



Hinchinbrook Shire Council

Asset Management Plan- Transport

June 2023



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HINCHINBROOK
SHIRE COUNCIL



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Asset Management Plan- Transport
June 2023

Table of Contents

Abbreviations	4
Executive Summary	5
1 BACKGROUND	6
1.1 Purpose of the Plan	6
1.2 Council's Vision, Aims, Outcomes and Strategies	6
1.3 Key Stakeholders	7
1.4 Legislative Requirements	9
2 ASSET DESCRIPTION	10
2.1 Physical Parameters	10
2.2 Asset Valuations	10
2.3 Asset Registers	11
2.4 Asset Useful Life & Condition	11
2.5 Condition Profile	12
3 LEVELS OF SERVICE	13
3.1 Background	13
3.2 Sustainable Asset Base	19
3.3 Risk Management	19
4 FUTURE DEMANDS	21
5 WHOLE OF LIFECYCLE MANAGEMENT PLAN	22



5.1 Operations and Maintenance Expenditure (Opex)	22
5.1.1 Historical	22
5.1.2 Future	22
5.2 Capital Expenditure (Capex)	22
5.2.1 Historical	22
5.2.2 Forward Works Program	23
5.2.3 Future Capital Funding	23
5.3 Asset Sustainability Ratio	26
6 FINANCIAL SUMMARY	28
6.1 Summary Financial Projections	28
6.2 Future Valuations	29
6.3 Key Assumptions made in Financial Forecasts	30
7 IMPROVEMENT PROGRAM AND MONITORING	31
7.1 Improvement Program	31
7.2 Performance Measures	32
8 REFERENCES	32
APPENDICES	33
Appendix A: Definitions	34
Appendix B: Summary of Forecast Lifecycle Costings for 10-Years	38
Appendix C: Projected Renewals from Valuation and Asset Register (Bridges)	40



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Version Control Protocol:

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Abbreviations

AMP	Asset Management Plan
ABS	Australian Bureau of Statistics
FWP	Forward Works Plan
LCC	Life Cycle Cost
LCE	Life Cycle Expenditure
LoS	Levels of Service
HSC	Hinchinbrook Shire Council
QAO	Queensland Audit Office
QTC	Queensland Treasury Corporation
PI	Performance Indicator
RUL	Remaining Useful Life
SL	Service Level



Executive Summary

This Asset Management Plan (AMP) for Hinchinbrook Shire Council's Transport assets, was developed using data from Council's Financial Asset Register and Council's budget. Transport assets provide a critical service to the community by facilitating safe access to properties and businesses throughout the region.

The purpose of this AMP is to assist Council in:

- Documenting its current management approach of Transport assets;
- Understanding and managing significant risks;
- Developing a 10 year works program;
- Identifying opportunities to improve the management of Transport assets; and
- Identifying opportunities to improve the financial sustainability of the Transport asset class.

The Transport asset class is Council's largest asset class with \$375M of assets. The class includes Roads, Bridges, Footpaths, Kerb & Channel, Culverts & Stormwater and the Ingham Aerodrome.

Due to Council's financial position and recent history of natural disasters and the relief funding that follows, Council investment in asset renewals in the transport class have been relatively low. A key focus of this AMP is to ensure that essential renewals such as resealing, gravel resheeting, culvert and bridge renewals as well as sealed pavement renewals are funded in a way that will preserve service levels as best as possible with the limited funds available.

Council has an adopted Road Management Policy which defines service levels for road assets. Improving configuration of Council's TechnologyOne Asset Register and Works System will allow for improved reporting against Council's defined service levels and support future service level reviews to be undertaken.

Developing a prioritised upgrade program across the asset class will enable Council to prioritise the competing priorities for upgraded roads, new footpaths and improved drainage. Documenting these priorities will allow Council to plan for the financial and service impacts of upgrade projects as well as ensure external funding applications are focused on a regionally prioritised basis.



1 BACKGROUND

1.1 Purpose of the Plan

The purpose of this AMP is to assist Council in:

- Documenting its current management approach of transport assets;
- Understanding and managing significant risks;
- Developing a 10-year capital works program;
- Identifying opportunities to improve the management of transport assets; and
- Identifying opportunities to improve the Financial sustainability of the transport asset class.

This 'core' plan documents asset management planning information for the transport assets for the HSC. This plan focuses on the identification of the high-level challenges and opportunities within the transport asset class.

The data available to develop this AMP came from a number of different sources with relatively poor alignment and no consistent key to join data. Traditional and detailed analysis of the data is of limited value as the data was never created nor has it been maintained in a way that facilitates reliable analysis. At a class level the data Council has available is adequate to identify trends and that the ongoing sustainability of this class is reasonable for the next 10 years, however a significant focus on funding renewals is required.

1.2 Council's Vision, Aims, Outcomes and Strategies

This AMP has been prepared in accordance with the HSC vision, mission and values as set out in the Corporate Plan 2020-2025.

Our mission is:

"To provide leadership in making locally responsive and informed decisions, delivering quality services and facilities to the Hinchinbrook Community."

Council's five key priorities are based on the following identified community priorities:

1. Built Environment
2. Prosperity
3. Lifestyle
4. Natural Environment
5. Organisational Sustainability

Our vision for Council Transport assets is:

To Deliver a Safe and Effective Transport Network.

Council intends to deliver on its commitments through a commitment to strategic asset management, implementing forward works programs based on sound strategic asset principles and service demands.



Contributing to our Council vision:

“To strengthen our vibrant regional lifestyle and prosperous economy by growing the population of and opportunities for the Hinchinbrook Shire.”

To achieve our mission and vision we will lead by values and be deliberate about making decisions based on these values:

Our Values are:

Integrity	We will lead our community with integrity and vision. We will embrace change, foster innovation, and be honest and transparent at all times.
People Focused	We value our community, our stakeholders and our employees. We will treat all persons with fairness and respect. Council will implement services from a customer perspective.
Excellence	We will always strive to do our best, to be industry leaders and to look for opportunities in pursuit of continuous improvement.
Sustainability	We will be practical, focused, and effective in our delivery of services and programs for the community.

The key elements to meeting these strategies are:

- Ensuring adequate renewal, maintenance and operational funding is allocated to effectively operate Council’s transport network;
- Accepting the financial reality of the community and organisation;
- Taking a life cycle approach;
- Developing cost-effective management strategies for the long term;
- Providing a defined affordable level of service and monitoring performance;
- Review our services to ensure they meet our customer needs within the financial constraints of Council;
- Managing risks associated with asset failures;
- Sustainable use of physical resources; and
- Continuous improvement in asset management practices.

