets.	Medium
Technological	While significant innovation is expected to occur on the island during the period, it is not expected to have any material impact on the service provision of the road and drainage network.	Minimal
Legislative change	Replacing current Norfolk legislation with Australian mainland legislation may impact the service provision of the network.	Unknown
Climate change	This may have an effect in the future, particularly if climate extremes such as increased rainfall impact the capacity of drainage and pavement failure.	High
Community expectations	Safer roads through hazard reduction	Medium

4.2 Demand Impact and Demand Management Plan

The impact of demand drivers that may affect future service delivery and use of assets 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.

Demand management plans will be developed in future revisions of this AM Plan.

5.0 LIFECYCLE MANAGEMENT PLAN

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

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this AM Plan are shown in Table 5.1.1.

The airport runways (Airport Roads) are the most significant assets within the roads and drainage asset class making up 69% of the gross carrying amount. Roads, sealed and unsealed, constitute 27%, with stormwater assets being 2%. Collectively, the categories of bridges, cattle stops, footpaths and traffic islands make up the final 2% of gross replacement cost for this asset class.

Most roads on the island are controlled by the Council. However, some roads are within Commonwealth managed areas (KAHVA and National Parks). In addition, there are private roads and access driveways on the island. Only Council controlled road and drainage assets are included in this asset management plan.

Table 5.1.1: Assets covered by this Plan

Asset Category	Dimension	Estimated Replacement Value*
Airport Roads	2 asphalt-paved runways at the Norfolk Island Airport. The primary runway (Runway 11/29) has a total pavement length of 1,890m and is 45m wide. The secondary runway (Runway 04/22) is 1,435m long and 30m wide.	$109,350,790
Roads	The total road length is 80.5km made up of 73km of sealed roads and 7.5km of unsealed roads comprising 104 roads split into 130 segments.	$42,126,503
Bridges	Council controls only one bridge, the timber-structured bridge on Prince Phillip Drive.	$136,728
Cattle stops	There are five Council cattle stops designed to prevent cattle from entering the main town and airport area.	$161,325
Footpaths	Located in the main town and airport area and along Queen Elizabeth Avenue up to the school.	$1,821,807
Roundabouts	There are 3 roundabouts, 2 are listed as Grassy/Taylors Road and 1 as the Middlegate Roundabout	$420,664
Stormwater	Consisting of 168 minor culvert assets, 7 major culverts and 3,936 metres of kerb and channel.	$5,111,427
Traffic Islands	1 traffic island on Taylors Road is recorded in the asset register.	$125,833
TOTAL		**$159,282,079**

*All figure values are shown in current-day dollars (December 2022). The gross carrying amount recorded in the asset register has been indexed using the Road and bridge construction Australia Producer Price Index published by the Australian Bureau of Statistics.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there are insufficient resources to assess and address all deficiencies.

The Milanovic Neale Consulting Engineers road audit report delivered in April 2023 made the following observations regarding the road network.

It was observed that road conditions vary greatly across the island. Some roads have good surfaces and are easy to drive. Other roads have noticeable surface deterioration and while noticeable to the road user, can still be adequately traversed. Some roads have more significant surface deterioration which does adversely affect road user experience. A few roads present significant deterioration and are near unusable, particularly in wet weather. Indeed, some roads can be of various conditions along the length of the road.

Road formation varies, with some roads presenting with wide flat verges. Others with limited or steep verges and others with no (or vertical) verges and the road pavement being the low point and acting as a drainage channel.

Some roads present with limited sightlines owing to tight curve radius, vertical verges, obstruction or a combination of these restrictions.

Most road foundations appear well built, albeit now quite aged. Structural failure of subgrades appears relatively infrequent. However, surface deterioration is common with failures in road surfaces appearing to be mainly from the breakdown of the bitumen seal or washout issues from inadequate drainage.

Some roads have been resurfaced in recent years. The extent of work is clearly visible where the road transitions from old and poor condition to previously maintained to recently maintained.

There is continual patching of potholes by the Council's work crews on many roads to provide short-term fixes to immediate issues. This has created quite a unique road surface on many roads with an expressed pattern of expedient patching. Indeed, on some roads, they appear to be more patched than the original surface.

Limited formalised drainage in some areas has led to significant scour in unsealed roads or adjacent to sealed roads (Marsh's Road) and some roads present as private access to one or more dwellings.

5.1.3 Asset condition

Condition is measured using a 1 – 5 grading system[6] as detailed in Table 5.1.3. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system may be used at a more specific level, however, for reporting in the AM plan results are translated to a 1 – 5 grading scale for ease of communication.

Table 5.1.3: Condition Grading System

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

The condition profile of Council's assets is shown in Figure 1.

