

Transport Asset Management Plan



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1. 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.

The Plan has been primarily formulated to document:

- The Transport assets Council owns
- Funding required to maintain the Transport network at current levels of service
- Future demand for renewal and improvements (upgrade/ new works) to the Transport network, and how to manage demand over the long term.

This plan covers Transport infrastructure assets including roads, bridges, culverts, causeways, airports and pathways.

1.2 Asset Description

Transport assets include a 2,946km road network; airport runway, taxiway and apron infrastructure at Coen, Cooktown, Laura and Lakeland; and a 14km pathway network.

These Transport assets are the most significant asset group accounting for approx. 60% of Cook Shire Council's Property Plant and Equipment value, with a total replacement value of \$251,676,000.

1.3 Levels of Service

Transport services continue to be a community priority Shire wide and regionally for Cape communities which are routinely isolated due to a flooded and impassable road network during the wet season.

This Plan provides an outline of Customer and Technical levels of service. These levels of service are focused on developing Transport network resiliency and capacity over time.

Current levels of service are used as the baseline in developing the operational, maintenance, renewal and upgrade/ new funding requirements outlined in this Plan.

1.4 Future Demand

The main demands for new Transport services are driven by:

- Population increasing
- Tourism numbers increasing

- The Shire network becoming more accessible with the sealing of the Peninsula Development Road (PDR)
- Global warming with increasing adverse weather events impacting Transport infrastructure
- Transport service user (customer) expectations.

These demands 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 planning in the Transport services area includes:

- Steadily improving the flood resiliency of the road network through external funding streams such as Disaster Recovery Funding Arrangements (DRFA) betterment projects
- Advocating the State provide renewal funding for reseals and pavement reconstruction on all indigenous community link roads
- Undertaking detailed planning and options analysis for the proposed Cooktown Airport runway and taxiway upgrade, and then applying for targeted grant funding for this project
- Continuing to manage and resource Disaster Recovery Funding Arrangements (DRFA) within Council to provide efficient and timely project management of flood damage open-ups and timely completion of restoration works.

1.5 Lifecycle Management Plan

What does it Cost?

The projected outlays necessary to provide the services covered by this Asset Management Plan (AM Plan) includes operations, maintenance, renewal, upgrade and new assets, over the 10-year planning period, of an average \$10,840,000 per year. This amount includes an average of \$6,500,000 per annum for upgrade and new Transport assets.

Council should note the following two major factors influencing Transport renewal funding requirements:

- (a) Cook Shire Council is responsible for managing 533km of link roads to indigenous communities including the Mein Batavia/ Moreton Bramwell/ Bamaga Roads, Aurukun Road, Portland Roads/ Iron Range Roads, Musgrave Strathgordon Road, and Bloomfield Road. Council is currently funded for new and upgrade works on these roads through ATSI-TIDS funding but remains responsible for renewal works such as reseals.

With a total of 155km of these link roads currently sealed (2019), and a corresponding sealed area of 1,158,184 m², the average annual resealing (renewal) cost is approx. \$695,000 per annum. In support of this requirement, the *Projected 10-year Renewal/ Replacement & Upgrade / New Capital Works Program* indicates an average requirement of \$1,028,054 per annum over the next 10 years.

As these community link roads are progressively sealed so will the annual average renewal cost, with an ultimate resealing renewal liability of approx. \$2,400,000 per annum when these roads are 100% sealed. The current and ultimate costs for renewal works on these roads is unsustainable for Cook Shire Council.

It is recommended that Cook Shire’s funding strategy include strongly advocating that the State take on full responsibility of **100% funding both renewal and new/ upgrade works on all community link roads.**

- (b) The renewal expenditure projection shown in this Plan is based on Disaster Recovery Funding Arrangements (DRFA) continuing to restore and rehabilitate Council’s transport network on an annual basis, and in effect (due to annual occurrence) fund **100% of renewal works in the unsealed pavement (gravel) road category.** The current Road Register details that Council manages 2,165 km of unsealed pavement (gravel) roads with an average asset consumption (depreciation expense) of \$5,954,000 per annum. This cost is the major component of the Transport portfolio’s renewal expense.

1.6 Financial Summary

What we will do

The estimated funding requirement for Transport services in the coming 10 years is \$10,840,000 on average per year as per the projections outlined in this Plan. The available funding for the projected operational, maintenance, renewal/ replacement, and upgrade/ new requirements from this and other AM Plans will be considered within the Long Term Financial Forecasting for the entire Council organisation.

The infrastructure reality is that only what is funded in the Long Term Financial Forecast can be provided. The purpose of this Asset Management Plan is to communicate the required funding to meet defined service levels, and the consequences and risks

associated with not providing these funding requirements, so that decision making is “informed”.

The projected funding requirement for Transport services is shown in Figure 1.6 below, noting that the ‘budgeted expenditure’ line shown is the average expenditure required to meet these requirements.

Figure 1.6: Projected Operating and Capital Expenditure

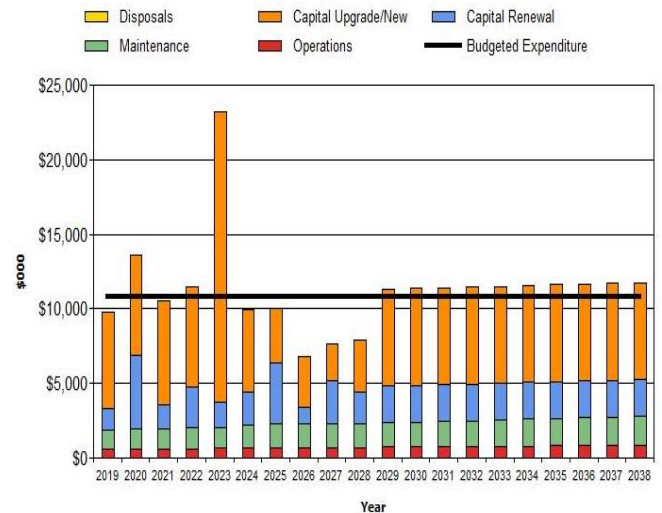


Figure Values are in current (real) dollars.

The funding requirements outlined provide Transport services for the following:

- Operation, maintenance, renewal and upgrade of Transport infrastructure to meet required service levels
- Significant Transport renewal such as the Jensens Crossing Bridge replacement, and upgrade/ new works such as the Charlotte Street Revitalisation project in Cooktown, all within the 10-year planning period.

What we cannot do

What we cannot do will be outlined within Council’s Long Term Financial Forecast (LTFF) which uses a whole of organisation approach to prioritise funding. The LTFF will provide a 10 year financial plan for the Cook Shire Council organisation and will consider projected operational, maintenance, renewal/ replacement, and upgrade/ new funding requirements from this and other AM Plans.

It should be noted that renewal and new capital works projects remain entirely dependent on:-

- DRFA activation for flood recovery funding on an annual basis to remediate damaged road infrastructure, particularly the large unsealed gravel road network,
- Grant funding streams such as Roads to Recovery, TIDS, ATSI-TIDS, and Works for Queensland,

- Successful targeted grant funding application for transport projects such as the Charlotte Street Revitalisation works, and the planned Cooktown Airport upgrade works.

It is anticipated that service trade-offs may well be required within the Transport infrastructure area as a result of inadequate funds being available to meet the funding requirements outlined in this Plan.

Managing the Risks

The main Transport services risks and associated consequences are:

- An unsafe road network leading to Injury, property damage, and damage to reputation
- A DRFA event not being triggered each year leading to insufficient funding to maintain and renew the road network
- Road closures during the wet season not being clearly communicated leading to injury and/ or stranding
- Flood mitigation work being misaligned to priority community need leading to inefficient use of available funds
- Poor project scoping and contractor management leading to deficient structures and cost over-runs
- Insufficient structural capacity of the Cooktown Airport runway/ taxiway leading to ineffective transport of goods and people during flooding or emergency situations.

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

- Undertaking regular condition/ defect inspections
- Maintaining a dedicated flood damage team internal to Council that maintains a close working relationship with the Queensland Reconstruction Authority (QRA) in completing annual DRFA
- Clearly identifying the risk of flooding and road closure at Shire road entry points and providing clear messaging of closures on Council's web site
- Formulation of a road hierarchy and clear liaison through the Torres Cape Indigenous Council Alliance (TCICA) on regional road priorities
- Engaging appropriate staff/ project managers and ensuring robust project management procedures are in place
- Planning towards upgrading the Cooktown Airport to a Code 3C capacity/ strength.

1.7 Asset Management Practices

Our systems to manage assets include:

- Authority financial system
- Asset registers and GIS systems (MapInfo).

Assets requiring renewal/replacement are identified from one of three methods provided in the 'Expenditure Template':

- Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year, or
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems) and/ or forward works programs, or
- Method 3 uses a combination of average network renewals plus defect repairs in the Renewal Plan and Defect Repair Plan worksheets on the 'Expenditure template'.

Method 2 was used 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 include the following tasks:

1. Undertake regular condition and defect inspections to inform maintenance and renewal works programs.
2. Review CRM systems and implement collection of customer service requests related to the different Transport network categories, and formulation and adoption of response and inspection timeframes for requests.
3. Review and revise: 1. Renewal; and 2. upgrade/ new works programs in this Plan in accord with data from Task 1; particularly in consideration of on-going planning for: 1. Charlotte St Revitalisation; 2. Cooktown Airport runway and taxiway/ apron upgrade; 3. Pathway works to high-use pedestrian routes; and 4. The proposed Cooktown 4 Mile Hill waste transfer station development.
4. Compile and review annual scheduled maintenance programs from Task 1 data.
5. Formulate and implement a coordinated process to ensure Transport asset additions and disposals are recorded, registers and GIS systems are updated with all existing and new asset data (including GIS polygon data for airport runways/ taxiways/ aprons), and all relevant staff are fully informed of the update process.

6. Provide an integrated approach to Transport asset revaluations to ensure the Civil Works team, Manager Assets and Manager Finance have input into the process.

7. Undertake a full Transport asset revaluation based on Councils GIS system as being the source of truth, ensuring the GIS system is fully updated with data generated from asset data recollection completed as part of this Plan (2019).

8. Complete:

(a) Road Asset hierarchy categorisation and incorporate this into the Road Register/ GIS system,

(b) Incorporation and update of Traffic Count Data within the Road Register/ GIS system.

2. INTRODUCTION

2.1 Background

This asset management plan communicates the actions required for the responsive management of Transport assets (and services provided from these assets), compliance with regulatory requirements, and funding needed to provide current levels of service over a 20-year planning period.

The Plan has been primarily formulated to document:

- The Transport assets Council owns
- Funding required to maintain the Transport network at current levels of service
- Future demand for renewal and improvements (upgrade/ new works) to the Transport network, and how to manage demand in the long term.

This asset management plan defines the forecast funding requirements for renewal/ replacement and upgrade/ new works by means of a projected 10 year forward works program. The Plan does not define the adequacy of Council funds to implement the program, with funding availability and financial planning dealt with within Council's Long Term Financial Forecast i.e. the funding demand from Council's asset management plans are used to provide the financial demand parameters within the Long Term Financial Forecasting process.

The asset management plan is to be read in conjunction with relevant Cook Shire Council planning documents. This should include the Asset Management Policy and Asset Management Strategy along with other key planning documents including:

- Corporate Plan 2017-2022
- Operational Plan
- Long Term Financial Forecast.

The infrastructure assets covered by this asset management plan are shown in Table 2.1. These assets are used to provide Transport services including roads, bridges, drainage, airports, and pathways.

Table 2.1: Assets covered by this Plan

Asset Category	Dimension/ Number of Items	Replacement Value (to nearest \$000)
Roads (includes Airport Pavements/ surfaces)	2,946 km Road network - 238km sealed, 2,165km unsealed & 541km unformed/ track; Airport runways/ taxiways at Coen, Cooktown, Laura, and Lakeland	\$215,066,000
Kerb & Channel	29.3 km	\$5,846,000
Bridges	38 bridges	\$8,673,000
Stormwater	79 major culverts, 142 concrete causeways	\$12,701,000
Carparks	5 carparks	\$297,000
Pathways	14 km	\$1,615,000
TOTAL		\$244,198,000 (Annual Report \$251,676)

2.2 Goals and Objectives of Asset Ownership

Our goal in managing infrastructure assets is to meet the current (or other ways defined level of service as reviewed and/ or 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 expenditure and how it will be allocated.**

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

- 'International Infrastructure Management Manual 2015'¹, and
- ISO 55000².

2.3 Core and Advanced Asset Management

This asset management plan is prepared as a 'core' asset management plan over a 20 year planning period in accordance with the International Infrastructure Management Manual³. Core asset management is a 'top down' approach where analysis is applied at the system or network level. An 'advanced' asset management approach uses a 'bottom up' approach for gathering detailed asset information for individual assets.

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

² ISO 55000 Overview, principles and terminology

³ IPWEA, 2015, IIMM.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

Community consultation and feedback were key elements in the formulation of the Cook Shire Community Plan 2011-2021, Cook Shire Council Economic Development Plan 2016-2020, and the Cook Shire Council Corporate Plan 2016-2020. Council's Operational Plan 2018-2019 and subsequent Operational Plans are directly based on the relevant Cook Shire Council Corporate Plan.