1.3 Key Stakeholders

Good asset management requires the alignment of resources with all people understanding the objectives and then playing their respective roles in the management of assets and the delivery of services to the community. Table 1.c outlines the roles and responsibilities for asset management within HSC.

Table 1.c: Key Stakeholders and Roles

Role	Who	Responsibilities
Strategic Direction	Councillors	Represent needs of the community and service level expectations Set Council's risk appetite Accountable for organisations financial sustainability Key Goals and Strategic Objectives/Priorities Corporate Plan & Policies Providing resources to achieve AM objectives Act as stewards for all Council Assets
Operational Decision Making	Executive Management Team	Allocation of resources Provision of sound organisation structure Lead the organisations culture Managing risks in accordance with adopted appetite Manage Statutory Requirements Develop and Administer Policies Provide Service Strategy Asset management objectives
Strategic Alignment	Asset Management Steering Committee	Policy development and review Overview of implementation of Strategic Asset Management Plan and Improvement Plan Championing promotion of adequate resourcing for asset management Whole of Council asset performance monitoring Asset related risks are capture in Council Risk Management System Demonstrate whole of organisation support for sustainable asset management Wider accountability for achieving and reviewing sustainable asset management practices
Organisational Alignment	Asset Management Working Group	Encourage buy-in and responsibility; Coordinate strategic planning, information technology and asset management activities Promote uniform and fit for purpose asset management practices across the organisation Information sharing across IT hardware and software Pooling of corporate expertise Championing of asset management improvement initiatives
Tactical / Operational	Asset Custodians Maintenance Managers Service Managers	Service delivery Asset data capture Operational risk management Alignment of service levels to budgets Asset Management Plan Development Development of renewal and upgrade plans Asset specific condition monitoring Asset and resource optimisation Asset Maintenance and Operations Identification of asset disposal opportunities Identification of service efficiency opportunities

1.4 Legislative Requirements

The management of assets is often driven by complex legislative arrangements. Table 1.d provides a list of Legislation that is relevant to the Transport asset class.

Table 1.d: Legislation and Requirements

Legislation	Requirement
Local Government Act	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long-term financial plan supported by asset management plans for sustainable service delivery.
Environmental Protection Act 1994	Act to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.
Work Health and Safety Act & Regulation 2011	Sets out roles and responsibilities to secure the health, safety and welfare of persons at work.
The Australian Accounting Standards	The Australian Accounting Standards consisting of AASB13, AASB 16, AASB116 define the financial accounting requirements related to assets.
Heavy Vehicle National Law (Queensland) 2021	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 promotes public safety, manages the impact of heavy vehicles on the environment, road infrastructure and public amenity, promotes industry productivity and efficiency in the road transport of goods and passengers by heavy vehicles and encourages and promotes productive, efficient, innovative and safe business practices.
Transport Operations (Road Use Management) Act 1995	Provides for the effective and efficient management of road use in the State
Transport Infrastructure Act 1994	Provides a regime that allows for and encourages effective integrated planning and efficient management of a system of transport infrastructure.
Australian Standard - AS1742.3:2019, Austroads Guide to Temporary Traffic Management (AGTTM) & Queensland Guide to Temporary Traffic Management (QGTMM)	Defines requirements for traffic management of all works on roads

2 ASSET DESCRIPTION

This AMP is for the Council owned Transport assets. The transport asset class includes stormwater drainage assets.

2.1 Physical Parameters

The assets included in this Asset Management Plan are shown in table 2.a below, based on data from Council's website and GIS data.

Table 2.a: Extent of Assets (1 July 2022)

Asset Sub Category	Number
Sealed Roads	432km
Unsealed Roads	256km
Footpaths	8,906m
Kerb & Channel	151km
Bridges	23
Culverts	2726
Stormwater Pipes	48.4km

2.2 Asset Valuations

Asset valuations for the Transport class were completed in 2022 with data still to be loaded into TechnologyOne. Table 2b details the value of assets in the Transport class based on the asset revaluation for all assets other than bridges. Data for bridges is based on TechnologyOne data.

Table 2.b: Asset Valuations by Asset Type

Asset Type	Replacement Cost	Written Down Value
Aerodrome	\$ 5,378,226	\$ 4,351,788
Bridges	\$ 20,576,707	\$ 9,107,539
Concrete Roads	\$ 574,227	\$ 320,114
Floodways	\$ 1,917,543	\$ 1,714,254
Formed Roads	\$ 3,501,851	\$ 3,501,851
Pathways	\$ 15,102,196	\$ 11,547,695
Sealed Carpark	\$ 5,933,325	\$ 4,976,414
Sealed Roads	\$ 204,434,981	\$ 148,298,295
Stormwater	\$ 86,719,552	\$ 53,494,262



Asset Type	Replacement Cost	Written Down Value
Unsealed Carpark	\$ 22,962	\$ 20,368
Unsealed Roads	\$ 31,039,471	\$ 28,772,306
Grand Total	\$ 375,201,044	\$ 266,104,886

2.3 Asset Registers

Council's asset register is maintained in TechnologyOne which is Council's primary ERP (Enterprise Resource Planning) system. This system offers advanced capabilities when it is well configured and data is regularly maintained. There are considerable benefits when data in TechnologyOne and Council's GIS (geographic information system) are linked and the linkages are well maintained. In addition, having a single point of truth and linking operational information from field teams to assets also offers benefits if the data is maintained.

Improving organisational understanding of data management, maintenance and reporting principles will help progressively improve the data quality in the asset register. Improving other operational registers in a way that aligns with the GIS and TechnologyOne would also assist in improved reporting capabilities and management of assets.

Opportunities within the Transport asset class include:

- Simplification of asset data including: road segmentation, culvert and drainage assets being recorded as one structure & footpath segmentation;
- Improving data structures and naming conventions to allow for more meaningful reporting to be undertaken in future. Loading and maintaining useful attributing collected at revaluation in either TechnologyOne or the GIS (with automated reconciliation and updating processes). It is important for Council to develop a single point of truth that has appropriate attributing available for management purposes.
- Focus in future revaluations and data improvement projects on developing a single point of truth in a "combined register". Operational staff should have greater involvement in future projects and focus should be on assets of high criticality and nearing end of life. Thought should be given to the management reporting that would enable better decision-making to occur and this should drive the data capture and maintenance approach. Data levels should also be aligned with the businesses ability to maintain the data and keep it in a reliable state.
- Alignment of TechnologyOne works system and Reflect Maintenance Management systems to allow for reporting against service levels and alignment with Financial Asset Register.