[6] IPWEA, 2020, IIMM, Sec 2.5.4

Figure 1: Asset Condition Profile

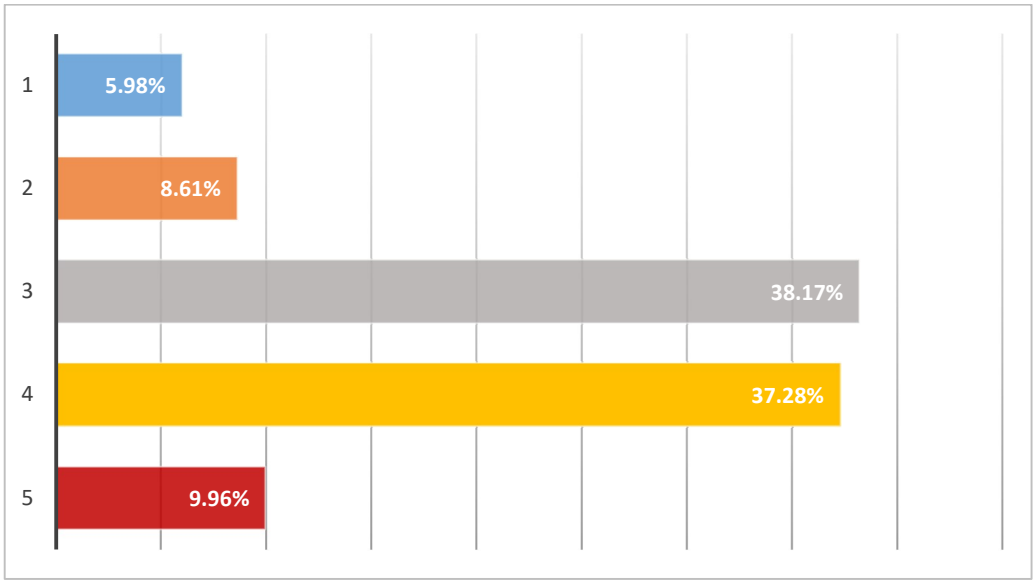
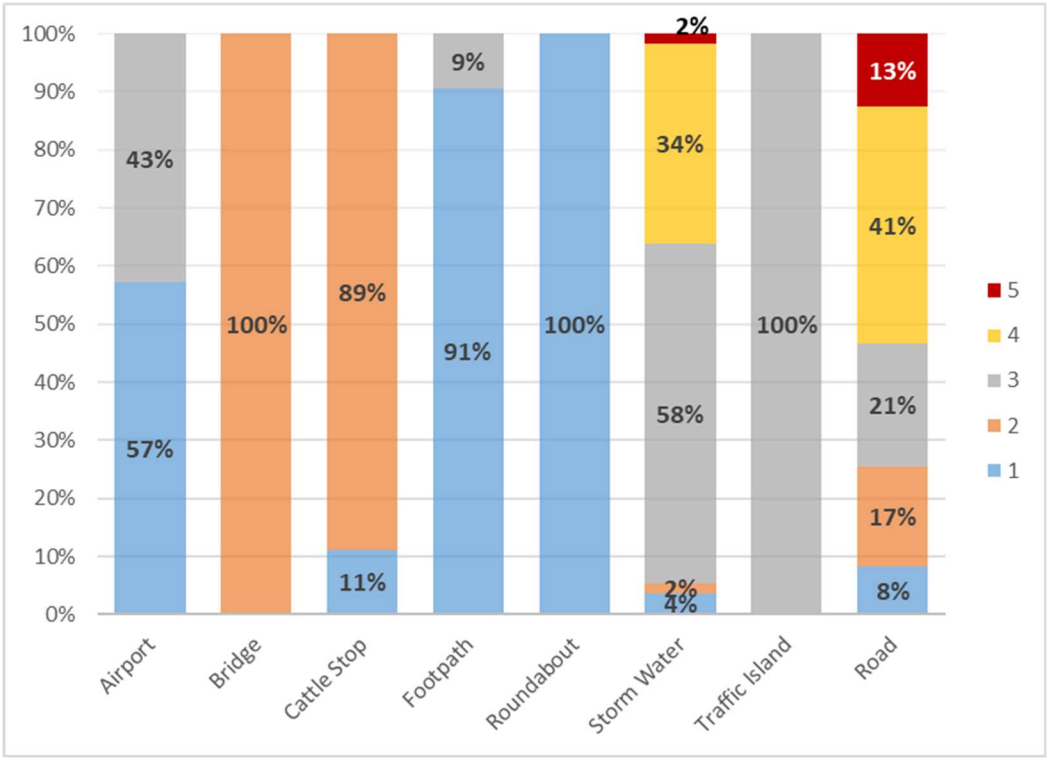


Figure 2: Asset Category Condition Profile



Asset condition gradings for existing assets are assessed at the time of a comprehensive revaluation or from technical reports. Renewal and new assets are given a condition grading of 1 at the date of commissioning. The most recent comprehensive revaluation of roads and drainage assets was for the financial year ending 30 June 2020.

Road, bridge, stormwater major culverts and some minor culverts have condition gradings from the April 2023 Road Network Assessment Audit Report prepared by Milanovic Neale Consulting Engineers. The audit found that

41% of the Council's Road assets have significant defects and 13% are physically unsound. The finding for Stormwater assets is that 34% have significant defects and 2% are physically unsound.

The airport runways had major works on the surface and sections of the pavement during 2020 and 2021. The surface and pavement assets make up the condition 1 grading for the Airport category shown in Figure 2, above. Condition grading 3 for the Airport category is for the formation assets. This rating is from the 30 June 2020 comprehensive revaluation. It is an estimate by the valuer of the formation condition based on available information at the time.

5.2 Maintenance Work

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 culvert clearing and asphalt patching. Maintenance budgets exclude depreciation expense and an allocation for shared operating costs.

The trend in maintenance budgets is shown in Table 5.2.

Table 5.2: Maintenance Budget Trends

Year	Maintenance Budget (000)
2022	$725
2023	$367
2024 Forecast	$398

Maintenance work is mostly reactive. The assessment and priority of reactive maintenance work is undertaken by staff using experience and judgement.

Forecast maintenance costs

In general, forecast maintenance costs will vary in relation to the total value of the asset stock. If additional assets are acquired, future maintenance costs will increase. If assets are disposed of future maintenance costs are expected to decrease.

As there are no plans to materially expand the road and drainage network on Norfolk Island. There is the intention to progressively improve the network through the annual renewal programme. Therefore, it is forecast that the maintenance budget will remain at around $400k per annum in current-day dollars (April 2023) for the foreseeable future.

5.3 Renewal Plan

Renewal is 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 its original service potential is considered to be an acquisition resulting in additional future maintenance costs.

Assets requiring renewal are identified using 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.

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 in August 2019.[7]

[7] Asset Accounting Policy, Council policy number 3.07

Table 5.3: Useful Lives of Assets

Asset Category	Useful life
Airport runway	
– Formation	Indefinite
– Pavement	40 - 80 years
– Surface	20 years
Sealed road	
– Formation	Indefinite
– Pavement	40 - 80 years
– Surface	15 - 25 years
Unsealed road	
– Formation	Indefinite
– Pavement	40 - 80 years
Bridge	80 - 120 years
Carpark	
– Sealed surface	15 - 25 years
– Sealed pavement	40 - 80 years
– Unsealed pavement	7 - 10 years
Cattle stop	40 years
Footpath	
– Paved surface	20 - 50 years
– Unpaved surface	7 - 10 years
Roundabout and traffic island	40 - 80 years
Stormwater	30 - 120 years

5.3.1 Renewal strategy

The Council plans capital renewal projects to meet the level of service objectives and minimise infrastructure service risks by:

- Planning and scheduling renewal projects to deliver the defined level of service most efficiently,
- Undertaking project scoping for all capital renewal 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 option that could address the service deficiency,
- evaluate the options against evaluation criteria adopted by the Council, and
- 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,
- Review current and required skills base to determine if contractors will be required or the workforce requires training and development to meet required construction and renewal needs,
- Review management of capital renewal and replacement activities to ensure Council is obtaining the best value for resources used.