Community consultation associated with formulation of these key documents provided significant feedback on Transport infrastructure services. Transport services continue to be a major theme Shire wide and regionally for Cape communities which are routinely isolated due to a flooded road network during the wet season.

The **Cook Shire Community Plan 2011-2021** identified 10 priority issues across the Shire. The number 1 priority issue was Roads infrastructure with this issue receiving 50% or more of the polling votes in each Shire location. The Community Plan includes the following strategies under the theme of *Infrastructure, Transport & Services*:

- To improve local roads as resources allow
- To construct bike and footpath networks as resources allow
- To maintain road infrastructure efficiently
- To maintain aerodromes efficiently
- To incorporate 'best practice' road construction and maintenance in high ecological value areas
- To advocate for improvements to reduce flood affected road closures to the south from Coen and Cooktown
- To continue to construct planned roads to provide legal access to private property and public areas as resources allow
- To advocate for air services at reasonable cost.

The **Cook Shire Community Plan 2011-21** also lists:

- Lack of infrastructure investment and constrained legal supply of gravel/ rock for road works and construction as key local challenges
- Sealing of the Peninsula Development Road to Weipa as a game changer
- Leveraging improved road reliability to extend the tourist season as a key opportunity, and
- Coen commentary that the 'Town will only survive with tourism – when roads improve more tourists will come.'

The **Cook Shire Council Economic Development Plan 2016-20** outlines:

- The need to secure supplies of gravel/ rock and water for road works and construction
- That 'the three priority industry sectors for Cook Shire are Tourism, Agriculture and Aviation'
- Outlines the development of the Cooktown Airport Aviation Park as a strategic industry development in the aviation area
- Promotion of easily accessible loop roads throughout the Cooktown region (such as 30km of bitumen seal on Bloomfield Road to give an all-season loop road for 2WD cars between Cape Tribulation and Bloomfield), and development of On and Off road cycling paths as key strategic industry developments
- Cooktown Port development in conjunction with Commercial Precinct Business Plan as an enabling initiative to provide infrastructure for fishing and tourism industries.

Cook Shire Council's Corporate Plan 2017-22 also includes the following strategies in support of the above:

- Eco. 2. – In partnership with local business, industry groups and economic development organisations, continue to develop strategies to assist, strengthen, develop and promote existing and new businesses and industries.
- Eco. 3. – Undertake the management of Council's assets in accordance with sound practice to ensure infrastructure networks are maintained, renewed and upgraded to maximise long term benefit to all.

3.2 Strategic and Corporate Goals

This asset management plan is prepared in accord with Cook Shire Council’s vision, mission, goals and objectives:

Vision: Building sustainable communities with respect for our unique natural environment, celebrating our diverse cultures and sharing our pride in Cape York.

Mission: Our Mission is to understand our communities’ needs and provide consistent service to enable them to flourish in a safe, sustainable manner.

Relevant goals and objectives from the Corporate Plan 2017-2022 and how these are addressed in this asset management plan (AM Plan) are detailed in Table 3.2 following.

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

Goal	Objective	How Goal and Objectives are addressed in AM Plan
<i>ECONOMY - Locality specific economic growth, appropriate to each community and the Shire as a whole.</i>	<i>ECO 3. - Undertake the management of Council’s assets in accordance with sound practice to ensure infrastructure networks are maintained, renewed and upgraded to maximise long term benefit to all.</i> Eco 3b. Asset management plans are completed for major infrastructure assets.	Eco 3b. – This and associated asset management plan(s) for major infrastructure assets now completed
<i>GOVERNANCE – Accountable, responsible and appropriate governance and management, reflected in responsible long-term financial sustainability and clear strategic direction built around core local government business and affordable levels of service.</i>	<i>GOV 2. Prepare management strategies to underpin asset sustainability.</i> Gov 2a. Condition assessments are undertaken for major asset classes. Gov 2b. Council’s asset management plan is completed and informs Council’s long term financial strategy.	Gov 2a. – Condition assessments have been completed as part of the asset management plan(s) formulation. Gov 2b. – Asset management plan(s) now completed to inform Council’s long term financial strategy.

3.3 Legislative Requirements

Statutory requirements set the framework for minimum levels of service that Transport services are required to meet. Legislative requirements relating to the management of Transport assets are many with some of the more significant requirements outlined in Table 3.3 below.

Table 3.3: Legislative Requirements

Legislation	Details/ Requirement
Local Government Act 2009.	Adherence to local government principles, including: (a) transparent and effective processes, and decision-making in the public interest; and (b) sustainable development and management of assets and infrastructure, and delivery of effective services.
Local Government Regulation 2012 (168).	A local government’s long-term AM plan must- (a) provide for strategies to ensure the sustainable management of the assets mentioned in the local government’s asset register and the infrastructure of the local government; and (b) state the estimated capital expenditure for renewing, upgrading, and extending the assets for the period covered by the plan; and (c) be part of, and consistent with, the long term financial forecast.
Transport Infrastructure Act 1994.	Provides a regime that allows for and encourages effective planning and efficient management of a system of transport infrastructure.

Table 3.3: Legislative Requirements (Cont.)

Legislation	Details/ Requirement
Transport Planning and Coordination Act 1994.	To improve – (a) The economic, trade and regional development performance of Queensland; and (b) The quality of life of Queenslanders; by achieving overall transport effectiveness and efficiency through strategic planning and management of transport resources.
Transport Operations (Road Use Management) Act 1995.	To – (a) provide for the effective and efficient management of road use in the State; and (b) provide a scheme for managing the use of the State’s roads that will – (i) contribute to the strategic management of road infrastructure in ways consistent with the Transport Infrastructure Act 1994; and (ii) improve road safety and the environmental impact of road use in ways that contribute to overall transport effectiveness and efficiency; and (iii) support a reasonable level of community access and mobility in support of government social justice objectives; and (c) provide for the effective and efficient management of vehicle use in a public place.
Heavy Vehicle National Law Act 2012. (applied in Queensland as the: Heavy Vehicle National Law (Queensland))	The object of this Law is to establish a national scheme for facilitating and regulating the use of heavy vehicles on roads in a way that— (a) promotes public safety; and (b) manages the impact of heavy vehicles on the environment, road infrastructure and public amenity; and (c) promotes industry productivity and efficiency in the road transport of goods and passengers by heavy vehicles; and (d) encourages and promotes productive, efficient, innovative and safe business practices.

3.4 Customer Levels of Service

Levels of service are defined in this asset management plan in two terms, Customer Levels of Service (this section 3.4) and Technical Levels of Service (following section 3.5).

Customer Levels of Service measure how the customer receives the service and whether value to the customer is provided. Customer levels of service measures used in this asset management plan are:

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?*

The current and expected customer service levels are detailed in Table 3.4 following. The expected level of service position in 10 years is based on the current budget/ actuals.

Table 3.4: Customer Level of Service

Key Performance Measure	Level of Service/ Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current Budget
<i>Service Objective: Provide safe and well maintained transport networks that adequately facilitate required services.</i>				
Quality	I can travel the Shire or deliver my load to its destination easily, safely, and in a reasonable time without destroying my vehicle	Days per year roads cannot provide access and/ or are in a state unfit for travel	Varies widely dependent on wet season events, road location, and standard of construction sealed/ unsealed	Minimal but steady improvement over time, with vast majority of roads remaining subject to seasonal flooding
	Confidence levels		High	Medium
Function	I can use the roads safely soon after the wet season finishes	Days between last significant rain event and open-up grade	Varies widely based on location and timely engagement of DRFA contractors	No or little change expected
	Confidence levels		High	Medium
Capacity and Use	<p>Roads provide adequate strength and passing width to cater for all transport needs.</p> <p>Airport services can cater for appropriate size aircraft.</p> <p>Pathways are available on high pedestrian use routes.</p>	<p>Requests to:</p> <p>-Increase Road capacity/ standard</p> <p>-Increase Airport runway / taxiway capacity.</p> <p>-Provide Pathways within townships/ communities.</p>	<p>Significant pending Roads requests -</p> <p>(1) Upgrade of Dixie Rd: LRRS nomination Carpentaria Shire;</p> <p>(2) New Major causeways requests for Kimba Gamboola Rd and Fairview Palmerville Rd;</p> <p>(3) Requests to improve and seal community link roads.</p>	<p>(1) Minor works completed to increase serviceability of Dixie Rd;</p> <p>(2) New major causeways completed to Kimba Gamboola and Fairview Palmerville Roads; sworks as noted;</p> <p>(3) Increased km sealed network to community link roads;</p> <p>(4) Cooktown airport capacity upgrade scheduled or completed;</p> <p>(5) Pathway network increased several km in length.</p>
	Confidence levels		High	Medium-High

3.5 Technical Levels of Service

Technical Levels of Service - These are technical measures related to the allocation of resources to service activities that are aimed at best achieving the desired customer outcomes and demonstrating effective performance.

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

- Operations – the regular activities to provide services (e.g. street sweeping);
- 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 pot hole patching);
- Renewal – the activities that return the service capability of an asset up to that which it had originally (e.g. resealing a sealed road segment);
- Upgrade/New – the activities to provide a higher level of service (e.g. extending an existing causeway) or a new service that did not exist previously (e.g. reconstructing and sealing a gravel road).

Service and asset managers plan, implement and control technical service levels to influence the customer service levels.⁴

Table 3.5 shows the technical levels of service expected to be provided under this Transport Asset Management Plan. The 'Desired' position in the table documents the position being recommended in this Transport Asset Management Plan.

Table 3.5: Technical Levels of Service

Service Attribute	Level of Service/ Activity Objective	Performance Measure Process	Current Performance *	Desired Level of Service/ Optimum Lifecycle Cost **
TECHNICAL LEVELS OF SERVICE				
Operations				
	Roads meet user's needs	Condition/ defects assessment	Undertaken annually as part of DRFA road assessments	Annual assessment as part of flood damage assessment
	Airports meet user's needs	Visual defect assessment	Daily visual assessment	Daily visual assessment
	Pathways meet user's needs	Visual defect assessment	Nil pathway assessments undertaken	Assess pathways max. 2-Yearly
		Budget	Total \$579,000	Total \$579,000 (TBC)
Maintenance				
	Roads, Airports and Pathways are suitable for purpose	Reactive and Planned activities completed to adopted timeframes	TBC – CRM system requires upgrade to be able to report on reactive requests	TBC – Road requests are dependent on weather, access and resources to complete
		Budget	React. Maint. (TBC) Planned Maint. (TBC) Total \$1,298,000	React. Maint. (TBC) Planned Maint. (TBC) Total \$1,298,000 (TBC)
Renewal				
	Transport facilities meet user's needs	% of Roads, Airports and Pathways assets in Condition 4 & 5	Assets in Condition 4 & 5: Bridges = 5% Major Culverts = 9% Airport Sealed Surface = 52% Pathways = 6% Remainder transport categories = 3% or less	< 5% within condition 4 & 5
		Budget	\$2,447,122 (2018-19)	\$2,463,000 av. (Budget dependent on grant funding)
Upgrade/New				
	- Increasing flood resiliency of the road network. - Upgrade to Cooktown Airport Runway/ Taxiway for flood resiliency and capacity. - Pathways completed on high-use pedestrian routes.	Works completed on time and within budget. Capital works projects are grant funded.	TBC at end of each financial year - not available for 2018-19 Majority of projects are 50% + grant funded	90% of capital works projects completed in the year programmed, and all projects completed within the total annual capital works budget. All Upgrade/New works 100% grant funded
		Budget	\$973,000 2018-19	\$6,500,000 av. (Budget dependent on grant funding)

⁴ IPWEA, 2015, IIMM, p 2 | 28.

Notes for Table 3.5:

- * Current activities and costs (currently funded).
- ** Desired activities and costs to sustain current service levels and achieve minimum life cycle costs (not currently funded).

It is important to monitor the service levels provided regularly as these will change. The current performance is influenced by work efficiencies, technology, and changing customer priorities over time. Review and establishment of the agreed position which achieves the best balance between service, risk and cost is essential.

4. FUTURE DEMAND

4.1 Demand Drivers

Drivers affecting demand include things such as population change, changes in demographics, changing consumer priorities and expectations, and climate change.

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been documented in Table 4.3 below.

4.3 Demand Impact on Assets

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

Table 4.3: Demand Drivers, Projections and Impact on Services

Demand drivers	Present position	Projection	Impact on services
Population	4226 (2016 Census) 4,445 (2018 ABS Est.)	5,157 in 2031 (medium series est. Qld Treasury and Trade)	Increased transport services use, and demand for new services such as pathway links.
Tourism	30,000 tourist visits to Cooktown (2015). Large numbers of tourists visiting the Cape and Cook Shire as a bucket list item.	Tourist numbers steadily increasing	Increased traffic volumes with associated increased maintenance and renewal requirements. Increased demand for air services and airport capacity to land larger aircraft.
Sealing of Peninsula Development Road	Progressive sealing of PDR	PDR sealed to Weipa by 2025	Increased traffic volumes on the Cook Shire network with associated increased maintenance and renewal requirements.
Global warming with more adverse weather events	Event declaration for each of last 10 years	More significant weather events with greater severity	Increased time required to complete and maintain open-up grades; and decreased time to complete annual disaster restoration works within the construction season. Increased demand for flood resilient airports of sufficient capacity.
Customer Expectations/ Amenity	Significant portion of unsealed urban roads. Major portion of community link roads unsealed.	Progressive sealing of urban streets. Progressive but steady sealing of community link roads over the long term.	Increased renewal costs to reseal roads once sealed, with Council renewal costs sky-rocketing. Urban street new seals competing with required renewal works for funding.