2.4 Asset Useful Life & Condition

Asset lives for Transport assets in Council's asset register vary from 3 to 1004 years. Council's 2022 asset revaluation had useful life ranges from 10 to 1000 years. Use of the Useful Life, Remaining Useful Life and Expiry Date fields within Technology One requires review to improve consistency and reporting. A single point of truth needs to be adopted and all other data that could be misinterpreted should be archived and removed from the GIS and TechnologyOne. Table 2.d provides details of useful lives from the 2022 asset revaluation.

Table 2.d: Useful Life by Asset Type Based on 2022 Asset Revaluation.

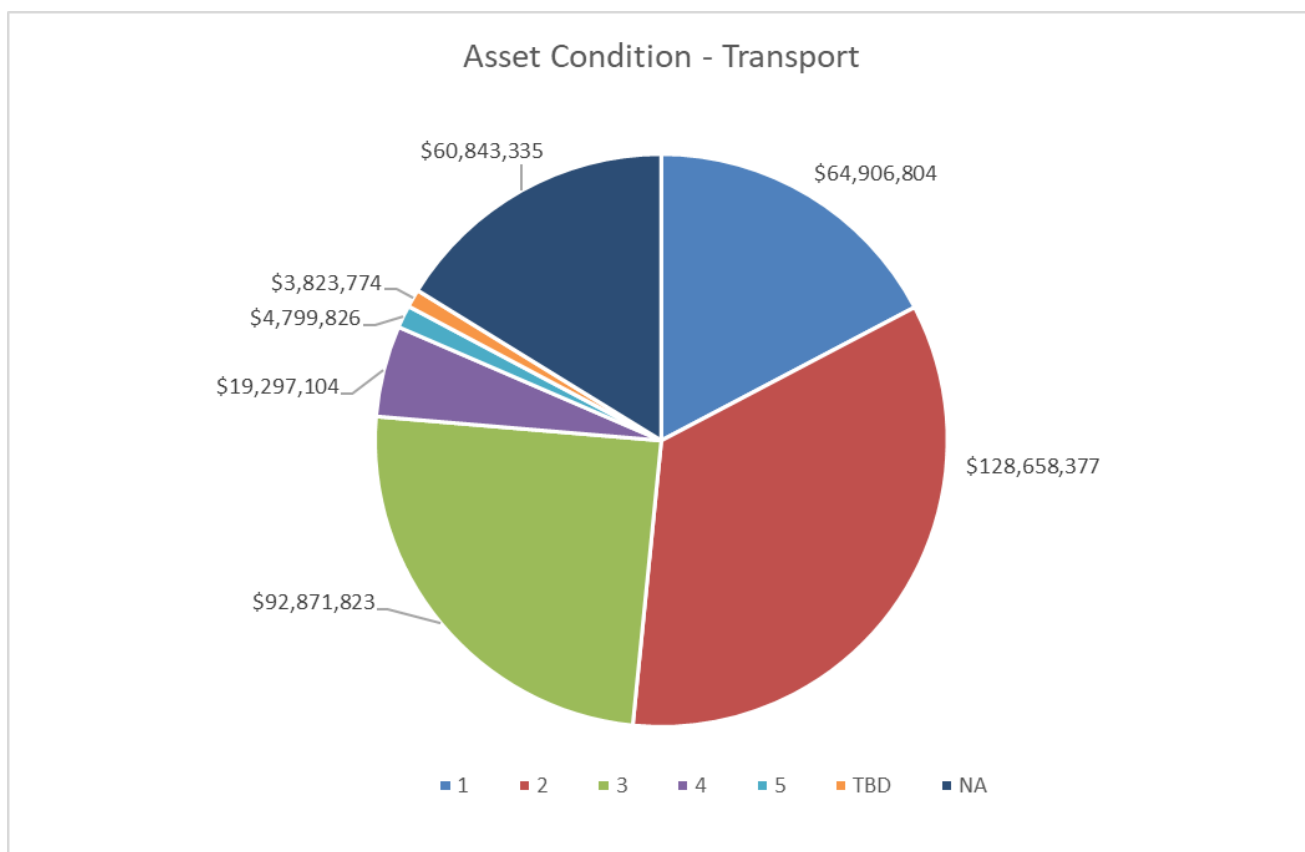
Asset Type	Average Useful Life
Formation	1000
Pavement - Sealed	60
Pavement - Unsealed	10
Surface – Spray Sealed	16
Surface - Asphalt	30
Rural Culverts	80
Concrete Floodways	80
Footpath - Concrete	80
Footpath – Exposed Aggregate	50
Footpath - Asphalt	30
Footpath – Pavers	80
Kerb and Channel	80
Stormwater Pits, Manholes & Headwalls	80
Stormwater Pipes – Lining 1	80
Stormwater Pipes – Lining 2	50
Stormwater Pipes – Structure - RCP	130
Stormwater Pipes – RCBC	80
Aerodrome - Surface – Spray Sealed	10
Aerodrome - Surface – Asphalt	30
Aerodrome - Pavement	60
Carpark – Unsealed Pavement	10

2.5 Condition Profile

Condition data for transport assets are shown in figure 2.a where condition 1 = very good, 2 = good, 3 = fair, 4 = poor, 5 = very poor. Data comes from Council's 2022 asset revaluation for all assets other than bridges which is based on TechnologyOne data. Assets that shown as NA are assets which do not deteriorate, primarily formation assets. Assets that are shown as TBD are mostly stormwater assets that have no record of previous condition assessment.



Figure 2.a: Asset Condition Profile



3 LEVELS OF SERVICE

3.1 Background

Within the asset management industry its common practice to describe service levels in two terms, *Community Levels of Service* and *Technical Levels of Service*.

Community Levels of Service relate to the service outcomes that the community wants in terms of safety, quality, quantity, reliability, responsiveness, cost effectiveness and legislative compliance.

Community levels of service measures commonly used in the asset management planning are:

- Quality How good is the service?
- Function Does it meet users' needs?
- Safety Is the service safe?

Technical Levels of Service support the community service levels and are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the Council undertakes to best achieve the desired community outcomes.

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services;



- Maintenance – the activities necessary to retain an assets as near as practicable to its original condition;
- Renewal – the activities that return the service capability of an asset up to that which it had originally;
- Upgrade – the activities to provide a higher level of service (e.g. sealing and unsealed road or widening a sealed road) or a new service that did not exist previously (e.g. adding a road onto Council’s maintained road network);

Service Levels for Roads are defined in Council’s Road Management Policy and listed below in table 3.a.