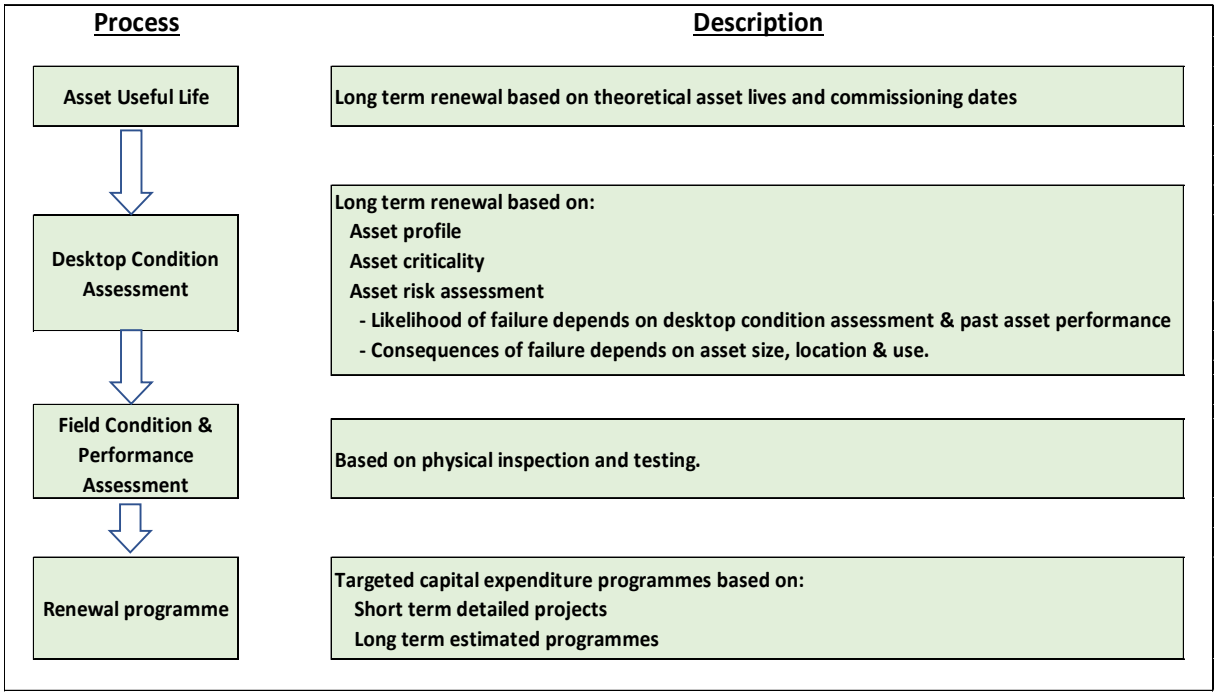
5.3.2 Renewal process

Assets requiring renewal are identified from estimates of remaining life obtained from the asset register. Identified assets are inspected to verify the accuracy of the remaining life estimate and to develop a preliminary renewal estimate. Verified proposals will be ranked by priority and available funds and scheduled in future works programmes.

Priority rankings vary between asset classes and are contingent upon the asset's criticality, consequences of failure and defined service levels.

The renewal process is summarised in the following diagram.

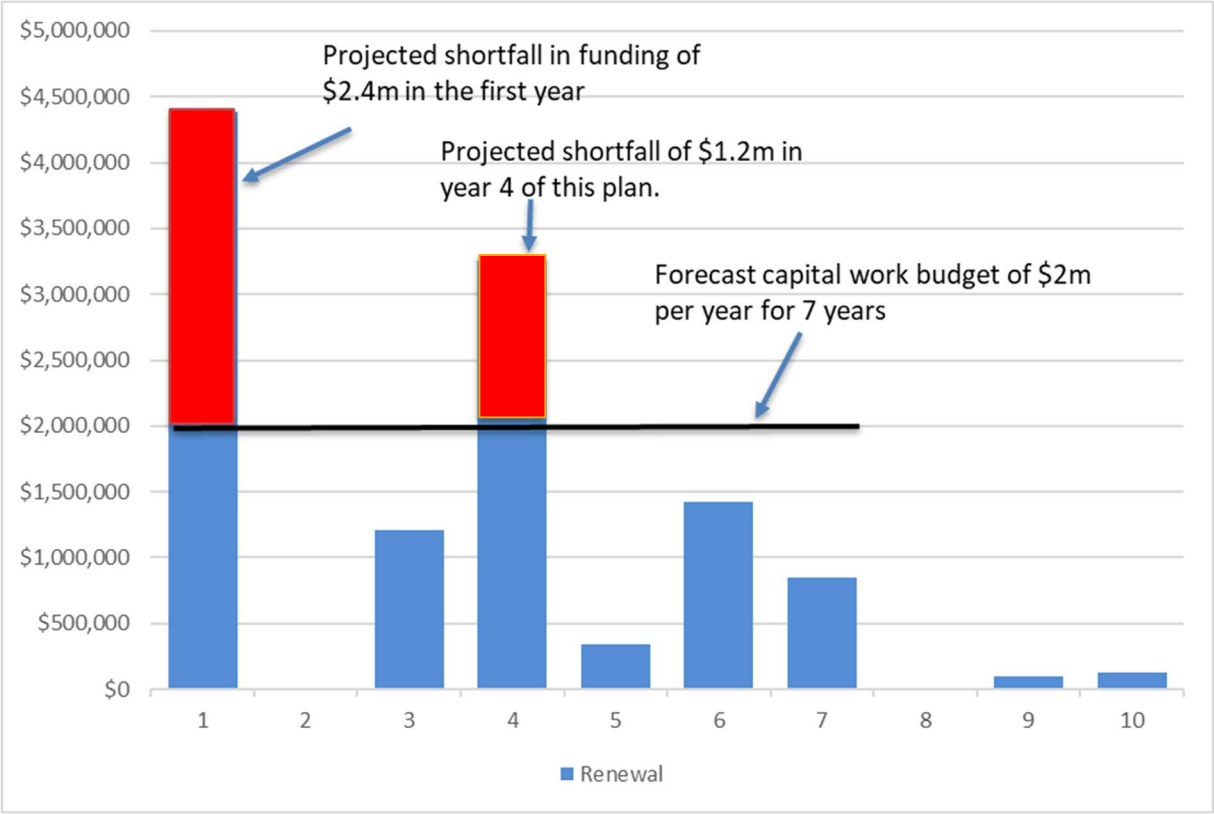
Figure 3: Renewal process



5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 4. A detailed summary of the forecast renewal costs is shown in Appendix A.

Figure 4: Forecast Renewal Costs and Planned Budget



All figure values are shown in current-day dollars (December 2022). The gross carrying amount recorded in the asset register has been indexed using the Road and bridge construction Australia Producer Price Index published by the Australian Bureau of Statistics.

Assets requiring renewal are identified from estimates of remaining life obtained from the asset register while the budget forecast is based on an estimate of what can be achieved with the available resources. The total budget allocation of $14m will exceed the projected renewal requirement of $12m over the ten year period. However, there are timing mismatches in years 1 and 4, highlighted in red in Figure 4 above. The additional $2m in funding is a contingency for any unforeseen events and cost overruns.

By using the renewal process identified in section 5.3.2 above those assets which are not critical can be deferred. A risk analysis will be included as part of this process to identify those assets with the lowest risk being scheduled for future periods. A consequence of renewal deferral is increased maintenance costs that will need to be assessed and included in future versions of this AM Plan.

5.5 Acquisition Plan

Acquisitions 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, and social or environmental needs. Assets may also be donated or come under the control of the Council.

5.5.1 Selection criteria

Proposed acquisition of new assets, and upgrade of existing assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrades and new works should be reviewed to verify that they are essential to the provision of services to the community. The 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.