4.4 Demand Management Plan

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

Opportunities identified to date for demand management are shown in Table 4.4. Further opportunities will be developed in future revisions of this AM Plan.

Table 4.4: Demand Management Plan Summary

Demand Driver	Impact on Services	Demand Management Plan
Population increasing	Increased transport services use, and demand for new services such as pathway links.	Steadily improve resiliency of road network through external funding streams such as DRFA betterment projects. Plan to establish pathway links in communities along high use routes.
Tourism	Increased traffic volumes with associated increased maintenance and renewal requirements. Increased demand for air services and airport capacity to land larger aircraft.	Lobby/ advocate the State to provide renewal funding for reseals and pavement reconstruction on all community link (ATSI-TIDS) roads. Complete detailed planning and options analysis, seek and obtain grant funding, and then complete Cooktown Airport capacity upgrade.
Sealing of Peninsula Development Road	Increased traffic volumes on the Cook Shire network with associated increased maintenance and renewal requirements.	Lobby/ advocate the State to provide renewal funding for reseals and pavement reconstruction on all community link roads.
Global warming with more adverse weather events	Increased time required to complete and maintain open-up grades; and decreased time to complete annual disaster restoration works within the construction season. Increased demand for flood resilient airports of sufficient capacity.	Continue to manage and resource Disaster Recovery Funding Arrangements (DRFA) within Council to provide efficient and timely project management of flood damage open-ups and completion of restoration works within the calendar year in which they occur. Complete detailed planning and options analysis, seek and obtain grant funding, and then complete Cooktown Airport capacity upgrade.
Customer Expectations/ Amenity	Increased renewal costs to reseal roads once sealed, with Council renewal costs sky-rocketing. Urban street new seals competing with required renewal works for funding.	Lobby/ advocate the State to provide renewal funding for reseals and pavement reconstruction on all community link (ATSI-TIDS) roads, enabling available funds to flow into provision of sealed urban roads and renewal of the road network.

4.5 Asset Programs to meet Demand

The new assets required to meet demand can be acquired, donated or constructed. Additional assets are discussed in Section 5.5. The summary of the cumulative value of additional assets is shown in Figure 1.

Figure 1: Upgrade and New Assets to meet Demand – (Cumulative)

Cook SC - Upgrade & New Assets to meet Demand (Transport_S2_V1)

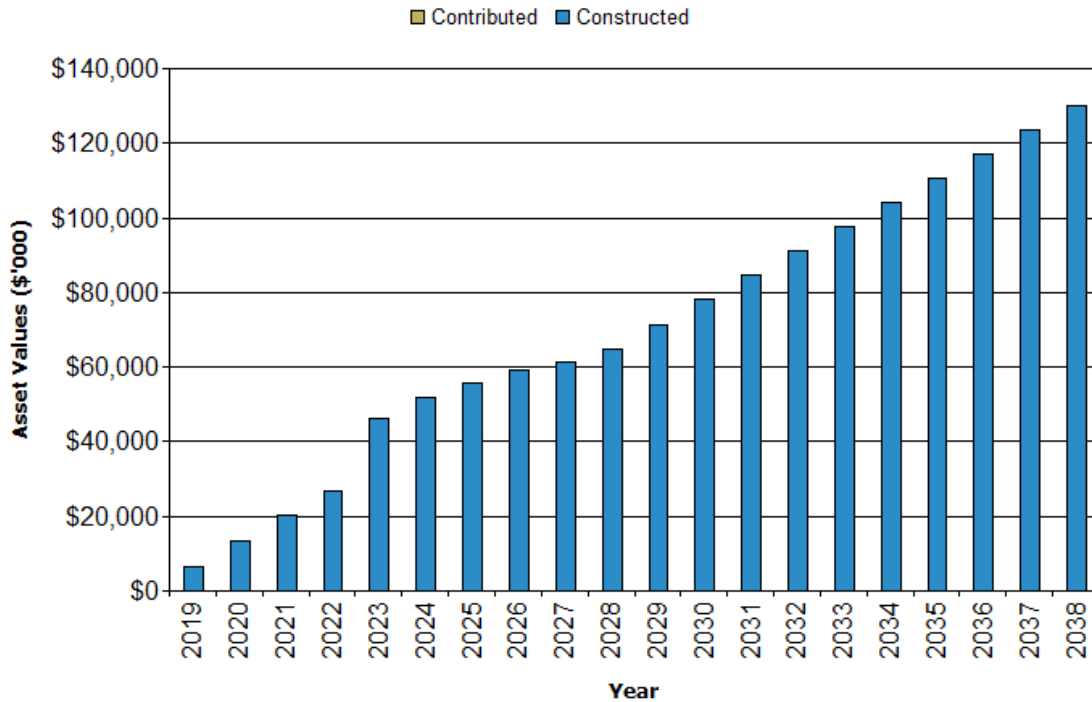


Figure Values are in current (real) dollars.

The major upgrade and new Transport assets planned for the next 10 years include:

- Major causeways on Kimba Gamboola and Fairview Palmerville Roads
- Progressive sealing works to community link roads under ATSI-TIDS funding
- Reconstruction and sealing of urban roads
- The Charlotte St Revitalisation project which includes reconstruction of Charlotte Street (Cooktown), part-reconstruction of Sherrin Esplanade and Webber Esplanade, and a shared path linking William Daku Park with the Charlotte Street roundabout
- Strengthening and upgrade of the Cooktown Airport runway and taxiway/ apron areas
- Pathway works to high-use routes in Coen, Cooktown, Lakeland, Laura and other communities
- Roadworks associated with the planned new Waste Transfer Station (WTS) on the 4 Mile Hill Cooktown site, including reconstruction of part Macmillan Street and internal WTS roadways.

Acquiring these new assets will commit 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 Forecast as outlined further in Section 5.

5. LIFECYCLE MANAGEMENT PLAN

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

5.1 Background Data

5.1.1 Physical parameters

The Transport assets covered by this asset management plan are shown in Table 2.1 and include road, bridge, major culvert, causeway, minor culvert, airport runway/ taxiway, and pathway assets.

Transport infrastructure assets are situated across the Shire and provide essential infrastructure for vehicle and aircraft transport services. The Transport group accounts for nearly 60% by value of Cook Shire Council's infrastructure assets. Values given in Table 5.1.1 differ marginally from the financial figures given in Table 2.1 due to work in progress transfers, write-offs and similar items.

Table 5.1.1: Transport Asset Parameters

Category	Parameters	Value (\$)
Roads & Airports	<ul style="list-style-type: none"> Roads – 238 km sealed & 2,165 km unsealed gravel network; plus 215 km unpaved and 316 km unmaintained track = Total 2,934 km Kerb & Channel – 29.3 km Airports – Runways, taxiways & car parks at Cooktown, Coen, Laura & Lakeland townships 	\$221,209,660
Bridges/ Major Culverts & Drainage/ Stormwater	<ul style="list-style-type: none"> Bridges – 38 No. of Major Culverts – 79 No. of Causeways – 142 No. of (approx. 31,000m² concrete) Minor Culverts 	\$21,373,374
Pathways	<ul style="list-style-type: none"> Pathways – 14.1 km (approx. 29,400m²) 	\$1,614,869
Total:		\$244,197,903

Table Values are in current (real) dollars.

For the purposes of definition, Major Culverts are defined in this Plan and for associated Bridge and Major Culvert inspection purposes as:

A structure with the primary purpose of providing a passageway beneath a road or path, usually but not necessarily for stormwater, with a minimum span or diameter of 1.2m for metal culverts or 1.8m for all other culverts, or a minimum waterway area of 3m².

5.1.2 Asset capacity and performance

New assets are generally provided to meet design standards relevant to those assets. In the case of Transport assets there are many roads that have developed over time and often do not meet current road design standards. These roads can often be improved but due to ground terrain, drainage and road reserve constraints may never meet current road geometry standards.

Locations where significant deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

Location/ Facility	Service Deficiency
Rural gravel Road network Drainage	Drainage line scouring resulting in limited access, more days roads are closed over the wet season, poor flood resiliency, and poor amenity
Rural Road network Drainage	Poor flood resiliency and limited access during wet season – requirement for new major culverts and/ or causeways with low flow pipes to increase flood resiliency across the network

Table 5.1.2: Known Service Performance Deficiencies (Cont.)

Location/ Facility	Service Deficiency
Rural Road network	Most roads remain unsealed and the majority of community link roads (total 533 km) remain only partly sealed with resulting poor resiliency to flooding and flood damage, diminished access, poor amenity and increased travel times
Rural Road network major Causeways	Causeways required to provide network connectivity on Fairview Palmerville Rd at St George River; and Kimba Gamboola Rd at Palmer River crossing; also extension upgrade to existing causeways required to mitigate flood damage/ improve amenity
Urban Road network	Significant amount of unsealed and/ or unconstructed urban streets resulting in poor amenity and increased maintenance/ access issues
Urban Drainage Network	Poor street-side drainage leading to significant scouring, and inadequate low flow piped drainage network - Culvert upgrades, new piped drainage, kerb & channel upgrade, pit and pipe upgrades required at various locations
Cooktown Airport	Poor runway/ taxiway pavement strength and inability to cater for larger aircraft; Secure parking facility not available
Pathways at various townships	Pathway links are non-existent or provide only limited connectivity between major facilities along high-use pedestrian routes

The above service deficiencies were identified from forward works programming with operational/project staff and network assessment and review in 2016-19.

5.1.3 Asset condition

Condition is monitored as part of periodic bridge and major culvert/ drainage inspections, annual road network flood damage assessments under Disaster Recovery Flood Arrangements (DRFA), periodic review and assessment of airport pavements, and periodic assessment/ review of pathway condition.

Asset condition profiles are provided in Table 5.1.3 following. For Bridge, Major Culvert, Causeway, Kerb & Channel, and Pathways categories, these profiles have been based on condition assessments undertaken as part of the data recollection for this Transport Asset Management Plan. The basis for condition profiles provided for other asset categories are:-

- Road – Sealed Pavement:- condition based on the 2018 roads valuation pavement condition estimate
- Road – Sealed Surface:-condition based on the 2018 roads valuation sealed surface condition estimate
- Road – Unsealed Pavement:- condition based on a general estimate of the gravel road network condition after dry season flood damage reconstruction
- Airport – Sealed Pavement:- condition based on the 2018 Cooktown airport engineering report and investigations
- Airport – Sealed Surface:- condition based on the 2018 Cooktown airport engineering report and investigations.

Condition is measured using a 1 – 5 grading system⁵, with this condition data compiled in Table 5.1.3 below:

- Condition **1 – Very Good**: only planned maintenance required
- Condition **2 - Good**: minor maintenance required plus planned maintenance
- Condition **3 - Fair**: significant maintenance required
- Condition **4 - Poor**: significant renewal/rehabilitation required
- Condition **5 - Very Poor**: physically unsound and/or beyond rehabilitation.

⁵ IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

Table 5.1.3: Asset Condition Profile

Transport Asset Category & Sub-Category	Unit Assessed	% in Cond. 1	% in Cond. 2	% in Cond. 3	% in Cond. 4	% in Cond. 5	Total Unit Quantity
Bridge	m2 deck area	65%	30%	0%	5%	0%	2,803 m2
Major Culvert	m2 'deck' area	76%	12%	3%	3%	6%	3,483 m2
Causeway	m2	31%	51%	16%	2%	0%	30,850 m2
Road – Sealed Pavement	m2	23%	75%	0%	1%	1%	1,898,607 m2
Road – Sealed Surface	m2	0%	13%	86%	1%	0%	1,699,015 m2
Road – Unsealed Pavement	m2	35%	40%	25%	0%	0%	14,050,338 m2
Road – Kerb & Channel	lm	38%	36%	24%	2%	0%	29,277 lm
Airport – Sealed Pavement	m2	80%	17%	0%	0%	3%	118,586 m2
Airport – Sealed Surface	m2	8%	4%	36%	52%	0%	118,586 m2
Pathways	m2	75%	10%	9%	6%	0%	29,399 m2

5.2 Operations and Maintenance Plan

Operations include regular activities to provide Transport services such as vegetation management and drain cleaning.

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again, for example pot-hole repairs or a bridge deck repair.

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.

Maintenance expenditure is shown in Table 5.2.1.

Table 5.2.1: Maintenance Expenditure Trends

Year	Maintenance Budget \$
2017-18	\$1,106,447 (Actual)
2018-19	\$1,298,200 (Budget)
2019-20	\$1,298,200 (Estimated)

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

Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 2. Note that all costs are shown in current 2018-19 dollar values (i.e. real values).