Table 3.a: Service Levels – Roads

Intervention Level	Response Time (Days)							Routine Maintenance
	Class 3 LRSS	Class 4 Urban Collector	Class 5 Rural Collector	Class 6 Urban Residential	Class 7 Rural	Class 8 Lower Order Roads	Class 9 Formed and Unformed Road	
Unsealed Road - Includes corrugations, potholes, rutting, scouring. Timelines below excludes emergent works periods, ongoing works associated with Restoration of Public Assets (REPA) or isolated weather events due to the increase in CRMs.								
Inspect – visual, if unsure triggered by Roughometer Refer to section 5.2 for intervention levels.	4		7		7			
Make Safe - Signage	1		2		2	5	10	
Repair	14		14		14	30	30	
Sealed Roads								
Bleeding (not flushing)	2	2	2	7	14			Bind with sand or fine aggregate and light rolling.
Cracking	365	365	365	365	365			Crack sealing. Substantial works to be nominated as a capital bid.
Rutting/Shoving/ Ponding	180	180	365	365	365			Pavement repair as required. Substantial works to be nominated as a capital bid.



Intervention Level	Response Time (Days)							Routine Maintenance
	Class 3 LRRS	Class 4 Urban Collector	Class 5 Rural Collector	Class 6 Urban Residential	Class 7 Rural	Class 8 Lower Order Roads	Class 9 Formed and Unformed Road	
Edge Failure – Edge break of >100mm wide	90	180	180	180	365			Repair as required.
Edge Failure – Edge drop of >75mm	90	180	180	180	365			Repair as required.
Potholes - >300mm diameter and 50mm deep	30	30	45	30	60			Repair as required.
Road Marking								
Painting Line Markings – 50% of line marking not visible	365	365	365	365	365			Repaint road line markings, place interim warning signs as part of prograded maintenance works.
Raised Pavement Markers - >3 consecutive markers missing or not reflecting on curves or barrier lines.	180	180	180	365	365			
Road Signs and Roadside Furniture								
Warning (W), Regulatory (R) and Guide (G)								
Missing/illegible/faded sign	W 30	W 30	W 30	W 30	W 30	As approved by DIUS		
	R 7	R 7	R 7	R 7	R 7			
	G 30	G 30	G 30	G 30	G 30			
Damaged Sign	90	90	90	90	90			
Loss of Reflectivity	90	90	90	90	90			
Post Deteriorated	90	90	90	90	90			
Dirty Sign	90	90	90	90	90			



Intervention Level	Response Time (Days)							Routine Maintenance
	Class 3 LRRS	Class 4 Urban Collector	Class 5 Rural Collector	Class 6 Urban Residential	Class 7 Rural	Class 8 Lower Order Roads	Class 9 Formed and Unformed Road	
Post misaligned	90	90	90	90	90			
Guide Posts								
3 consecutive posts missing on straights, 2 consecutive posts missing on curves. Guide posts to be clean and easily visible.	180	270	270	365	365	As approved by DIUS		
Guardrails								
Damaged Guardrails	14	30	60	60	60	As approved by DIUS		Repair to make safe. Full repair to occur at a later date.
Roadside Drainage								
50% reduction in drain capacity. Applies to table drains, culverts, pipes, etc.	60	60	60	60	60	As approved by DIUS		
Trees, Branches and Bushes								
Fallen trees, branches and bushes causing an obstruction or hazard.	1	1	1	1	1	As approved by DIUS		
Overhanging branches and damaged trees or limbs	1	1	7	7	7			



Intervention Level	Response Time (Days)							Routine Maintenance
	Class 3 LRRS	Class 4 Urban Collector	Class 5 Rural Collector	Class 6 Urban Residential	Class 7 Rural	Class 8 Lower Order Roads	Class 9 Formed and Unformed Road	
Visibility Obstructing Vegetation	30	90	90	90	90			
Substance (e.g. oil) on Road	1	1	1	1	1			

Footpaths

Levels of Service for footpaths are defined in Council's Footpath Inspection Policy which can be found on Council's website. See

https://os-data-2.s3-ap-southeast-2.amazonaws.com/hsc/bundle85/215_ius_pathway_inspection_policy_v3.pdf

Stormwater Drainage

Typical examples of stormwater drainage assets are shown below. Technical service levels are provided in Table 3.b

Figure 3.a Typical Stormwater Drainage



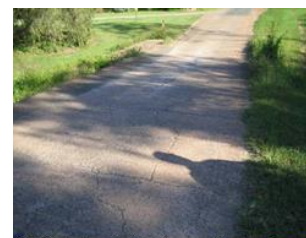
Urban Drainage



Rural Drainage



Kerb



Causeway

Table 3.b Service Levels - Stormwater Drainage

KEY PERFORMANCE MEASURE	LEVEL OF SERVICE	PERFORMANCE MEASURE PROCESS	PERFORMANCE TARGET	CURRENT PERFORMANCE
COMMUNITY LEVELS OF SERVICE				
Function	Maintain an adequate drainage network to support the road network.	Number of reported complaints.	Non-Safety Matters: < 30 per month. Safety Matters: 0 per month.	No Available data.



Safety	Safe environment.	Number of reported incidents/accidents.	No Incidents per accidents caused by facilities or processes.	No Available data.
TECHNICAL LEVELS OF SERVICE				
Condition Measure	Maintain an adequate drainage network to support the road surface condition so vehicles can pass over the road under normal weather conditions.	Structural integrity, via biannual visual inspections of the oldest asset stock, to produce forward works program.	Using a condition rating process as described in Table 3.5.b. Future works are for condition 4 and 5.	
Delivery Measure	Maintain an adequate drainage network to support the road surface condition so vehicles can pass over the road under normal weather conditions.	Annual Costs.	Funding of a 5-year program based on the condition.	No Data Available
Safety	Remove hazards.	Respond to complaints or rolling inspection program.	High risk items repaired within given timeframes. Risk Rating: Low - As resources permit, Medium - <6 months, High – make safe < 24hrs, Repair < 1 month, Very High - Make safe < 24hrs, Repair < 14 days.	No Available data.



3.2 Sustainable Asset Base

Based on the financial position of Council ensuring that Transport services are prioritised and provided adequate funding is essential to ensure the ongoing safety of road users and access to support the industries of the region.