5.5.2 Future asset acquisitions

When a council commits to new assets, it must be prepared to fund future operations, maintenance and renewal costs. Council must also account for future depreciation when reviewing long-term sustainability.

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

At the time of preparing this plan, the engineering consulting firm, Milanovic Neale Consulting Engineers is undertaking road classification mapping of the island's road network and developing road specifications and standard drawings. These engineering specifications and drawings together with the road classification mapping will be used to guide the council on future upgrades and new works. Approved future works will be included in a revised version of this plan.

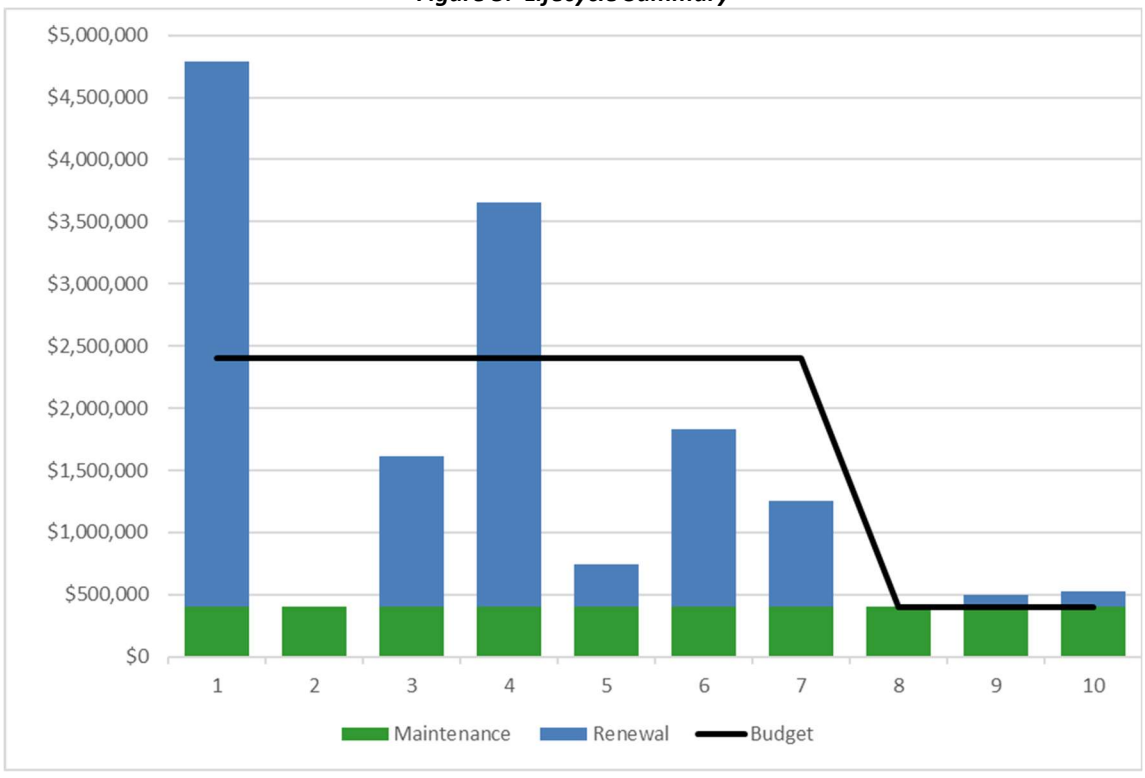
Planning is underway to extend the aircraft parking area at the airport. As the current apron is at capacity already, there is a need for additional aircraft parking to address situations where aircraft are unable to depart, are delayed or additional General Aviation or itinerant aircraft arrivals occur.[8] This project is yet to be finalised and construction is not expected to commence during the term of this plan.

5.6 Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.7.1. These projections include forecast costs for maintenance and renewal. 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 a balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5: Lifecycle Summary



[8] Section 5.2 of the Norfolk Island Airport Master Plan Draft Final Report, July 2020.

All figure values are shown in current-day dollars(December 2022). The gross carrying amount recorded in the asset register has been indexed using the Road and bridge construction Australia Producer Price Index published by the Australian Bureau of Statistics.

Assets requiring renewal are identified from estimates of remaining life obtained from the asset register while the budget forecast is based on an estimate of what can be achieved with the available resources. The total budget allocation of $14m will exceed the projected renewal requirement of $12m over the ten year period. However, there are timing mismatches in years 1 and 4. The additional $2m represents a contingency to cover unanticipated events and unavoidable cost overruns.

By using the renewal process identified in section 5.3.2 above those assets which are not critical can be deferred. A risk analysis will be included as part of this process so to identify those assets with the lowest risk being deferred. A consequence of renewal deferral is increased maintenance costs that will need to be assessed and included in this asset management plan.

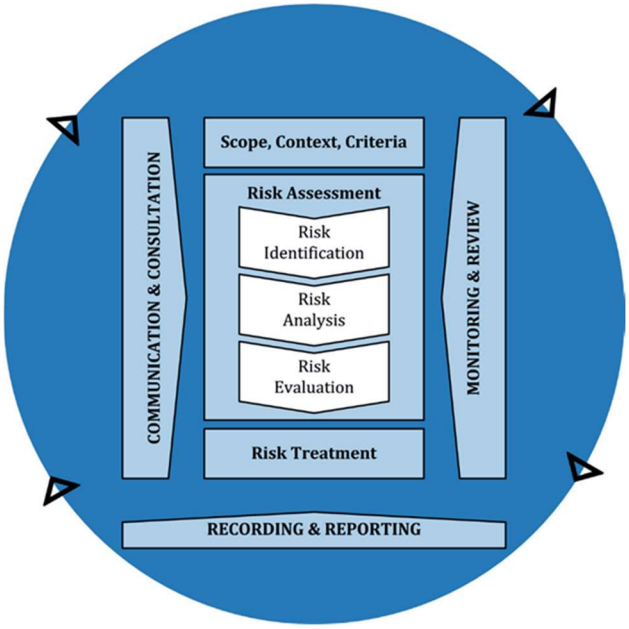
6.0 RISK MANAGEMENT PLANNING

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.

The risk management process used is shown in Figure 6 below.

Figure 6: Risk Management Process – Abridged

Source: ISO 31000:2018, Figure 1, p9



It is an analysis and problem-solving technique designed to provide a logical process for the management of unacceptable risks.

6.1 Risk Assessment

A risk assessment documents the significance of risks through the allocation of a risk rating to each identified risk, the evaluation of those risks, and the development of a risk treatment plan for each risk.

Council manages risks at the strategic level throughout the organisation and at the operational level.

The NIRC Strategic Risk Register (2023) contains information on risk assessment, risk rating and required actions for strategic risk management.

An assessment of strategic risks[9] has identified 2 significant strategic risks relating to effective asset management which are summarised in Table 6.1.1.