Figure 2: Projected Operations and Maintenance Expenditure

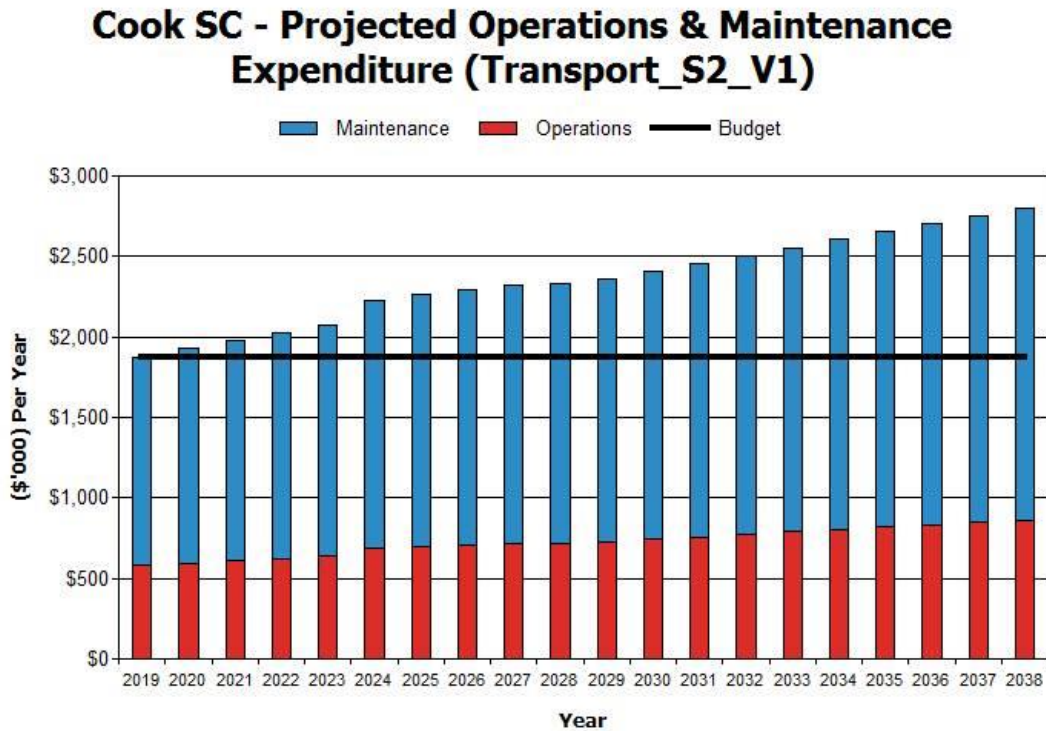


Figure Values are in current (real) dollars.

It should be noted that with significant forecast upgrade and new works proposed, there is a significant increase in projected Operations and Maintenance expense over the coming 10-20 years. This operations and maintenance expense will require funding consideration within the Long Term Financial Forecast (LTFF), with the increased operations and maintenance requirements potentially requiring deferral due to funding shortfall in the next 10 year timeframe.

Maintenance is funded from the operating budget as available. This is further discussed in Section 7.

5.3 Renewal/Replacement Plan

Renewal and replacement expenditure is major work which does not increase the asset’s design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an upgrade/expansion or new work expenditure resulting in additional future operations and maintenance costs.

Assets requiring renewal/replacement are identified from one of three methods provided in the ‘Expenditure Template’:

- Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year, or
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems), and/ or forward work programs, and
- Method 3 uses a combination of average network renewals plus defect repairs in the Renewal Plan and Defect Repair Plan worksheets on the ‘Expenditure template’.

Method 2 has been used for this asset management plan.

5.3.1 Renewal ranking criteria

Asset renewal and replacement 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 timber bridge that has reached the end of its useful life), or

- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. replacing bridge girders that are no longer structurally sound).⁶

Capital renewal and replacement priorities are determined by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be greatest,
- Have a total value representing the greatest net value,
- Have the highest average age relative to their expected lives,
- Are identified in the AM Plan as key cost factors,
- Have high operational or maintenance costs, and
- Have replacement with a modern equivalent asset that would provide the equivalent service at a net saving.⁷

5.3.2 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases. The projected capital renewal and replacement program is shown in Appendix A with the resultant expenditure required shown in Fig 3 below.

Fig 3: Projected Capital Renewal and Replacement Expenditure
Cook SC - Projected Capital Renewal Expenditure (Transport_S2_V1)

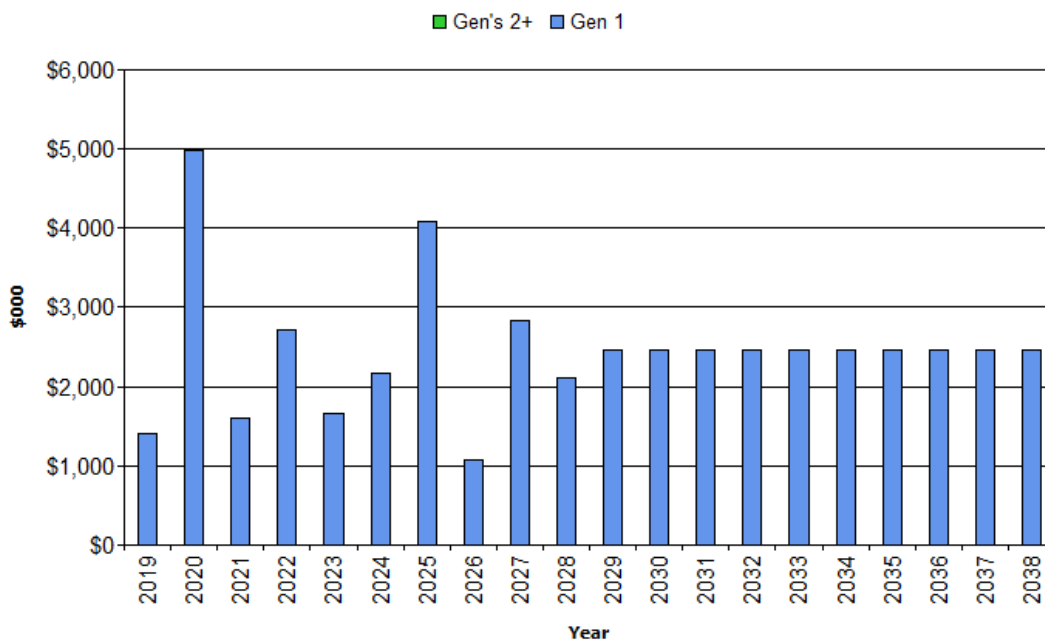


Figure Values are in current (real) dollars.

In regard to required renewal and demand management Council should note the two major factors influencing Transport renewal funding:

- Cook Shire Council is responsible for managing 533km of link roads to indigenous communities including the Mein Batavia/ Moreton Bramwell/ Bamaga Roads, Aurukun Road, Portland Roads/ Iron Range Roads, Musgrave Strathgordon Road, and Bloomfield Road. Council is currently funded for new and upgrade works on these roads through ATSI-TIDS funding but remains responsible for renewal works such as reseals. With a total of 155km of these link roads currently sealed (2019), and a corresponding sealed area of 1,158,184 m², the average annual

⁶ IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

⁷ Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

resealing (renewal) cost is approx. \$695,000 per annum (based on \$9/m² reseal cost and a 15 year useful life). The *Projected 10-year Renewal/ Replacement & Upgrade / New Capital Works Program* (Appendix A) that forms the basis of the projected capital renewal expenditure shown in Fig. 3, includes a total value of \$10,280,535 over the 10 years for resealing of indigenous community link roads, or an average \$1,028,054 per annum.

As these community link roads are progressively sealed so will the annual average renewal cost, with an ultimate resealing renewal liability of approx. \$2,400,000 per annum when these roads are 100% sealed. The current and ultimate costs for renewal works on these roads is unsustainable for Cook Shire Council.

It is recommended that Cook Shire's funding strategy in the Transport area include strongly advocating that the State take on full responsibility of **100% funding both renewal and new/ upgrade works on all community link roads** (refer to *Table 4.4 Demand Management Plan Summary*).

- (b) The renewal expenditure projection is based on Disaster Recovery Funding Arrangements (DRFA) continuing to restore and rehabilitate Council's transport network on an annual basis, and in effect (due to annual occurrence) fund **100% of renewal works in the unsealed pavement (gravel) road category**. The current Road Register (2019) details that Council manages 2,165 km of unsealed pavement (gravel) roads with a pavement area of approx. *14,050,000 m².

Cardno (Qld) Pty Ltd valued this unsealed pavement (2018) at \$5.20/ m² for the short life component (15 year useful life) and \$3.47/ m² for the long life component (45 year useful life), giving an average annual depreciation value of \$0.4238/ m² for unsealed pavement. This equates to an annual depreciation value of approx. \$5,954,000 for unsealed pavement (gravel) roads. This is the major component of the Transport portfolio's renewal liability/ depreciation expense.

** Note: The unsealed pavement area from the current Road Register does not reconcile with Cardno's asset register. This requires review, refer Table 8.1: Improvement Plan Task No 7 'Undertake a full transport asset revaluation based on Council's GIS system as being the source of truth, ensuring the GIS system is fully updated with data generated from asset data recollection completed as part of this Plan (2019).*

The projected renewal expense will require funding consideration within the Long Term Financial Forecast (LTFF), with renewal requirements potentially requiring deferral due to funding shortfall in the next 10 year timeframe. This is further discussed in Section 7.

5.4 Creation/Acquisition/Upgrade Plan

New works are those that create a new asset that did not previously exist, or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, community, regulatory, or other needs. Assets such as those contributed by developers may also be acquired at no cost, for instance a developer contributing new road and drainage infrastructure as part of a new subdivision. These additional assets are considered in Section 4.4.

5.4.1 Selection criteria

Construction of new assets and the upgrade/expansion of existing assets are identified from various sources such as:

- feedback and requests from community groups, stakeholders, and Council
- noted deficiencies within existing infrastructure
- strategic planning and master planning processes, and
- regional strategic planning frameworks (often in partnership with others).

Project proposals are considered by Council in view of available funds and the Long Term Financial Forecast, with priority projects considered for inclusion in the annual capital works budget and/ or specific grant funding opportunities.

5.4.2 Summary of future upgrade/new assets expenditure

Projected upgrade/new asset expenditures are summarised in Fig 4. The projected 10-year renewal/ replacement and upgrade/new capital works program is shown in Appendix A.

Fig 4: Projected Capital Upgrade/New Asset Expenditure

Cook SC - Projected Capital Upgrade/New Expenditure (Transport_S2_V1)

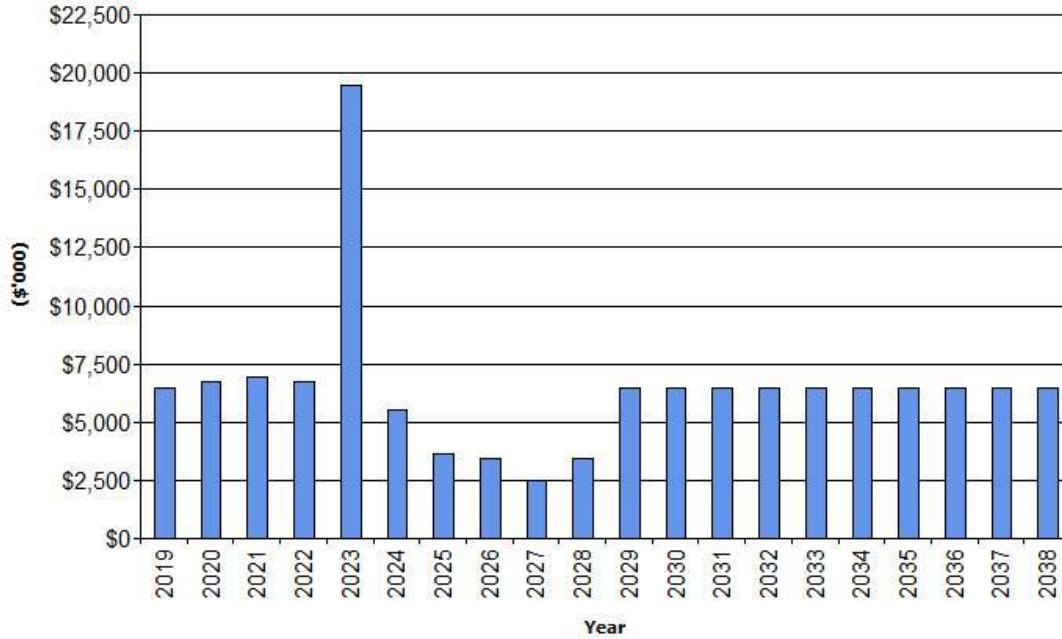


Figure Values are in current (real) dollars.

Expenditure on new assets and services in the capital works program will only be accommodated in the Long Term Financial Forecast to the extent of the available funds. Acquiring these new assets will commit the funding of ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required.

5.4.3 Summary of asset expenditure requirements

The financial projections from this asset plan are shown in Fig 5 for projected operating (operations and maintenance) and capital expenditure (renewal/ replacement and upgrade/ new assets). Note that all costs are shown in current (real) dollars.

The bars in the graphs represent the projected budget requirements to achieve lowest lifecycle costs with the budget line indicating the budget expenditure required to provide a balanced budget. The gap between required budget expenditure and the available budget as derived from the Long Term Financial Forecast informs the discussion on achieving the balance between services, costs and risk to achieve the best value outcome.