Council's transport network has grown and evolved over time. Prior to accrual accounting and asset management consideration there was a significant expansion in the transport network as little regard was given to the ability to fund the replacement of the assets at end of life. While these assets were new and roads and the access they provide were one of Council's primary services to the community funding levels were able to keep pace with renewal and maintenance demand. However over time Council has expanded its services and as many of Council's transport assets age funding for the asset class represents an increasing challenge.

Options to generate savings in the transport class include:

- Continue to review road network in line with Council's Road Management Policy. Reducing the length of the maintained road network or maintaining roads as formed only roads (Class 9) reduces service levels but also reduces service costs. If savings are required, it is recommended that the sections of the road network with lowest traffic volumes be targeted.
- In locations where alternative routes are available and Council can accept the service level impacts some bridges or major culverts may be able to be replaced with lower level floodways.
- Reducing gravel coverage on lower order unsealed road.
- Reducing levels of service for roadside vegetation management.
- Reducing services levels on lower order roads.
- Not replacing lower order footpaths

3.3 Risk Management

Due to the environmental regulations around the operation of Transport assets risk management principles are generally well embedded within the Transport operations of Council.

Council's Risk Appetite Statement confirms Council's commitment to its community to responsibly manage its assets. Key commitments include:

- There is no acceptance for decisions/actions that adversely impact the ongoing viability/efficiency of strategically critical and/or essential infrastructure, assets or services;
- There is considerable acceptance for decisions/actions/initiatives that promote, secure or improve the ongoing viability/efficiency of strategically critical and/or essential infrastructure, assets or services;
- There is considerable acceptance for decisions/actions/initiatives that promote, secure or improve the ongoing viability/efficiency of strategically critical and/or essential infrastructure, assets or services;
- Financial viability over the short, medium and long term must be highly certain and supported by an established finance framework and long-term financial sustainability



strategy that drives the region's strategic direction on behalf of the community through effective and responsible policy, planning and decision making; and

- There will be no acceptance of decisions that have a significant negative impact on Council's long term financial sustainability.

Generally the performance and operations of the Transport asset class is well aligned with Council's risk appetite statement.

Strategic level risks for Council to consider in the Transport asset class include:

- **Natural Disasters.** While disaster relief funding is currently available Council needs to ensure its investing in the maintenance of its assets to ensure this funding continues to be available. Investment also needs to be made into assets that aren't frequently impacted by disasters, while DRFA funding can appear to be taking the place of asset renewals this funding is limited to restoring assets damaged by the disaster meaning a significant number of assets have not seen renewal funding for many years.
- **Unfunding road reseals** significantly reduces the life of Council's sealed pavements. Sealed pavements represent the highest value assets owned by Council. Reseals are essential to limit saturation of pavements which contributes to pavement failure.
- **Recognition of the importance of structures (culverts and bridges)** to the transport network. These assets are not as visible as the road surfacing and pavements however failure of these assets can significantly compromise or even prevent access. Council needs to ensure adequate inspections are undertaken and renewals funded on a priority basis of these critical assets.
- **Footpaths** represent the highest portion of public liability claims for all local governments in Queensland. Council's Pathway Inspection Policy sets clear guidelines for inspections and maintenance. If Council's future resourcing and funding does not allow it to meet its policy targets both the policy and scale of the pathway network should be reviewed to reduce risk exposure.
- **As a road manager** Council also permits Heavy Vehicles to access its road networks under the provisions of the National Heavy Vehicle Law. Ensuring load limits are applied where necessary ensures the safety of road users but does impact industry. As newer (and typically heavier) vehicles seek to access Council's road network Council will need to ensure it has adequate information available to manage access and risk.

The Improvement Plan outlines opportunities for Council to improve its risk management practices to align with its risk appetite.



4 FUTURE DEMANDS

The Hinchinbrook Shire population was 10,990 in 2016, declining to 10,920 in 2021 and estimated 10,184 in 2026. The current growth rate is flat and predicted to continue as such or decline further in future years. It is estimated the (medium) projected population will reach approximately 9,253 by year 2036. Table 4.1 provides forecast population projects based on Census data.

Table 4.1 Population Projection

Projected Population				Average Annual Change (Medium Series)	
	Low Series	Medium Series	High Series	Number	Per Cent
2016	10,990	10,990	10,990		
2021	10,920	10,920	10,920	-80	-0.7%
2026	10,002	10,184	10,378	-736	-7.2%
2031	9,411	9,732	10,077	-451	-4.4%
2036	8,776	9,253	9,768	-478	-4.9%
2041	8,175	8,780	9,768	-473	-5.1%

Demand is not viewed as influencing this class of assets over the next 20 years. Upgrades in the Transport class will be focused on improving network efficiency and resilience and will generally be funded through external grants.

5 WHOLE OF LIFECYCLE MANAGEMENT PLAN

5.1 Operations and Maintenance Expenditure (Opex)

5.1.1 Historical

Three years of historical maintenance and operations expenditure figures have been taken from Council's financial system and averaged for the purposes of financial modeling. Based on available data which has been reviewed by Council staff the figures in table 5.a represent the best available data for historical maintenance costs.

Table 5.a: Historical Operations and Maintenance Costs (2019-2022)

Expenditure Type	\$
Operations	\$1.07M
Maintenance	\$1.84M
Total OPEX (O & M)	\$2.91M

5.1.2 Future

For the purposing of this asset management plan the historical average has been used with a 3% annual increase being applied as well as the inclusion of additional operations and maintenance costs associated with new or upgraded assets.

5.2 Capital Expenditure (Capex)

5.2.1 Historical

Council's renewals funding for transport assets has historically been very low. With resheeting budgets funding an average 40 year renewal timeframe and reseal budgets funding an average 40 year reseal timeframe.

Disaster Relief Funding has funded the renewal and repair of assets damaged by natural disasters which are relatively common in the Hinchinbrook Region. This funding is always welcomed as it allows Council to restore damaged assets to the pre disaster standard. While this funding has been financially significant and has helped to maintain the condition of the transport network most of the funding has been operational in nature. There are also a significant number of assets that are not commonly affected by natural disasters and have therefore had very little work done on them in recent years.

Council's pavements have benefited from naturally well drained subgrades and the fact that the majority of trafficking by heavy vehicles occurs in the dry season. Council's sealed road pavements are generally in good condition with isolated sections (rather than full asset segments requiring renewal). Council's practice of insitu cement stabilization (or modification) as a primary renewal treatment for sealed road is providing good value and performance and should be continued into the future.