Table 6.1.1 Significant Strategic Risks

Risk Description	Detail	Risk Rating*
Sub-optimal management of infrastructure & assets	Asset management and infrastructure strategies do not meet the needs of the Council or the community. Assets and infrastructure are not appropriately maintained and replaced in accordance with established levels of service.	High 16

[9] Refer NIRC Strategic Risk Register, 2023.

Risk Description	Detail	Risk Rating*
Financial sustainability is compromised	Council is unable to maintain its financial and infrastructure capital over the medium to long term due to poor short-term financial decisions, and/or political and management financial literacy deficiencies.	Moderate 8

* See the NIRC Strategic Risk Register for an understanding of the risk ratings.

An assessment of operational risks associated with the service delivery of the assets covered by this AM Plan is summarised in Table 6.1.2.

Table 6.1.2 Identified Operational Risks

Detail	Risk Treatment
The crushers at the quarry cannot supply sufficient material to meet road maintenance and renewal work requirements.	Options are under consideration.
Material reserves in the existing quarry will be exhausted during the first half of this plan.	Outside of Council's control as providing additional material is the responsibility of the Commonwealth. A feasibility study is being conducted at the time of preparing this AM Plan.
Storing of bitumen emulsion in the intermediate bulk storage containers used for importing the emulsion limits the shelf life to only 3 months. The lead time to replace the emulsion can be greater than 3 months.	Acquisition of an emulsion storage tank will increase shelf life to 12 months
There are no ongoing resources to ensure the collection, recording and maintenance of asset data.	Establish a permanent asset management position with sufficient authority to establish and maintain asset management practices across the organisation.

7.0 FINANCIAL SUMMARY

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

7.1 Financial Sustainability and Projections

7.1.1 Sustainability of service delivery

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

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

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio of 120 % includes a funding contingency of $230k per annum to cover unanticipated events and cost overruns.

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

The forecast renewal work along with the estimated cost of each renewal project is provided in Appendix A.

Medium-term – 10 year financial planning period

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

The forecast maintenance and renewal costs over the 10 year planning period is $1.57m on average per year.

The proposed (budget) maintenance and renewal funding is $1.8m on average per year giving an annual average excess of $231k. This represents a 15% contingency to cover unanticipated events and cost overruns.

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

Table 7.1.2 shows the forecast costs (outlays) required for consideration in the 10 year long-term financial plan.

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

Forecast costs are shown in current-day dollars (December 2022). The gross carrying amount recorded in the asset register has been indexed using the Road and bridge construction Australia Producer Price Index published by the Australian Bureau of Statistics.

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

Plan Period	Year	Maintenance $	Renewal $	Total Outlays $
1	2024	400,000	4,386,479	4,786,479
2	2025	400,000	-	400,000
3	2026	400,000	1,213,537	1,613,537
4	2027	400,000	3,253,667	3,653,667
5	2028	400,000	339,023	739,023
6	2029	400,000	1,425,915	1,825,915
7	2030	400,000	850,037	1,250,037

Plan Period	Year	Maintenance $	Renewal $	Total Outlays $
8	2031	400,000	-	400,000
9	2032	400,000	95,720	495,720
10	2033	400,000	126,578	526,578

7.2 Funding Strategy

The proposed funding for assets is outlined in the Council's Long-Term Financial Plan and annual budget.

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

7.3 Asset Valuations

The best available estimate of the value of assets included in this AM Plan is shown below. The assets are valued at the gross carrying amount recorded in the asset register. The estimated renewal cost is the gross carrying amount indexed using the Road and bridge construction Australia Producer Price Index published by the Australian Bureau of Statistics.:

Estimated Renewal Cost (December 2022)[10] $159,282,000

Gross carrying amount (June 2022)[11] $133,425,679

Depreciated Cost[12] $99,853,034

Annual Depreciation $3,542,963

7.4 Key assumptions made in financial forecasts

In compiling this AM Plan, it was necessary to make some assumptions. This section details the key financial 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 financial assumptions made in this AM Plan are:

- Data recorded in the asset register is a fair reflection of the condition and remaining useful life of the assets in this asset class.
- The indexed gross carrying amount is a fair estimate of the asset class's current replacement cost.
- Maintenance costs measured in current dollars (2022 budget) will remain constant over the 10-year plan.

[10] The gross carrying amount recorded in the asset register has been indexed using the Road and bridge construction Australia Producer Price Index published by the Australian Bureau of Statistics.

[11] The book value before deducting accumulated depreciation as recorded in the asset register.

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

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Asset management and financial data source

This AM Plan utilises Asset management and financial data sourced from council's asset register being the Assetfinda product supplied and maintained by Univerus software solutions.

The data being captured relies on the type of asset data being entered into the AssetFinda system. For example, larger complex assets, such as roads, that have significant parts with differing lifecycles are componentised.

The asset hierarchy, componentisation and estimated useful lives are set down in Council Policy Statement No. 3.07 Asset Accounting Policy and are summarised in Table 5.3 of this AM Plan.

Council utilises modules in the Civica enterprise management system to process and store financial information. The general ledger records and reports high level financial information across the Council while the work order system is designed to record, track and report the detail of financial transactions. There are only consolidated work orders being used to record transactions for the assets in this AM Plan. Therefore, there is no distinction between operating and maintenance costs; capital works are commingled into a single work order making it impossible to identify and cost individual works for updating the asset register without the assistance of the engineer and technical staff.

The Civica fleet management module is utilised by Council. It has the capacity to allocate time in use charges to work orders. This function is not being utilised so fleet usage is not being costed to maintenance or capital works.

8.2 Improvement Plan

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

Table 8.2: Improvement Plan

Task #	Task	Timeline
1	Establish a permanent asset management position with sufficient authority to establish and maintain asset management practices across the organisation.	By the end of June 2023
2	Develop and implement a schedule for asset revaluations, both desktop and comprehensive revaluations. The period of the schedule should align to the 10-year period of this plan.	By the end of October 2023
3	Review the estimated useful lives of assets. Amend the useful life brackets in the Asset Accounting Policy with all amendments	By the end of December 2023
4	Develop criticality criteria and a 5-level single score criticality rating and rate the assets covered by this AM Plan to assist with planning and the scheduling of works.	By the end of March 2024
5	Establish an inspection programme for assets covered by this AM Plan and undertake planned maintenance to reduce the extent of reactive maintenance.	By the end of December 2024

8.3 Monitoring and Review Procedures

This AM Plan will be reviewed in time for 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, acquisition and asset disposal costs and planned budgets. These forecast costs and proposed budget will be incorporated into the Long-Term Financial Plan once completed.