Fig 5: Projected Operating and Capital Expenditure

Cook SC - Projected Operating and Capital Expenditure (Transport_S2_V1)

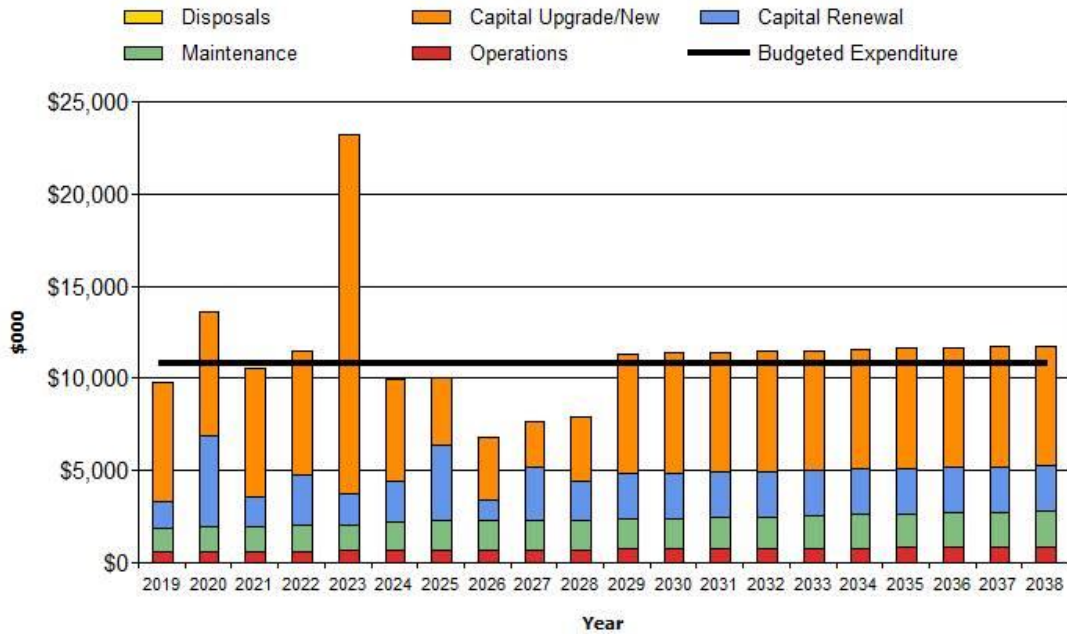


Figure Values are in current (real) dollars.

5.5 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. There is only one asset identified for decommissioning/ disposal in this Plan which is Jensens Crossing Bridge, with planned replacement in 2019-21. The cost of demolishing the bridge forms part of the renewal cost identified in the capital works program. There are negligible operations and maintenance annual savings as a result of this bridge replacement.

6. RISK MANAGEMENT PLAN

The purpose of infrastructure risk management is to document the results 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 31000:2009 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2009 as: ‘coordinated activities to direct and control with regard to risk’⁸.

Cook Shire Council adopted a *Risk Management Policy* with associated *Risk Management Framework 2019* in line with International Standard ISO 31000:2009 Risk management – Principles and guidelines in March 2019. The risks outlined in this section of the AM Plan are not considered as new risks, with treatment plans for the risks identified largely in place.

A corporate assessment of risks associated with service delivery from infrastructure assets is required to identify/verify the organisation’s critical risks that will result in loss or reduction in service from infrastructure assets or a ‘financial shock’. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Similarly, critical failure modes are those which have the highest consequences.

Critical assets have been identified and their typical failure mode and the impact on service delivery are shown in Table 6.1 below.

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Bridges & Major Culverts	Structural failure due to age, rusting, flooding events (Natural Disaster/ Cyclone) and ‘piping’	Road transport routes cut at bridges/ culverts isolating properties and communities
Link Roads to Communities	Flooding rendering the road non-trafficable and scoured out (Natural Disaster/ Cyclone events)	Road transport routes cut due to flooded/ non-trafficable roads isolating properties and communities
Airports	Pavement and/ or seal failure due to flooding (Natural Disaster/ Cyclone) and ground saturation	Air transport routes non-operational due to flooding or pavement failure isolating communities and townships

The assets noted are critical in maintaining Transport services within Cook Shire, noting that the Shire experiences annual flooding as part of the normal wet season, and is often impacted by cyclone events. Condition inspection programs, maintenance and capital expenditure plans can be directed at crucial areas by identifying critical assets and their failure modes.

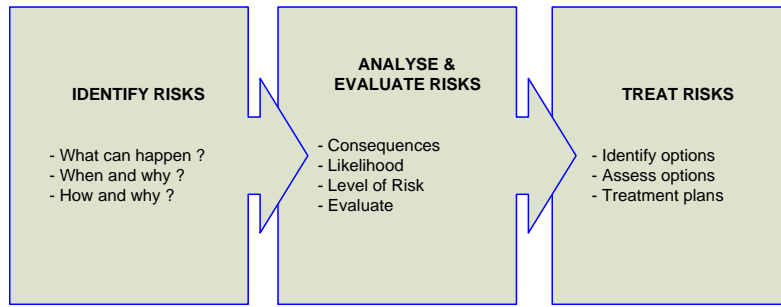
6.2 Risk Assessment

The risk management process used in this AM Plan 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 the ISO risk assessment standard ISO 31000:2009.

⁸ ISO 31000:2009, p 2

Fig 6.2 Risk Management Process – Abridged



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

A preliminary assessment of risks associated with service delivery from Transport infrastructure assets has identified the critical risks that will result in significant loss, ‘financial shock’, or a reduction in service.

Critical risks are those assessed with ‘Very High’ risk rating (requiring immediate corrective action) and ‘High’ risk rating (requiring corrective action). The critical risks identified in the preliminary assessment, with associated residual risk and treatment cost after the selected treatment plan is implemented, is shown in Table 6.2.

Table 6.2: Critical Risks and Treatment Plans

Service or Asset and Risk	What can Happen	Risk Rating (L, M, H, VH)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Road network - Unsafe for use	Accidents/ Injury. Damage to Reputation.	H	Repairs and maintenance undertaken by trained and experienced persons. Undertake regular condition/ defect inspections. Undertake open up grades at earliest opportunity	M	Additional staff time for periodic inspections, particularly bridges and culverts; Open up grades normally covered under Disaster Recovery Funding Arrangements (DRFA)
Road network – Event to trigger DRFA does not occur in any one year	Lack of funding to maintain, repair and renew road network, particularly unsealed roads; resulting safety issues/ hazards	H	Maintain dedicated flood damage team; gather evidence for activation at earliest opportunity; maintain open liaison with Queensland Reconstruction Authority (QRA)/ DRFA	M	Staff time
Road network – road closures during wet season not clearly communicated	Injury. People stranded and without communication	H	Clear identification on all network entry points and Council’s web site of risk of flooding, prevailing road conditions/ road closures, and lack of mobile coverage on remote roads	M	Signage costs est. \$50,000; Staff time

Table 6.2: Critical Risks and Treatment Plans (Continued)

Service or Asset and Risk	What can Happen	Risk Rating (L, M, H, VH)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Road network – flood mitigation works are misaligned to priority community need	Strategic need and/ or priority community link roads not clearly prioritised on a regional basis.	H	Formulate a road hierarchy; liaison regionally through TCICA with communities reliant on Cook Shire community link roads	M	Staff time; Councillor/ CEO/ ELT time with TCICA participation and liaison
Road network – poor project scoping and contractor management	Construction of deficient roads and structures; new network works do not provide adequate flood resiliency; Budget over-expenditure.	H	Engage appropriate staff, project managers and consultants (as required) to enable correct scoping, costings and supervision. Ensure robust project management procedures are in place.	M	Budgeted within Capital works project costs
Airport runway – poor capacity and ability to land larger/ modern passenger aircraft	Limited capacity to fly in goods in emergency supply or evacuation events. Formation of air bubbles lifting sealed surface during flooding situations.	H	Plan towards upgrading runway to Code 3C capacity/ strength; complete additional master planning, detailed design and options analysis to enable informed grant funding application.	M	\$400,000 grant funding received 2019 to undertake detailed design/ options analysis for Cooktown airport upgrade to Code 3C

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

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to our customers and the services we provide. To adapt to changing conditions and grow over time we need to understand our capacity to respond to possible disruptions and be positioned to absorb disturbance and act effectively in a crisis to ensure continuity of service.

Resilience is built on aspects such as response and recovery planning, financial capacity and crisis leadership. Cook Shire Council’s Local Disaster Management Group is tasked more specifically with response and recovery planning on a Council wide scale.

Our current measure of resilience is shown in Table 6.4 which includes the type of threats and hazards, resilience assessment, and identified improvements and/or interventions.

Table 6.3: Resilience

Threat / Hazard	Resilience LMH	Improvements / Interventions
Flooding and storms with subsequent cuts/ blocks to road network, with extended road closures isolating communities over the wet season.	L	Focus on flood resiliency to network using QRA betterment and/ or TIDS funding opportunities. Focus on community local and urban roads sealing and flood mitigation to provide greatest community benefit.
Cooktown Airport has insufficient capacity to receive large aircraft due to runway capacity/ strength issues. Also air bubbles form under the seal due to flooding/ ground saturation requiring closure of the runway at times.	M	Plan towards upgrading runway to Code 3C capacity/ strength; complete additional master planning, detailed design and options analysis.

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

What we cannot do will be outlined within Council’s Long Term Financial Forecast (LTFF) which uses a whole of organisation approach. The LTFF will provide 10 year planning for the entire Council organisation and will consider projected operational, maintenance, renewal/ replacement, and upgrade/ new funding requirements from this and other AM Plans in its formulation.

It should be noted that renewal and new capital works projects remain entirely dependent on:-

- DRFA activation for flood recovery funding on an annual basis to remediate damaged road infrastructure, particularly the large unsealed gravel road network,
- grant funding streams such as Roads to Recovery, TIDS, ATSI-TIDS, and Works for Queensland,
- successful targeted grant funding application for transport projects such as the Charlotte Street Revitalisation works, and the planned Cooktown Airport upgrade works.

6.4.2 Service trade-off

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. It is anticipated that service trade-offs will be required with definition of these trade-offs to be defined and documented within Council’s LTFF. These trade-offs will in turn be incorporated into the next iteration of this AM Plan.

6.4.3 Risk trade-off

Operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences. There are no identified risk trade-offs over the coming 10 years anticipated from this Plan, with actions and expenditures to manage current risks shown in *Table 6.2: Critical Risks and Treatment Plans*.

7. FINANCIAL SUMMARY

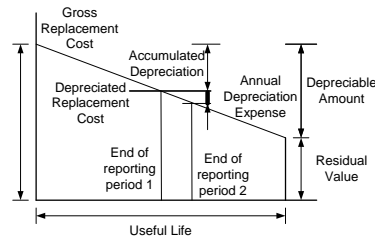
This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections are best estimates only and subject to improvement as further information becomes available on desired levels of service, funding availability, and current and projected future asset performance.

7.1 Financial Statements and Projections

7.1.1 Asset valuations

The best available estimate of the value of Transport assets included in this Asset Management Plan are shown below. Assets are valued at Fair Value, with the following values applicable at 30 June 2018 (to nearest \$1000):

Gross Replacement Cost	\$251,676,000
Depreciable Amount	\$251,676,000
Depreciated Replacement Cost ⁹	\$173,410,000
Annual Average Asset Consumption	\$6,439,000.



7.1.1 Sustainability of service delivery

Two key indicators for service delivery sustainability used for analysis of services provided by this asset category are the:

- asset renewal funding ratio, and
- medium term budgeted expenditures/projected expenditure (over 10 years of the planning period).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio¹⁰: % N.A. (Available Renewal Funding for Transport assets to be confirmed in the LTFF)

The Asset Renewal Funding Ratio is the most important indicator and indicates what % of the funds required for the optimal renewal and replacement of Transport assets over the next 10 years will be available within the LTFF budget. The benchmark or target is to have the renewal funding requirement 100% funded within the LTFF allowing optimal renewal of assets.

Medium term projected expenditures - 10 year financial planning period

This asset management plan identifies the projected operations, maintenance and capital renewal expenditures 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.

These projected expenditures may be compared to budgeted expenditures in the 10 year period to identify any funding shortfall.

The projected operations, maintenance and capital renewal expenditure required over the 10 year planning period is \$4,340,000 on average per year. This projected funding requirement excludes upgrade/new assets.

Estimated available operations, maintenance and capital renewal funding is to be confirmed within the Long Term Financial Forecasting process which will take into consideration funding demands across the organisation, including projected requirements from Building, Water and Sewer assets.

⁹ Also reported as Written Down Value, Carrying or Net Book Value.

¹⁰ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Providing services from infrastructure in a sustainable manner requires the matching and managing of service levels, risks, projected expenditures 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 Forecast.

7.1.2 Projected expenditures for Long Term Financial Forecast

Table 7.1.2 shows the projected expenditures for the 10 year Long Term Financial Forecast.

Expenditure projections are in 2018-19 real values.