Council has been undertaking significant upgrades of its transport network to improve network resilience which should see some long term benefits however this practice is unsustainable in the long term if it comes at the expense of funding basic renewals. Council



should continue to align its upgrade works with its renewal programs where possible to maximise the life of its existing assets and limit the expansion of its asset base.

5.2.2 Forward Works Program

Council's current budget process has a year to year focus and no forward works program was available when the development of this Asset Management Plan commenced.

As outlined earlier Council's asset data has limitations in terms of use to develop a forward works program. As a result the forward works plan shown in Figure 5.a has been developed based on the asset data, input from staff and applying industry benchmarks that have been reviewed by staff to suit local conditions. In addition the forward works program also considers:

- Renewals will be prioritised to preserve road pavements and ensure structures (including culverts remain serviceable)
- Upgrades will be limited and will utilise external funding. Council should ensure that the economic and social benefits of upgrades justify the increased costs and/or identify locations on the transport network where service levels can be reduced.
- Eventually funding reseals at an average renewal rate of 15 years
- Eventually funding gravel resheeting on unsealed roads at an average rate of renewal of 20 years.
- Copleys Road Bridge Upgrade – Includes \$1.76M of external funding in 2023/2024
- Waterfall Creek Bridge Replacement– Includes \$0.36M of external funding in 2023/2024
- Increased focus on the renewal of drainage and stormwater assets to ensure road network remains accessible (without culverts access is significantly compromised or stopped).
- Kerb and Channel will be renewed when its performance as a drainage device is significantly compromised. Replacement of Kerb and Channel based on aesthetic appearance is beyond Council's ability to fund.
- Footpaths will be renewed when there are significant safety concerns that cannot be addresses through maintenance.

5.2.3 Future Capital Funding

Planned renewals total \$34.8M for the 10 year period based on the forward works program shown in Table 5a. Projected renewals total \$22.2M for the next 10-years to 2033 derived from valuations data for remaining useful lives. Thus, the average amount projected for renewals from valuations is approximately \$2.22M per year (in current dollars).

Figure 5.b shows projected and planned renewals alongside depreciation. Planned renewals are higher than projected for a number of reasons, including:

- Investing in resheeting and resealing to compensate for limited investment in recent years.
- Renewals of culverts and bridges

As outlined earlier Council needs to focus future revaluations on improving data for assets

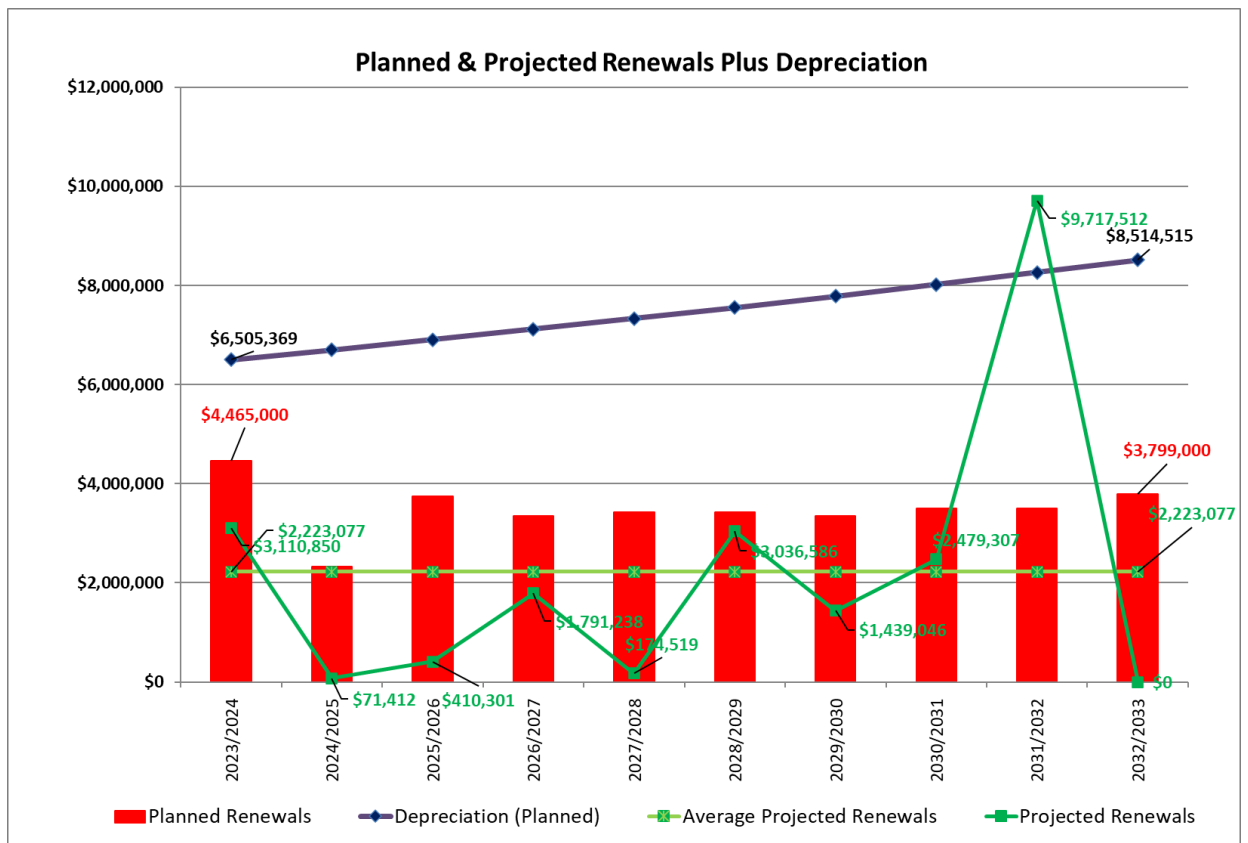


nearing end of life which will improve data in the asset register and make for more accurate renewal forecasting.