9.0 REFERENCES

- IPWEA, 2020, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org
- IPWEA, 2015, 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org
- ISO, 2014, ISO 55000:2014, Asset management overview, principles and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Norfolk Island Regional Council, Policy Statement No. 4.04: Asset Management Policy, V2, Draft
- Norfolk Island Community Strategic Plan: 2016-2026
- Norfolk Island Regional Council, Draft Operational Plan 2023-2024
- Norfolk Island Regional Council, Operational Plan 2022-2023
- Norfolk Island Regional Council, Policy Statement No. 3.07: Asset Accounting Policy
- Norfolk Island Regional Council, Strategic Risk Register, 2023
- Milanovic Neale Consulting Engineers, Norfolk Island Road Network Assessment Audit Report, April 2023
- Worley Parsons, Norfolk Island Roads Audit and Strategy Report,2015
- Leading Edge Aviation Planning Professionals Pty Ltd., Norfolk Island Airport Master Plan Draft Final Report, July 2020
- Australian Bureau of Statistics, Time Series 6427.0, Producer Price Indexes, Australia

10.0 APPENDICES

Appendix A 10 year Renewal Forecast

Asset ID	Category	Asset Name	Type	Component	Remaining Life (Years)	Forecast Renewal Year	Estimated Renewal Cost	Useful Life (Years)
10153.0	Road	Headstone Road	Sealed	Top Surface	0	2024	352,328.00	15
10218.0	Road	New Farm Road	Sealed	Top Surface	0	2024	305,741.00	15
10224.0	Road	Pitcairn Place	Sealed	Top Surface	0	2024	8,633.00	20
10187.0	Road	Martins Road	Sealed	Top Surface	0	2024	120,858.00	20
10190.0	Road	Martins Road	Sealed	Top Surface	0	2024	32,362.00	20
10028.0	Road	Anson Bay Road	Sealed	Top Surface	0	2024	356,519.00	15
10034.0	Road	Beefsteak Road	Sealed	Top Surface	0	2024	19,424.00	20
10075.0	Road	Captain Quintal Drive	Sealed	Top Surface	0	2024	37,768.00	20
10119.0	Road	Duncombe Bay Road	Sealed	Top Surface	0	2024	30,214.00	20
10124.0	Road	Edwin Ryland Evans Road	Unsealed	Pavement	0	2024	10,763.00	15
10129.0	Road	Fay Bataille Drive	Unsealed	Pavement	0	2024	5,381.00	15
10132.0	Road	Ferny Lane	Sealed	Top Surface	0	2024	395,665.00	15
10078.0	Road	Cascade Road	Sealed	Top Surface	0	2024	604,288.00	15
10091.0	Road	Collins Head Road	Sealed	Top Surface	0	2024	86,327.00	15
10025.0	Road	Anson Bay Road	Sealed	Top Surface	0	2024	183,444.00	15
10039.0	Road	Berrys Lane	Unsealed	Pavement	0	2024	13,993.00	15
10046.0	Road	Buffetts Road	Unsealed	Pavement	0	2024	26,913.00	15
10178.0	Road	Little Green Lane	Unsealed	Pavement	0	2024	10,763.00	15
10158.0	Road	Headstone Road	Sealed	Top Surface	0	2024	173,373.00	15
10258.0	Road	Rooty Hill Road	Sealed	Top Surface	0	2024	215,817.00	15
10274.0	Road	Stockyard Road	Sealed	Top Surface	0	2024	157,546.00	15
10289.0	Road	Tevarua Lane	Unsealed	Pavement	0	2024	5,381.00	15
10303.0	Road	William McCoy Road	Sealed	Pavement	0	2024	10,763.00	15
10306.0	Road	Yorlor Lane	Sealed	Top Surface	0	2024	12,949.00	20

Asset ID	Category	Asset Name	Type	Component	Remaining Life (Years)	Forecast Renewal Year	Estimated Renewal Cost	Useful Life (Years)
10301.0	Road	Webb Adams Road	Sealed	Top Surface	0	2024	17,985.00	20
10295.0	Road	Two Chimneys Road	Sealed	Top Surface	0	2024	140,281.00	20
10298.0	Road	Uncle Joes Road	Sealed	Top Surface	0	2024	22,482.00	20
10278.0	Road	Stockyard Road	Sealed	Top Surface	0	2024	187,041.00	20
10266.0	Road	Shortridge Road	Sealed	Top Surface	0	2024	47,480.00	20
10244.0	Road	Red Road	Sealed	Top Surface	0	2024	86,327.00	20
10206.0	Road	Mitchells Lane	Sealed	Top Surface	0	2024	25,179.00	20
10169.0	Road	John Adams Road	Sealed	Top Surface	0	2024	35,970.00	20
10141.0	Road	George Hunn Nobbs Road	Sealed	Top Surface	0	2024	10,791.00	20
10144.0	Road	Goldies Lane	Sealed	Top Surface	0	2024	14,028.00	20
10181.0	Road	Longridge Road	Sealed	Top Surface	0	2024	86,327.00	20
10176.0	Road	Little Cutters Corn Road	Sealed	Top Surface	0	2024	10,791.00	20
10198.0	Road	Mill Road	Sealed	Top Surface	0	2024	86,327.00	20
10049.0	Road	Bullocks Hut Road	Sealed	Top Surface	0	2024	115,102.00	20
10052.0	Road	Bullocks Hut Road	Sealed	Top Surface	0	2024	105,031.00	20
10063.0	Road	Calebs Lane	Sealed	Top Surface	0	2024	40,466.00	20
10069.0	Road	Captain Cook Road	Sealed	Top Surface	0	2024	8,633.00	20
10095.0	Road	Collins Head Road	Sealed	Top Surface	0	2024	71,939.00	20
10103.0	Road	Cutters Corn Road	Sealed	Top Surface	0	2024	64,724.00	20
10084.0	Road	Christians Lane	Sealed	Top Surface	0	2024	32,362.00	20
10090.0	Road	Collins Head Road	Sealed	Pavement	2	2026	109,615.00	40
10110.0	Road	Douglas Drive	Sealed	Pavement	2	2026	441,592.00	40
10014.0	Bridge	Prince Phillip Drive - Road ID 43 Timber Bridge Superstructure	Timber Bridge	Superstructure	2	2026	66,885.00	40
10217.0	Road	New Farm Road	Sealed	Pavement	2	2026	199,656.00	40
10239.0	Road	Queen Elizabeth Avenue	Sealed	Pavement	2	2026	254,855.00	40