Table 7.1.2: Projected Expenditures for Long Term Financial Forecast (\$000)

Year	Operations (\$000)	Maintenance (\$000)	Projected Capital Renewal (\$000)	Projected Capital Upgrade/ New (\$000)	Disposals (\$000)
2019	\$579	\$1,298	\$1,401	\$6,464	\$0
2020	\$579	\$1,298	\$4,978	\$6,720	\$0
2021	\$579	\$1,298	\$1,609	\$6,940	\$0
2022	\$579	\$1,298	\$2,709	\$6,770	\$0
2023	\$579	\$1,298	\$1,656	\$19,482	\$0
2024	\$579	\$1,298	\$2,167	\$5,531	\$0
2025	\$579	\$1,298	\$4,089	\$3,664	\$0
2026	\$579	\$1,298	\$1,081	\$3,448	\$0
2027	\$579	\$1,298	\$2,831	\$2,516	\$0
2028	\$579	\$1,298	\$2,113	\$3,469	\$0

7.2 Funding Strategy

Funding for assets is provided within the annual budget with funding amounts linked to projections within the Long Term Financial Forecast and as verified/ reviewed annually. The financial strategy of the Council determines how funding will be provided, whereas the asset management plan communicates renewal requirements along with the service and risk consequences of not fully funding these requirements.

As outlined in section 5.3.2 *Summary of future renewal and replacement expenditure*, Council should note the following two major factors influencing Transport renewal funding when formulating the funding strategy within the Long Term Financial Forecast:

- (a) Cook Shire Council is responsible for managing 533km of link roads to indigenous communities including the Mein Batavia/ Moreton Bramwell/ Bamaga Roads, Aurukun Road, Portland Roads/ Iron Range Roads, Musgrave Strathgordon Road, and Bloomfield Road. Council is currently funded for new and upgrade works on these roads through ATSI-TIDS funding but remains responsible for renewal works such as reseals. With a total of 155km of these link roads currently sealed (2019), and a corresponding sealed area of 1,158,184 m², the average annual resealing (renewal) cost is approx. \$695,000 per annum (based on \$9/m² reseal cost and a 15 year useful life). The *Projected 10-year Renewal/ Replacement & Upgrade / New Capital Works Program* (Appendix A) that forms the basis of the projected capital renewal expenditure shown in Fig. 3, includes a total value of \$10,280,535 over the 10 years for resealing of indigenous community link roads, or an average \$1,028,054 per annum.

As these community link roads are progressively sealed so will the annual average renewal cost, with an ultimate resealing renewal liability of approx. \$2,400,000 per annum when these roads are 100% sealed. The current and ultimate costs for renewal works on these roads is unsustainable for Cook Shire Council.

It is recommended that Cook Shire's funding strategy in the Transport area include strongly advocating that the State take on full responsibility of **100% funding both renewal and new/ upgrade works on all community link roads** (refer to *Table 4.4 Demand Management Plan Summary*).

- (b) The renewal expenditure projection is based on Disaster Recovery Funding Arrangements (DRFA) continuing to restore and rehabilitate Council's transport network on an annual basis, and in effect (due to annual occurrence) fund **100% of renewal works in the unsealed pavement (gravel) road category**. The current Road Register (2019) details that Council manages 2,165 km of unsealed pavement (gravel) roads with a pavement area of approx. *14,050,000 m².

Cardno (Qld) Pty Ltd valued this unsealed pavement (2018) at \$5.20/ m² for the short life component (15 year useful life) and \$3.47/ m² for the long life component (45 year useful life), giving an average annual depreciation value of \$0.4238/ m² for unsealed pavement. This equates to an annual depreciation value of approx. \$5,954,000 for unsealed pavement (gravel) roads. This is the major component of the Transport portfolio's renewal liability/ depreciation expense.

** Note: The unsealed pavement area from the current Road Register does not reconcile with Cardno's asset register. This requires review, refer Table 8.1: Improvement Plan Task No 7 'Undertake a full transport asset revaluation based on Council's GIS system as being the source of truth, ensuring the GIS system is fully updated with data generated from asset data recollection completed as part of this Plan (2019).*

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, as well as the need for future renewal. Additional assets will also add to future depreciation forecasts.

7.4 Key Assumptions Made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this asset management plan. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this asset management plan are:

- Budget funding of projected renewal and upgrade/ new requirements are to be considered within the formulation of the Long Term Financial Forecast. The availability of budget funds is heavily dependent on continuation of grant funding streams such as Roads to Recovery, Transport Infrastructure Development Scheme (TIDS), Aboriginal & Torres Strait Islander – TIDS (ATSI-TIDS); and success in winning targeted grant funding opportunities for developments such as the Charlotte Street Revitalisation project and Cooktown Airport runway upgrade to Code 3C.
- Disaster Recovery Funding Arrangements (DRFA) continue to restore and rehabilitate Council's transport network on an annual basis, and in effect (due to annual occurrence) fund 100% of renewal works in the unsealed pavement (gravel) road category.
- Operational and maintenance expenditure remains static as shown in *Table 7.1.2* and *Appendix B: Long Term Budgeted Expenditures Accommodated in AM Plan*. However, operational and maintenance expenditure is forecast to rise steadily with the addition of new/ upgrade transport assets (refer *Figure 2: Projected Operations and Maintenance Expenditure*).
- The 10 year capital works program for renewal/ replacement and new/ upgrade is reliable, and is a reliable indication of average expenditure on capital works in years 10-20, noting that planning for major Transport works like the staged Charlotte Street Revitalisation project, the Cooktown Airport runway upgrade to Code 3C, and the planned new Cooktown 4 Mile Hill Waste Transfer Station are all in a preliminary or detailed planning/ scheduling phase.

7.5 Forecast Reliability and Confidence

The expenditure and valuation projections in this AM Plan are based on best available data. Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale¹¹ in accordance with Table 7.5.

Table 7.5: Data Confidence Grading System

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 reliability of data used in this AM Plan is estimated as 'B Reliable', with a recollection of asset inventory and asset condition completed for bridges, major culverts, causeways, pathways, kerb and channel, and airport runways as part of this AM Plan compilation. In addition there was a concerted effort in 2017-18 to formulate a reliable Road Asset Register within Council's GIS system, which has been reviewed and validated as part of this AM Plan. The dataset inventory within the roads, bridges, major culverts, and causeways categories is considered to be complete with an estimated accuracy of $\pm 5\%$.

¹¹ IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

8. PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices¹²

8.1.1 Accounting and financial data sources

Council uses Authority as its financial management system with annual reporting in the Transport area informed by periodic asset revaluations, the most recent being 'Valuation of Roads and Drainage Assets: 26 June 2018' prepared for Cook Shire Council by Cardno (QLD) Pty Ltd.

8.1.2 Asset management data sources

Asset management data for this AM Plan has been generated from in-field inspections and assessments of bridges, major culverts, causeway, kerb and channel, and pathway assets, and review of the current Road Register data set and airport pavement/ sealed surface data set. In-field work was completed between August 2018 and May 2019 and consisted of inventory verification and enquiry, photos and co-ordinates to clearly identify bridges, major culverts and causeways, and in-field recollection and GIS update for Kerb & Channel and Pathway assets. The recollection of asset data with accompanying travel over a good proportion of Cook Shire's road network and inspection of Council's airports, has provided a broad overview of the nature and condition of Council's Transport assets and has informed commentary in this Plan.

8.2 Improvement Plan

The asset management improvement plan generated from this asset management plan is shown in Table 8.1.

Table 8.1: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1	Undertake annual condition and defect inspections to the Roads, Bridges and Major Culverts network; 2-yearly (max) condition/ defect inspections to the Pathway network; and 4 yearly (max) engineering assessments to Cooktown and Coen Airports – to inform maintenance and renewal works programs.	Mgr Assets, DRFA Assessment Co-ordinator	Staff Time,	2020 & on-going
2	Review CRM systems and implement: (a) collection of customer service requests related to the different Transport network categories, and (b) formulation and adoption of response and inspection timeframes for requests.	Dir OBS, Mgr Assets	Staff Time	2019-2020
3	Review and revise: 1. Renewal; and 2. upgrade/ new; works programs in this Plan in accord with data from Task 1; Particularly in consideration of on-going planning for: 1. Charlotte St Revitalisation; 2. Cooktown Airport runway and taxiway/ apron upgrade; 3. Pathway works to high-use routes Shire-wide; and 4. proposed Cooktown 4 Mile Hill waste transfer station development.	Mgr Assets	Staff Time	2020-2021 & on-going annually
4	Compile and review annual scheduled maintenance programs from Task 1 data.	Mgr Engineering, Shire Overseer, Mgr Assets	Staff Time	2020-2021 & on-going annually

¹² ISO 55000 Refers to this the Asset Management System

Table 8.1: Improvement Plan (Cont.)

Task No	Task	Responsibility	Resources Required	Timeline
5	Formulate and implement a coordinated process to ensure Transport asset additions and disposals are recorded, registers and GIS systems are updated with all existing and new asset data (including GIS polygon data for airport runways/ taxiways/ aprons), and all relevant staff are fully informed of the update process.	Mgr Assets	Staff Time	2020-2021
6	Provide an integrated approach to Transport asset revaluations to ensure the Civil Works team, Mgr Assets and Mgr Finance have input into the process.	Mgr Assets, Mgr Finance	Staff Time	2020-2021
7	Undertake a full Transport asset revaluation based on Councils GIS system as being the source of truth, ensuring the GIS system is fully updated with data generated from asset data recollection completed as part of this Plan (2019).	Mgr Assets	Staff Time	2020-21
8	Complete: 1. Road Asset hierarchy categorisation and incorporate into the Road Register/ GIS system, 2. Incorporation and update of Traffic Count Data within the Road Register/ GIS system.	Mgr Assets	Staff Time	2019-20

8.3 Monitoring and Review Procedures

This asset management plan will be reviewed during annual budget planning processes and, if applicable, may be amended to show any material changes in service levels and/or resources available to provide those services as a result of budget decisions.

The AM Plan will be reviewed annually in terms of current service level; asset values; projected operations, maintenance, capital renewal/ replacement, capital upgrade/new, and asset disposal expenditures; with projected expenditure values incorporated into the Long Term Financial Forecast.

The AM Plan has a life of 4 years and is due for complete revision and updating within 3 years of each Council election.

8.4 Performance Measures

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

- The degree to which the required projected expenditures identified in this asset management plan are incorporated into the Long Term Financial Forecast,
- The degree to which 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 (what we cannot do), risks and residual risks are incorporated into strategic planning and associated plans,
- The Asset Renewal Funding Ratio achieving the target of 1.0.

9. REFERENCES

- 'Cook Shire Council Corporate Plan 2017-2022', Cook Shire Council
- 'Cook Shire Community Plan 2011-21', Cook Shire Council
- 'Cook Shire Council Economic Plan 2016-2020', Cook Shire Council
- 'Cook Shire Council 2017-2018 Annual Report', Cook Shire Council
- 'Infrastructure Services: Road and Bridge Funding Framework: 21 January 2019', Cook Shire Council, PowerPoint presentation 2019
- 'Charlotte Street Revitalisation Cooktown Community Feedback Summary and Final Concept Plans', Cook Shire Council, 2018
- 'Strategy Report Cooktown Cycle Route' Prepared for DTMR and Cook Shire Council by Point 8, 2017
- 'Development Masterplan 2016 Cooktown Airport', Prepared for Cook Shire Council by Aviation Projects
- 'Cooktown Airport (YCKN) Pavement Life Assessment & Options Report' Prepared for Cook Shire Council Feb 2019 by Airport Consultancy Group P/L
- 'Northern Horizons-Unleashing Our Tourism Potential' Joint Standing Committee on Northern Australia, June 2018
- 'Cooktown Botanic Gardens and Gallop Botanic Reserve Masterplan 2018-2028', John Harper Landscape Designs, 2018
- 'Cook Shire Council Masterplan Design (Cooktown Depot)' Prepared for Cook Shire Council by UDP
- 'Cooktown Waste Transfer Station and Multi-Use Depot – Concept Master Plan (Draft)', AECOM, 2019
- 'Valuation of Roads and Drainage Assets: 26 June 2018, prepared for Cook Shire Council by Cardno (QLD) Pty Ltd
- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney
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- IPWEA, 2012 'LTFF Practice Note 6 PN Long Term Financial Forecast', Institute of Public Works Engineering Australasia, Sydney.