Table 5.a: Planned 10 years Renewals

Program/Project	Cost Type	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	10 Year Total
Airport renewal program	renewal	\$10,000	\$10,000	\$300,000	\$350,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$800,000
Bridges renewal program	renewal	\$530,000	\$75,000	\$75,000	\$30,000	\$30,000	\$20,000	\$100,000	\$100,000	\$100,000	\$400,000	\$1,460,000
Footpath renewal program	renewal	\$75,000	\$75,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$1,350,000
Kerb renewal program	renewal	\$150,000	\$150,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$2,300,000
Sealed Road - Reseals and AC renewals	renewal	\$750,000	\$750,000	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000	\$11,500,000
Sealed Road - Pavement renewal program	renewal	\$200,000	\$200,000	\$400,000		\$400,000	\$400,000	\$250,000	\$400,000	\$400,000	\$400,000	\$3,050,000
Stormwater Drainage & Culverts renewal program	renewal	\$2,250,000	\$564,000	\$564,000	\$564,000	\$564,000	\$564,000	\$564,000	\$564,000	\$564,000	\$564,000	\$7,326,000
Unsealed Road Resheeting	renewal	\$500,000	\$500,000	\$760,000	\$760,000	\$760,000	\$760,000	\$760,000	\$760,000	\$760,000	\$760,000	\$7,080,000
Transport Improvement Program (betterment projects, new PCNP paths, etc)	upgrade	\$150,000	\$150,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$2,300,000

Figure 5.b: Planned and Projected Renewals and Depreciation



5.3 Asset Sustainability Ratio

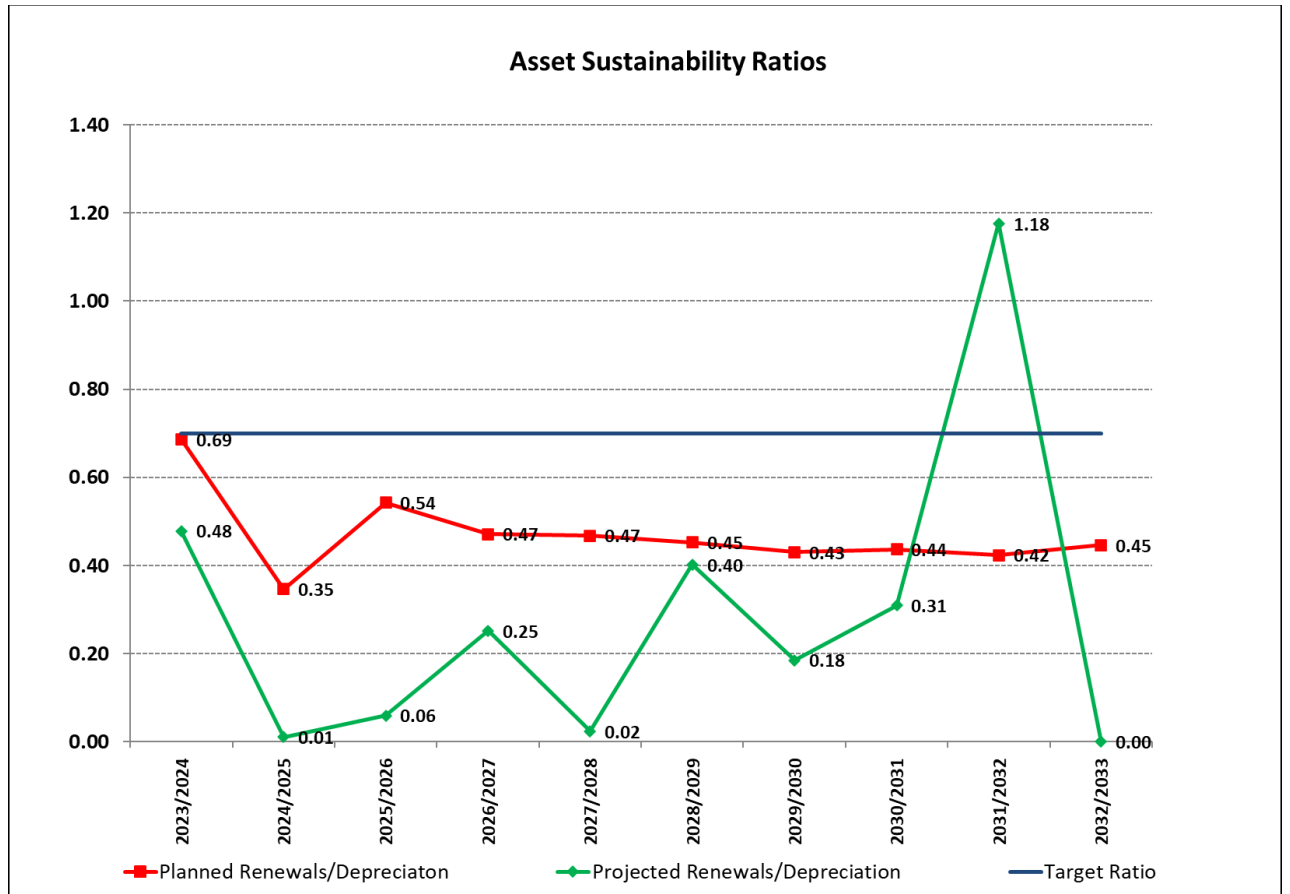
A financial measure of satisfactory levels of expenditure on asset replacements is the Asset Sustainability Ratio - the net capital expenditure on replacements as a percentage of the depreciation. It indicates whether the amount of replacement exceeds or is less than the amount of depreciation, that is, whether assets are being replaced at the rate they are wearing out. Although not a true reflection of the required long-term funding, depreciation does indicate the rate of consumption of assets. The Queensland Audit Office sets a target for renewals that is equal to or greater than 90% of depreciation.

The current total annual depreciation is \$6.5M per annum. A 90% target equates to \$5.85M per annum. Projected renewals over the next 10 years average \$2.22 per year (37%) which indicates a significant shortfall. Planned renewals average \$3.49M per year (59%) which also indicates a significant shortfall. While on face value this ratio is below the target Council should consider the following:

- Current condition of footpaths, kerb and channel and sealed road pavements is generally good. These long life and high cost assets contribute significantly to depreciation however based on current condition are not creating significant renewal demand in the current planning period.
- The current financial life for unsealed roads is 10 years. Council currently funds resheeting at approximately a 40 year or greater average frequency. This short financial life increases depreciation significantly. Increasing funding to allow for an average resheet frequency on 20 years is seen as a reasonable compromise between affordability and service levels. This would provide 50% gravel coverage at a network level.

Figure 5.c shows the annual sustainability ratio based on planned and projected renewals.