Asset ID	Category	Asset Name	Type	Component	Remaining Life (Years)	Forecast Renewal Year	Estimated Renewal Cost	Useful Life (Years)
10257.0	Road	Rooty Hill Road	Sealed	Pavement	2	2026	140,934.00	40
10261.0	Road	Selwyn Pine Road	Sealed	Top Surface	3	2027	143,878.00	15
10263.0	Road	Selwyn Pine Road	Unsealed	Pavement	3	2027	114,835.00	15
10246.0	Road	Red Road	Unsealed	Pavement	3	2027	32,297.00	15
10233.0	Road	Prince Phillip Drive	Unsealed	Pavement	3	2027	75,358.00	15
10226.0	Road	Potts Farm Road	Unsealed	Pavement	3	2027	37,678.00	15
10215.0	Road	New Cascade Road	Sealed	Top Surface	3	2027	377,680.00	15
10203.0	Road	Mission Road	Sealed	Top Surface	3	2027	341,710.00	15
10195.0	Road	Middlegate Road	Sealed	Top Surface	3	2027	496,214.00	15
10192.0	Road	Matts Ground Road	Unsealed	Pavement	3	2027	10,763.00	15
10171.0	Road	John Quintal Road	Unsealed	Pavement	3	2027	71,772.00	15
10173.0	Road	Jonathan Adams Road	Unsealed	Pavement	3	2027	10,763.00	15
10184.0	Road	Marshes Road	Sealed	Top Surface	3	2027	178,049.00	15
10149.0	Road	Greg Quintal Road	Unsealed	Pavement	3	2027	35,886.00	15
10152.0	Road	Harpers Road	Sealed	Top Surface	3	2027	197,832.00	15
10055.0	Road	Bumbora Road : End Bitumen - End Unsealed Road	Unsealed	Pavement	3	2027	43,063.00	15
10041.0	Road	Bishop Patteson Road	Unsealed	Pavement	3	2027	44,858.00	15
10105.0	Road	Davies Road	Unsealed	Pavement	3	2027	10,763.00	15
10107.0	Road	Dorcas Lane	Unsealed	Pavement	3	2027	10,763.00	15
10116.0	Road	Driver Christian Road	Sealed	Top Surface	3	2027	170,855.00	15
10093.0	Road	Collins Head Road	Sealed	Top Surface	3	2027	237,399.00	15
10100.0	Road	Crystal Pool	Unsealed	Pavement	3	2027	53,826.00	15
10086.0	Road	Cobby Robinson Road	Sealed	Pavement	3	2027	43,061.00	15
10287.0	Road	Taylors Road	Sealed	Top Surface	3	2027	190,638.00	15
10285.0	Road	Taylors Road	Sealed	Top Surface	3	2027	323,726.00	15

Asset ID	Category	Asset Name	Type	Component	Remaining Life (Years)	Forecast Renewal Year	Estimated Renewal Cost	Useful Life (Years)
10291.0	Road	The Village Place	Sealed	Pavement	4	2028	28,709.00	50
10300.0	Road	Webb Adams Road	Sealed	Pavement	4	2028	9,135.00	50
10305.0	Road	Yorlor Lane	Sealed	Pavement	4	2028	6,264.00	50
10074.0	Road	Captain Quintal Drive	Sealed	Pavement	4	2028	18,269.00	50
10102.0	Road	Cutters Corn Road	Sealed	Pavement	4	2028	31,319.00	50
10118.0	Road	Duncombe Bay Road	Sealed	Pavement	4	2028	14,094.00	50
10048.0	Road	Bullocks Hut Road	Sealed	Pavement	4	2028	52,198.00	50
10051.0	Road	Bullocks Hut Road	Sealed	Pavement	4	2028	47,630.00	50
10068.0	Road	Captain Cook Road	Sealed	Pavement	4	2028	4,175.00	50
10062.0	Road	Calebs Lane	Sealed	Pavement	4	2028	19,574.00	50
10033.0	Road	Beefsteak Road	Sealed	Pavement	4	2028	9,395.00	50
10140.0	Road	George Hunn Nobbs Road	Sealed	Pavement	4	2028	5,220.00	50
10180.0	Road	Longridge Road	Sealed	Pavement	4	2028	39,148.00	50
10168.0	Road	John Adams Road	Sealed	Pavement	4	2028	16,312.00	50
10175.0	Road	Little Cutters Corn Road	Sealed	Pavement	4	2028	5,220.00	50
10189.0	Road	Martins Road	Sealed	Pavement	4	2028	16,442.00	50
10205.0	Road	Mitchells Lane	Sealed	Pavement	4	2028	11,744.00	50
10223.0	Road	Pitcairn Place	Sealed	Pavement	4	2028	4,175.00	50
10249.0	Road	Rocky Point Road A	Sealed	Top Surface	5	2029	140,281.00	20
10269.0	Road	Snells Lane	Sealed	Top Surface	5	2029	18,344.00	20
10209.0	Road	Mount Pitt Road	Sealed	Top Surface	5	2029	79,133.00	20
10212.0	Road	Mulberry Lane	Sealed	Top Surface	5	2029	28,776.00	20
10235.0	Road	Prince Phillip Drive	Sealed	Top Surface	5	2029	5,395.00	20
10237.0	Road	Prince Phillip Drive	Sealed	Top Surface	5	2029	122,296.00	20
10166.0	Road	J.E. Road	Sealed	Top Surface	5	2029	350,703.00	20
10163.0	Road	Hibiscus Drive	Sealed	Top Surface	5	2029	57,192.00	20
10022.0	Road	Allendale Drive	Sealed	Top Surface	5	2029	64,724.00	20

Asset ID	Category	Asset Name	Type	Component	Remaining Life (Years)	Forecast Renewal Year	Estimated Renewal Cost	Useful Life (Years)
10015.0	Bridge	Prince Phillip Drive - Road ID 43 Timber Bridge Guardrails	Timber Bridge	Guardrails	5	2029	4,302.00	20
10057.0	Road	Bumbora Road	Sealed	Top Surface	5	2029	172,654.00	20
10060.0	Road	Burglars Lane	Sealed	Top Surface	5	2029	10,791.00	20
10072.0	Road	Captain Quintal Drive	Sealed	Top Surface	5	2029	71,939.00	20
10037.0	Road	Ben Christian Drive	Sealed	Top Surface	5	2029	71,939.00	20
10135.0	Road	Fishermans Lane	Sealed	Top Surface	5	2029	76,255.00	20
10127.0	Road	Ephraim Christian Road	Sealed	Top Surface	5	2029	30,214.00	20
10122.0	Road	Edward Young Road	Sealed	Top Surface	5	2029	43,163.00	20
10281.0	Road	Taries Lane	Sealed	Top Surface	5	2029	34,531.00	20
11226.0	Road	Rocky Point Road : Rocky Point - End	Sealed	Top Surface	5	2029	43,283.00	20
10113.0	Road	Douglas Drive	Sealed	Top Surface	6	2030	47,480.00	15
10098.0	Road	Country Road	Sealed	Top Surface	6	2030	410,052.00	15
10160.0	Road	Hemus Road	Unsealed	Pavement	6	2030	43,061.00	15
10147.0	Road	Grassy Road	Sealed	Top Surface	6	2030	143,878.00	15
10276.0	Road	Stockyard Road	Sealed	Top Surface	6	2030	205,566.00	15
10001.0	Storm Water	Bounty St Major Culvert CHG 150 Insitu Stone Construction	Major Culvert	Insitu Stone Construction	8	2032	95,720.00	80
10011.0	Storm Water	New Cascade Road - Road ID 54 Major Culvert Buardrails	Major Culvert	Buardrails	9	2033	4,302.00	20
10066.0	Road	Captain Cook Road	Sealed	Top Surface	9	2033	64,724.00	20
10081.0	Road	Cats Lane	Sealed	Top Surface	9	2033	10,791.00	20
10138.0	Road	Fletcher Christian Road	Sealed	Top Surface	9	2033	35,970.00	20
10309.0	Road	Youngs Road	Sealed	Top Surface	9	2033	10,791.00	20

Appendix B Glossary

Asset

A resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity. Infrastructure assets are a sub-class of property, plant and equipment which are non-current assets with a life greater than 12 months and enable services to be provided.