10. APPENDICES

Appendix A: Projected 10 year Renewal/ Replacement & Upgrade/ New Capital Works Program

Appendix B: Long Term Budgeted Expenditures Accommodated in AM Plan

Appendix A: Projected 10-year Renewal/Replacement & Upgrade/ New Capital Works Program

SUMMARY: PROJECTED 10-YEAR RENEWAL/ REPLACEMENT AND UPGRADE/ NEW CAPITAL WORKS PROGRAM (Cont.)														
RENEWAL														
Bridges/Cul/C'ways/ Dr	5,655,055	840,001	2,000,002	410,003	670,004	250,005	380,006	180,007	245,008	410,009	270,010			
Roads	16,069,115	445,933	2,523,063	963,915	1,374,127	1,405,787	1,687,426	3,409,448	735,698	1,930,525	1,593,194			
Airports	2,410,000	115,000	355,000	235,000	565,000	0	0	500,000	0	490,000	150,000			
Pathways	500,000	0	100,000	0	100,000	0	100,000	0	100,000	0	100,000			
	24,634,170	Total												
	2,463,417	Av/ Yr												
UPGRADE/ NEW														
Bridges/Cul/C'ways/ Dr	2,450,000	370,000	470,000	480,000	650,000	350,000	0	30,000	100,000	0	0			
Roads	39,815,055	5,025,001	5,750,002	5,620,003	5,320,004	3,100,005	4,600,006	3,100,007	3,100,008	2,100,009	2,100,010			
Airports	15,500,000	100,000	400,000	0	0	15,000,000	0	0	0	0	0			
Pathways	7,239,000	969,000	100,000	840,000	800,000	1,032,000	931,000	534,000	248,000	416,000	1,369,000			
Total:	65,004,055	Total												
	6,500,406	Av/ Yr												
YEARLY TOTALS:														
	7,864,935	11,698,067	8,548,921	9,479,135	21,137,797	7,698,438	7,753,462	4,528,714	5,346,543	5,582,214				

PROJECTED 10-YEAR RENEWAL/ REPLACEMENT AND UPGRADE/ NEW CAPITAL WORKS PROGRAM													
Project Asset Category	Location	Project Scope	Budget Yr 1-10 Totals \$	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029
Bridges/Culverts/ Causeways/ Drainage		RENEWAL											
Design/ Scoping	Various Projects - TBC yearly	Project Scoping-Treat as Renewal	450,000		50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Bridge/ Major Culvert/ Minor Culvert/	Jensens Crossing Rd - Jensens Crossing Bridge (staged over 2 Yrs)	Replace timber bridge with Concrete (1 lane) - Treat as 100% Renewal (modern version of timber bridge which can't be reproduced)	1,400,000	200,000	1,200,000		540,000						
	Bloomfield Rd - Plantation Ck Bridge	Replacement of broken part of ply deck only	20,000	20,000									
	Portland Roads Rd - 7 x Bridges	Review & replacement of five grid decks up to 16 x 4.5m (others nom. 6m spans) & two ply decks 6m spans - Scoping / Design required including approaches and guardrailling (eliminate spearing hazards)	540,000				540,000						
	Portland Rds - Dirty Water Bridge	Replace 36 of 50x50 s/s deck & 2 of 100x50 r/s kerbs	30,000	30,000									
	Musgrave Strathgordon Rd - King River Bridge	Rust removal and painting/ rust proofing of steel structure	80,000		80,000								
	Lakefield Rd - 1. Lex White Bridge, and 2. Sandy Ck Bridge	Rust removal and painting/ rust proofing of 2 x steel bridge structure	200,000		200,000								
	Shipton Flat Rd - 'Twin bridges' Amanan R./ Parrot Ck	Steel girders under concrete deck require paint/maintenance/ replacement	50,000			50,000							
	Lakefield Rd - Lex White Bridge	Deck replacement/ other	140,000										140,000
	Kennedy River	4.3m wide 36m long	140,000										
	Kimba Road - Pat Calaghan Bridge, St George River	Replacement of deck (link slab) - 4 x 9m spans x 4.3m wide	140,000									140,000	
	Battlecamp Rd - Remediate 1x1800 dia Corr Steel Culvert	1 x 1800mm corr steel Loosing plastic coating - construct reinf. consider conc render repair	35,000								35,000		
	Musgrave Strathgordon Rd - Coleman River Culvert	Culvert floor requires stabilisation	20,000	20,000									
	Orchid Ck Rd - Replace 4 x Major Culverts Nos #2, #4, #5, #7	Replace 4x end of life corr steel culverts (each culvert 1 x 1200 dia) with concrete pipes/ culverts with concrete pipes/ culverts and headwalls	340,000	340,000									
	Orchid Ck Rd - Replace Major Culvert No #3	Replace end of life corr steel culvert (3 x 1200 dia) with concrete pipes/ culverts and headwalls	160,000	160,000									
	Solander Rd - Replace Major Culvert #2	Replace end of life corr steel culvert (1 x 1200 dia) with concrete pipes/ culverts and headwalls	70,000	70,000									
	Battlecamp Rd - Replace 1x1800 dia Corr Steel Culvert	Replace end of life corr steel culvert (1 x 1800 dia) with concrete pipes/ culverts and headwalls	90,000		90,000								
	Cameron Ck Road - Replace Culvert #2	Replace end of life corr steel culvert (1 x 1800 dia) with concrete pipes/ culverts and headwalls	120,000		120,000								
	TBC - Minor Culvert Replacements	Shire-wide minor culvert replacement estimate	720,000		80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
	Battlecamp Rd - Normamby R. Causeway	Downstream protection plus 200mm RC overlay to current link slabs 70m x 5m	200,000			200,000							
	Battlecamp Rd - Wenlock R. Causeway	Downstream protection plus 200mm RC overlay to current link slabs 50m x 5m (plus extension?)	180,000		180,000								
	Kimba Rd - Kennedy Ck Causeway	Culverts + causeway - place cap to causeway 50 x 4m = 200m ²	120,000					120,000					
	Drumduff Rd - Palmer River Causeway	Causeway, est. 300m long with 70m x 6m wide remainder 3m wide - Concrete overlay of 70m x 6m =	250,000						250,000				
	Battlecamp Road - Little Laura Causeway	Concrete overlay Causeway of 40m x 6m = 240m ²	140,000									140,000	

PROJECTED 10-YEAR RENEWAL/ REPLACEMENT AND UPGRADE/ NEW CAPITAL WORKS PROGRAM (Cont.)													
Project Asset Category	Location	Project Scope	Budget Yr-1-10 Totals \$	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029
Bridges/Culverts/ Causeways/ Drainage		RENEWAL (Cont.)											
	Finch Bay Rd Cooktown - Causeway	Replace delapidated causeway over 2 of 750wx300h RCBCs; 8mx5m = 40m ²	30,000			30,000							
	Weary Bay Rd - Causeway #1	Replace [patched] causeway (invert only) 9mx6m =	50,000						50,000				
	Cameron Ck Rd - Causeway Ch 5.7km	Replace Low use causeway & 2 of 450dia low flow pipes under; 34mx3m = 102m ²	80,000							80,000			
		Totals:	5,655,000	840,001	2,000,002	410,003	670,004	250,005	380,006	180,007	245,008	410,009	270,010
Bridges/Culverts/ Causeways/ Drainage		UPGRADE/ NEW											
	Musgrave Strathgordon Road	Extend Lukin River & Coleman River causeways, drainage repair works to Coleman River culvert; Replace Glen Garland range culvert	370,000	370,000									
	Mungumby Rd - un-named drainage line Major Culvert	Installation of a RCBC 2100 x 2100mm at big dip	200,000					200,000					
	Fairview Palmerville Road - St George River Causeway	New Causeway - Gabions with concrete slab on top same level 100m x 4m = 400m ²	350,000		350,000								
	Kimba Gamboola Rd - Palmer River Causeway Strathleven	New Causeway to be scoped 2019 - Allow 200m x 5m = 1,000m ² ; Strathleven may contribute capital	600,000				600,000						
Rural Drainage - Upgrade/New													
	Cameron Creek Rd - either side of Cameron Ck Rd Arch Culvert	Installation of 4 x culverts 2 each side of new Cameron Ck Rd Arch culvert: 1&2 = 600 x 1200 RCBC; 3&4 = 900 x	160,000	160,000									
	Oakey Creek Rd - 6 x Drainage	Installation of 6 pipe culverts at 6 x drainage lines	250,000	250,000									
	Dixie Rd - 3 x Drainage Lines	Installation of 3 x 900 RCPs at 3 x drainage lines	70,000					70,000					
	Welcome Road - 2 x Drainage	Install two separate 900mm diam. RCP + causeway 15m	100,000		100,000								
	Ayton Boat Ramp Access Rd - Drainage Line	Install additional 900 diam. RCP under access rd (1 x existing)	30,000						30,000				
Urban Drainage - Upgrade/New													
	Cooktown Hope St near 'Hill crest'	New pit to existing pipe fed by new 80m of kerb & gutter; design required - Footpath long term plan / location to be aware of	50,000				50,000						
	Cooktown Harrigan St / round about / Cooktown Hardware/ Charlotte St	Opening up roundabout drain, install new pits & pipes - clean out existing RCBC drain - reconstruction road section - requires overall design review with round about intersection included (include in Charlotte St	80,000					80,000					
	Cooktown Adelaide St	Low-flow pipe and pathway route required to existing Concrete causeway	30,000			30,000							
	Cooktown Power St (Howard St- Boundary St)	Installation of new 900mm diam. RCP at drainage line	40,000		40,000								
	Lakeland Back St/ Anderson St	Drain along Back St/ Sesame St from School crossing - review design for construction	100,000								100,000		
	Coen Regent St	Replace grated pit with raised postbox pit	20,000		20,000								
	Cooktown Hill St/ Flinders St	(Considered as part of road reconstruction Flinders /	0										
		Totals:	2,450,000	370,000	470,000	480,000	650,000	350,000	0	30,000	100,000	0	0

PROJECTED 10-YEAR RENEWAL/ REPLACEMENT AND UPGRADE/ NEW CAPITAL WORKS PROGRAM (Cont.)													
Project Asset Category	Location	Project Scope	Budget Yr. 1-10 Totals \$	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029
				1	2	3	4	5	6	7	8	9	10
		RENEWAL											
Rural Roads - AT&T	Reseals:-												
AT&T-TIDS	Bloomfield Road	Reseals per program - based on 15 year UL & \$9/m2	1,828,517		201,623		111,240	285,062	382,388	187,718	305,910	243,338	111,240
	Musgrave Strathgordon (Pormpuraaw) Road	Reseals per program - based on 15 year UL & \$9/m2	2,459,795		921,438					753,188			785,169
	Portland Roads Road	Reseals per program - based on 15 year UL & \$9/m2	969,179			192,816			702,203	74,160			
	Northern Peninsula Road	Reseals per program - based on 15 year UL & \$9/m2	1,782,312			271,096				952,544			558,672
	Aurukun Road	Reseal 6.1km length 2019-20/2020-21 as part of RTAW cont.	385,632	385,632									
	Main Batavia - Bamaga Rd	Reseals per program - based on 15 year UL & \$9/m2	2,005,101				304,983			941,832	129,780	628,506	
	Sealed Pavement Rehabilitation:-												
	Bloomfield Road - Whyalla Flats	1 km section needs reconstruction / stabilisation	600,000		600,000								
	Bloomfield Road - Daveys Hill	Recap concrete track - 120m x 8m = 960m2	250,000				250,000						
	Gravel Road Resheeting &												
		Nil works, gravel roads maintained and remediated with annual Flood Damage works	0	0	0	0	0	0	0	0	0	0	0
Rural Local	Reseals:-												
	Reseals to CSC local roads	Reseals program tbc - based on 15 year UL & \$9/m2	2,000,000	0	0	500,000		500,000		500,000		500,000	0
	Port Stewart Road	Reseals per program - based on 15 year UL & \$9/m2	90,720					90,720					
	Battlecamp Road	Reseals per program - based on 15 year UL & \$9/m2	724,605						277,830				446,775
	Sealed Pavement Rehabilitation:-												
	Poison Creek Road	Pavement rehab. from Endeavour Valley Road 1-2 km	900,000				900,000						
	Gravel Road Resheeting &												
		Nil works, gravel roads maintained and remediated with annual Flood Damage works	0	0	0	0	0	0	0	0	0	0	0
Urban Local Roads	Reseals:-												
	Cooktown: Buhman St (top end), Adams St, Boundary St (Charlotte-Adelaide), Chase Ct, Emma Ct, Hope St, Hutchinson St, Ida St, Kimberley St, MacMillan St, Neil Ct, Savage St & Seagreen St. Marston: Banks Close, Ratcliffe Rd & Slaughteryard Rd.	Preparation work including fixing potholes, Resealing and linemarkings. Total reseal area: 43,000m2	500,000		500,000								
	Cooktown: Annos St, Kerr St, Mason St, May St (Howard-Hogg), Ann St, Annan Rd, Baird Rd, Boundary St (Hope-May), Garden St (Walker-Hogg), Walker St (Adelaide-Charlotte) Marston: Poison Creek Rd, Starke St, Brown St, Ironwood Av.	Preparation work including fixing potholes, Resealing and linemarkings. Total reseal area: 25,000m2	280,000				280,000						
	Cooktown: Kerr St (North to K&C), Walse Ct Marston: Minke Rd, McIvor Rd (EVR-Hopeville), Starke St, Ayton: Third St	Preparation work including fixing potholes, Resealing and linemarkings. Total reseal area: 25,000m2	300,000								300,000		

PROJECTED 10-YEAR RENEWAL/ REPLACEMENT AND UPGRADE/ NEW CAPITAL WORKS PROGRAM (Cont.)													
Project Asset Category	Location	Project Scope	Budget Yr 1-10 Totals \$	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029
	Roads	RENEWAL (Cont.)											
	Boundary St(Adelaide-Depot), Mason St, Quarantine Bay Rd (Ch 2.65-End), Schwartz St	Preparation work including fixing potholes, Resealing and linemarkings. Area: 20000m2	250,000										
	Mc Ivor Road (EVR-Hopeville)	Preparation work including fixing potholes, Resealing and linemarkings. Length: 3.9km	325,000						325,000				
	<i>Sealed Pavement Rehabilitation:-</i>												
	May Street (Furneaux-North end)	Drainage, Pavement work and bitumen sealing. Length 270m	300,000		300,000								
	<i>Gravel Road Resheeting &</i>												
	<i>Kerb & Channel:-</i>												
	Cooktown Endeavour Valley Rd	Replace 79m K&C cond. 4 near Ferrari St intersction Mobil SS/ Tuxworths	23,700				23,700						
	Cooktown Furneaux St	Replace 114m K&C cond. 4 cnr May St & cnr Hope Sts	34,200				34,200						
	Coen Armbrust St	Replace 99m K&C cond. 4	29,700	29,700									
	Coen Shephard St	Replace 102m K&C cond. 4	30,600	30,600									
	Cooktown Hogg St	Restore 355m stone Heritage K&C along Hogg St; Helen-Hope-Charlotte 196m, Charlotte-Adelaide 103m: Complete as part of future street rehab./ reconstruction	0										
	<i>Carparks:-</i>	Nil works forecast	0										
		Totals:	16,069,115	445,933	2,523,063	963,915	1,374,127	1,405,787	1,687,426	3,409,448	735,698	1,930,525	1,593,194
	Roads	UPGRADE/ NEW											
Rural Roads - ATSI Rds	Reconstruct & Seal Gravel Rds:-												
	Musgrave Strathgordon Road	4km new seal (\$1.5m) + three causeways (\$500k) =	5,100,000		2,100,000			1,500,000		1,500,000			
	Aurukun Road	Part ext. of Sealed road from PDR to Aurukun Shire bdry	3,000,000	1,500,000							1,500,000		
	Bloomfield Road	Road Sealing/ drainage to section of Road - Scope TBC	1,500,000			1,500,000							
	Mein batavia - Bamaqa Road	Road Sealing/ drainage to section of Road - Scope TBC	3,000,000				1,500,000					1,500,000	
	Portland Rds Road	Road Sealing/ drainage to section of Road - Scope TBC	3,000,000						1,500,000				1,500,000
Local CSC Roads	Reconstruct & Seal Gravel Rds:-												
	Poison Ck Road	Road reconstruction & sealing 3.4km gravel section	1,400,000	1,400,000									
	Oakey Ck Road	Road recon. & sealing approx. 1km long from EV Rd	800,000	800,000									
	Poison Ck Road, Railway Av, Battlecamp Road, other	Road Sealing/ drainage to section of Road - Scope TBC	5,400,000		600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
	Cooktown Airport	Upgrade Airport Access Road	1,100,000		1,100,000								
Urban CSC Roads	Reconstruct & Seal Gravel Rds:-												
	Cooktown - Savage St	330m Between Mason and Harrigan Sts,	800,000	800,000									
	Rossville - Weary Bay Esplanade	420m	420,000		420,000								
	Cooktown - May St	Reconstruct & seal Furneaux St to north end 270m	400,000				400,000						
	Cooktown - Flinders St	Reconstruct Flinders St/ drainage/ K&C	1,000,000						1,000,000				
	Cooktown - Macmillan St + Waste Transfer Station	Reconstruct & seal extension to Macmillan St and internam roads/ earthworks	3,000,000			1,500,000	1,500,000						

PROJECTED 10-YEAR RENEWAL/ REPLACEMENT AND UPGRADE/ NEW CAPITAL WORKS PROGRAM (Cont.)													
Project Asset Category	Location	Project Scope	Budget Yr 1-10 Totals \$	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029
	Roads	UPGRADE/ NEW (Cont.)											
	<i>Charlotte St Revitalisation:-</i>												
	Charlotte St (SeaView-Webber Esp)	Includes separated grade service road, retaining structure, car parking & boat trailer parking, roundabout, pavement, asphalt surfacing, other, as shown in Sheets 8-9 Concept Plan (app. 350m)	3,200,000		1,600,000	1,600,000							
	Charlotte St (Furneaux St to Banks St)	Retaining wall, Realigning work, Car park, Pavement work and Asphalt surfacing. Length 325m	1,320,000				1,320,000						
	Charlotte St (Hogg St to Furneaux St)		1,500,000					1,500,000					
	Charlotte St (Harrigan St/ rab area to Hogg St)	Reconstruction work including redesigning, widening, drainage improvement, pavement & Asphalt work	2,000,000						1,000,000	1,000,000			
	Cooktown - Sherrin Esplanade	Reconstruct to Charlotte St Revit detailed design 2019	1,000,000					1,000,000					
	<i>Kerb & Channel:-</i>		0										
	<i>Carparks:-</i>												
	Cooktown Botanic Gardens	Car park upgrade & turnaround	525,000	525,000									
	Cooktown Airport	Construct fenced paid car-parking area	350,000		350,000								
		Totals:	39,815,000	5,025,001	5,750,002	5,620,003	5,320,004	3,100,005	4,600,006	3,100,007	3,100,008	2,100,009	2,100,010
	Airports	RENEWAL											
	<i>Cooktown Airport:-</i>												
	Inspection (ACG)		15,000	15,000									
	Reseal/ Sand seal treatment to full runway extents and RPT Apron		340,000		340,000								
	Inspection (ACG)		15,000		15,000								
	Design to reconstruct apron in view of master plan footp		200,000		200,000								
	Inspection (ACG)		15,000		15,000								
	Reconstruct current end of life RPT apron		550,000			550,000							
	Inspection (ACG)		15,000			15,000							
	Reseal/ 10mm C170 single coat reseal treatment to full runway extents		490,000								490,000		
	Reseal/ Sand seal treatment to full extents GA Apron		150,000										150,000
	Pavement Life Inspection & Options Report		20,000			20,000							
	Reseal/ Sand seal treatment to full runway extents & Apron		500,000							500,000			
	<i>Laura Airport:-</i>												
	Reseal ex. Sealed 50% length runway		100,000	100,000									
			2,410,000	1,115,000	355,000	235,000	565,000	0	0	500,000	0	490,000	150,000
		Totals:											
	Airports	UPGRADE/ NEW											
	<i>Cooktown Airport:-</i>												
	Masterplanning/ design for Code 3C runway (part of grant funding)		400,000		400,000								
	Upgrade Runway to Code 3C with offset land purchase to enable upgrade without moving Endeavour Valley Rd		15,000,000				15,000,000						
	<i>Coen Airport:-</i>												
	Nil runway/ apron upgrade/ new works forecast		0										
	<i>Laura Airport:-</i>												
	Grade gravel pavement & seal remaining 50% length		100,000	100,000									
			15,500,000	100,000	400,000	0	0	15,000,000	0	0	0	0	0
		Totals:											

PROJECTED 10-YEAR RENEWAL/ REPLACEMENT AND UPGRADE/ NEW CAPITAL WORKS PROGRAM (Cont.)													
Project Asset Category	Location	Project Scope	Budget Yr 1-10 Totals \$	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029
	Pathways	RENEWAL											
		Renew outside Sovereign Hotel & then As prioritised (tbc), PLUS renew Charlotte St footpaths as part of Charlotte St Revitalisation/ ST Reconstruction	500,000	0	100,000		100,000		100,000		100,000		100,000
		Totals:	500,000	0	100,000	0	100,000	0	100,000	0	100,000	0	100,000
	Pathways	UPGRADE/ NEW											
	<i>Cooktown Pathways:-</i>												
	Cooktown Botanic Gardens	Gravel pathways upgrade to concrete/ accessible	569,000	569,000									
	Charlotte St	2 Mile Ck shared path bridge and pathway from cemetery	400,000	400,000									
	rab-Adelaide St-Sherrin Esp	3m shared path from Webber Esplanade Foreshore Park to Charlotte St Roundabout, approx. 2300m	1,400,000		700,000	700,000							
	Charlotte St-Webber Esp		1,032,000					1,032,000					
	Racecourse Road and Hope St	3m shared path	851,000						851,000				
	Howard St	3m shared path	534,000						534,000				
	Hope St and Green St	3m shared path	188,000							188,000			
	Charles St	3m shared path	316,000								316,000		
	Boundary St	3m shared path	1,369,000										1,369,000
	Endeavour Valley Road	3m shared path											
	<i>Lakeland Pathways:-</i>												
	Mulligan Hwy/ PDR/ Lakeland Sts	Scope tbc - Link to school & new recreation reserve	160,000		80,000				80,000				
	<i>Laura Pathways:-</i>												
	Deighton Rd	Extend Laura linking path to school & public bar	100,000		100,000								
	<i>Coen Pathways:-</i>												
	Taylor St, Shephard St	Extend pathway to recreation reserve & then ex. Network	200,000			100,000						100,000	
	<i>Rossville & Aytton Pathways:-</i>												
	Rossville/ Aytton Sts	Pathway extension, scope TBC	120,000		60,000	60,000					60,000		
		Totals:	7,239,000	969,000	100,000	840,000	800,000	1,032,000	931,000	534,000	248,000	416,000	1,369,000

Appendix B: Long Term Budgeted Expenditures Accommodated in AM Plan

NAMS.PLUS3 Asset Management Cook SC <small>© Copyright. All rights reserved. The Institute of Public Works Engineering Australia is a member of IPWEA ENGINEERING AUSTRALIA</small>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Transport (financial yr ending) 2019 Asset values at start of planning period Current replacement cost: \$251,676 (000) Depreciable amount: \$78,266 (000) Depreciated replacement cost: \$173,410 (000) Annual depreciation expense: \$6,439 (000) Calc CRC from Asset Register: \$0 (000) This is a check for you.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Planned Expenditures from LTFP Note: Enter all values in current 2019 values Operations and Maintenance Costs for New Assets: Additional operations costs: 0.23% % of asset value Additional maintenance: 0.52% Planned renewal budget (information only): 8.23% You may use these values calculated from your data or overwrite the links.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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<td>Management budget</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> <td>\$439</td> </tr> <tr> <td>AM systems budget</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> <tr> <td>Total operations</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> <td>\$579</td> 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Capital Renewal from Forms 2A & 2B</td> <td>\$1,401</td> <td>\$4,278</td> <td>\$1,609</td> <td>\$2,709</td> <td>\$1,656</td> <td>\$2,167</td> <td>\$4,089</td> <td>\$1,081</td> <td>\$2,831</td> <td>\$2,113</td> <td>\$2,463</td> <td>\$2,463</td> <td>\$2,463</td> <td>\$2,463</td> <td>\$2,463</td> <td>\$2,463</td> <td>\$2,463</td> <td>\$2,463</td> <td>\$2,463</td> <td>\$2,463</td> <td>\$2,463</td> </tr> <tr> <td>Forecast Capital Upgrade from Form 2C</td> <td>\$6,464</td> <td>\$6,720</td> <td>\$6,940</td> <td>\$6,770</td> <td>\$19,482</td> <td>\$5,531</td> <td>\$3,664</td> <td>\$3,448</td> <td>\$2,516</td> <td>\$3,469</td> <td>\$6,500</td> <td>\$6,500</td> <td>\$6,500</td> <td>\$6,500</td> <td>\$6,500</td> <td>\$6,500</td> <td>\$6,500</td> <td>\$6,500</td> <td>\$6,500</td> <td>\$6,500</td> <td>\$6,500</td> </tr> </tbody> </table>												Financial year ending	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Operations																						Operations budget	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	Management budget	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	AM systems budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Total operations	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	Maintenance																							Reactive maintenance budget	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	Planned maintenance budget	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	\$649	Specific maintenance items budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Total maintenance	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	Capital																							Planned renewal budget	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	Planned upgrade/new budget	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	Non-growth contributed asset value	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Asset Disposals																							Est Cost to dispose of assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Carrying value (DRC) of disposed assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Additional Expenditure Outlays Requirements (e.g. from Infrastructure Risk Management Plan)																							Additional Expenditure Outlays required and not included above	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Maintenance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Capital Renewal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Capital Upgrade	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	User Comments #2	to be incorporated into Forms 2 & 2.1 (where Method.1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used)																				Average of first 10 years Expenditure Outlays from LTFP																							Operations	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	Management	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$439	AM systems	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Total operations	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	\$579	Maintenance	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	\$1,298	Capital	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	Average of first 10 years Expenditure Outlays required from 1RMP																							Additional Expenditure Outlays required and not included above	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Maintenance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Capital Renewal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Capital Upgrade	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	User Comments #2	to be incorporated into Forms 2 & 2.1 (where Method.1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used)																				Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)																							Forecast Capital Renewal from Forms 2A & 2B	\$1,401	\$4,278	\$1,609	\$2,709	\$1,656	\$2,167	\$4,089	\$1,081	\$2,831	\$2,113	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	Forecast Capital Upgrade from Form 2C	\$6,464	\$6,720	\$6,940	\$6,770	\$19,482	\$5,531	\$3,664	\$3,448	\$2,516	\$3,469	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500
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User Comments #2	to be incorporated into Forms 2 & 2.1 (where Method.1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Forecast Capital Renewal from Forms 2A & 2B	\$1,401	\$4,278	\$1,609	\$2,709	\$1,656	\$2,167	\$4,089	\$1,081	\$2,831	\$2,113	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463	\$2,463																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Forecast Capital Upgrade from Form 2C	\$6,464	\$6,720	\$6,940	\$6,770	\$19,482	\$5,531	\$3,664	\$3,448	\$2,516	\$3,469	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						