Asset* (Council definition)

This means property, plant and equipment controlled by the Council that supports the provision of services to the community or produces revenue to contribute to the provision of services or is held for administration purposes and is expected to be used for more than 12 months. Infrastructure is included in this definition

Asset Category

Sub-group of assets within a class hierarchy for financial reporting and management purposes.

Asset Class

A group of assets having a similar nature or function in the operations of an entity, and which, for purposes of disclosure, is shown as a single item without supplementary disclosure.

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 Hierarchy

A framework for segmenting an asset base into appropriate classifications. The asset hierarchy can be based on asset function or asset type or a combination of the two.

Asset Management (AM)

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.

Asset Management Plan (AM Plan)

A plan developed for the management of each asset class that identifies asset service standards and long-term (at least 10 years) projects and cash flow estimates for maintenance, rehabilitation, replacement and improvement.

Asset Management Policy*

A Council policy that describes how Council intends to apply asset management across the organisation. It establishes the Asset Management Strategy; asset management plans and allocates responsibility to ensure effective asset management.

Asset Management Strategy*

The Council document that describes the strategy for asset management covering the development and implementation of plans and programmes for asset creation, operation, maintenance, rehabilitation/replacement, disposal and performance monitoring to ensure that the desired levels of service and other operational objectives are achieved.

Asset Register*

A record of asset information including inventory, historical, condition, construction, technical and financial details.

Asset Renewal Funding Ratio

The ratio of the net present value of asset renewal funding accommodated over a 10 year period in a long term financial plan relative to the net present value of projected capital renewal expenditures identified in an AM Plan for the same period.

Capital Expenditure (Renewal, Upgrade, Acquisition)

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, rehabilitation, 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.

Capitalisation Threshold

The value of expenditure on non-current assets above which the expenditure is recognised as capital expenditure and below which the expenditure is charged as an expense in the year of acquisition.

Carrying Amount

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

Commissioned

When the asset is in the location and condition necessary for it to be capable of operating in the manner intended by management. The date depreciation commences.

Community Strategic Plan*

Council document that states the community's vision and aspirations for a period of ten years.

Component

Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

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, including any costs necessary to place the asset into service. This includes one-off design and project management costs.

Critical Assets

Assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than noncritical assets.

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.

Depreciable Amount (DA)

The cost of an asset, or other amount substituted for its cost, less its residual value.

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.

Expenses

Decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or increases in liabilities that result in decreases in equity, other than those relating to distributions to equity participants.

Fair Value

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

Funding Gap

A funding gap exists whenever an entity has insufficient capacity to finance asset renewal and other expenditure necessary to be able to appropriately maintain the range and level of services its existing asset stock was originally designed and intended to deliver. The service capability of the existing asset stock should be determined assuming no additional operating revenue, productivity improvements, or net financial liabilities above levels currently planned or projected. A current financing gap means service levels have already or are currently falling. A projected financing gap if not addressed will result in a future diminution of existing service levels.

Gross Carrying Amount

The amount that a class of assets is recognised prior to deducting any accumulated depreciation and accumulated impairment losses.

Impairment Loss

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

Infrastructure Assets

Physical assets that contribute to meeting the needs of organisations or the 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. They are fixed in place and are often have no separate market value.

Level of Service

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

Life Cycle Cost *

1. Total LCC The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.

2. Average LCC: the life cycle cost (LCC) is the average cost to provide the service over the longest asset life cycle. It comprises average operations, maintenance expenditure and asset consumption expense, represented by depreciation expense projected over 10 years. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

Maintenance

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, e.g. road patching but excluding rehabilitation or renewal. It is the operating expenditure required to ensure that the asset reaches its expected useful life.

- **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.

• Reactive maintenance

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

• Specific maintenance

Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.

• Unplanned maintenance

Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

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

The notion of materiality guides the margin of error acceptable, the degree of precision required and the extent of the disclosure required when preparing general purpose financial reports. Information is material if its omission, misstatement or non-disclosure has the potential, individually or collectively, to influence the economic decisions of users taken on the basis of the financial report or affect the discharge of accountability by the management or governing body of the entity.

Net Present Value (NPV)

The value to the organisation of the cash flows associated with an asset, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash inflows after deducting the value of the discounted total cash outflows arising from e.g. the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

Operations

Regular activities to provide services such as public health, safety and amenity, e.g. street sweeping, grass mowing and street lighting.

Operating Expenditure

Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, e.g. power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in the operating expense category of financial reports.

Operating Expense

The gross outflow of economic benefits, being cash and non-cash items, during the period arising in the course of ordinary activities of an entity when those outflows result in decreases in equity, other than decreases relating to distributions to equity participants.

Operations, Maintenance and Renewal Financing Ratio

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

Operational Plan*

Council's annual action plan for achieving the community priorities outlined in the Community Strategic Plan. Includes the annual budget and revenue policy.

Rate of Annual Asset Consumption *

The ratio of annual asset consumption relative to the depreciable amount of the assets. It measures the amount of the consumable parts of assets that are consumed in a period (depreciation) expressed as a percentage of the depreciable amount.

Rate of Annual Asset Renewal *

The ratio of asset renewal and replacement expenditure relative to depreciable amount for a period. It measures whether assets are being replaced at the rate they are wearing out with capital renewal expenditure expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Recoverable Amount

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

Remaining Useful Life

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

Residual Value

The estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

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.

Road Pavement

The formed and sealed part of the road reserve used for traffic, generally measured from the back of kerb to back of kerb (or shoulder).

Road

Includes the entire gazetted road reserve area from property boundary to property boundary.

Service Potential

The total future service capacity of an asset. It is normally determined by reference to the operating capacity and useful life of an asset. A measure of service potential is used in the not-for-profit sector/public sector to value assets, particularly those not producing a cash flow.

Specific Maintenance

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, 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.

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.

Verge

The area from behind a kerb or road shoulder to a private property boundary.

Value in Use

The present value of future cash flows expected to be derived from an asset or cash generating unit. 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 net cash inflows, where the entity would, if deprived of the asset, replace its remaining future economic benefits.

Source: IPWEA, 2020, Glossary
* Additional and modified glossary items shown