Figure 5.c: Asset Sustainability Ratios

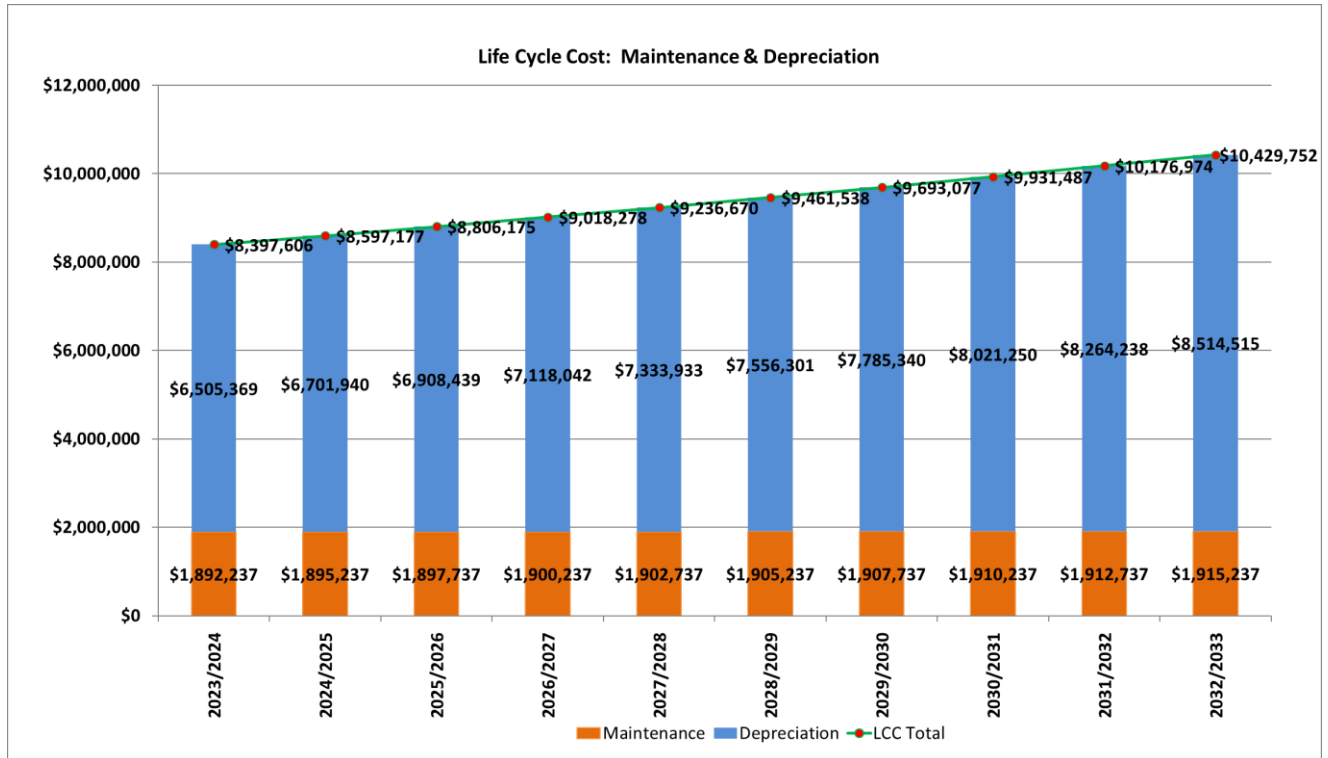


6 FINANCIAL SUMMARY

6.1 Summary Financial Projections

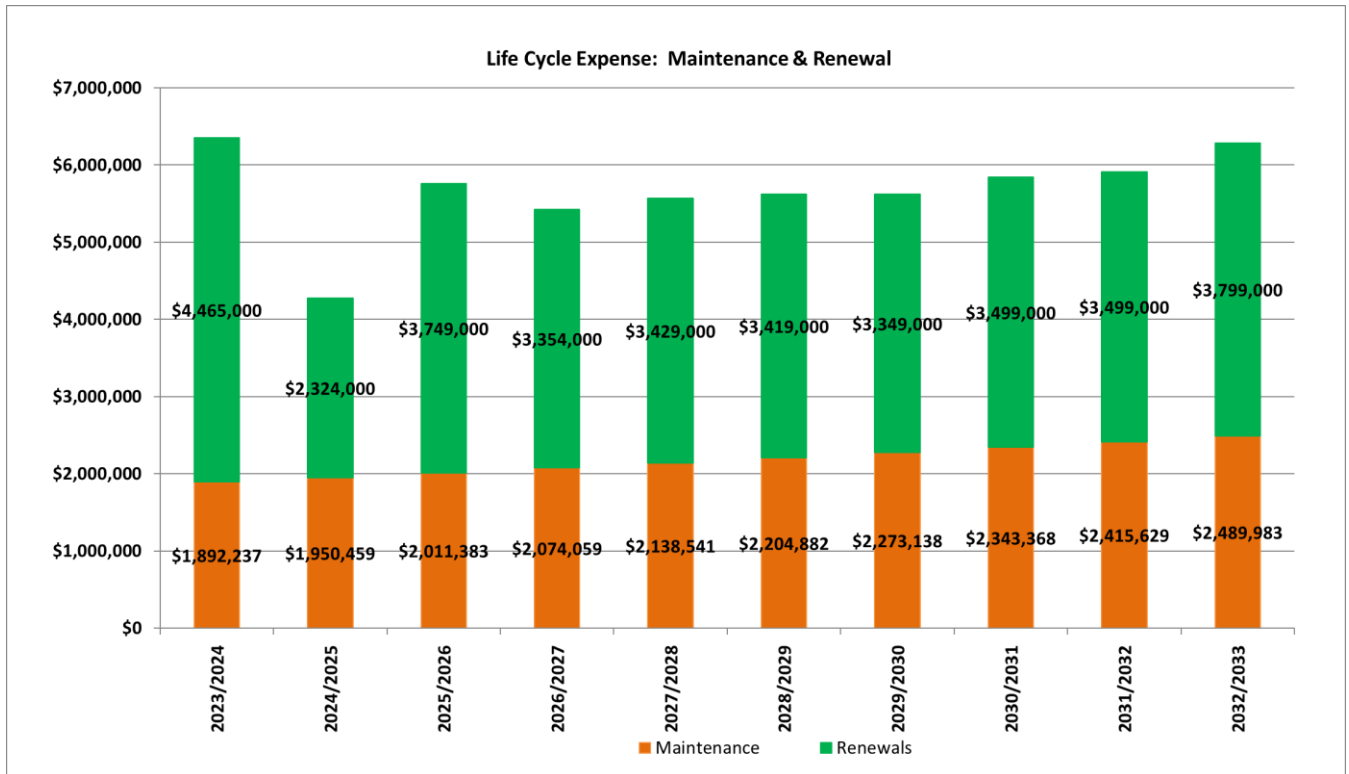
The Life Cycle Cost (LCC) shown in Figure 6.a is the average projected cost to provide the service over the longest asset life cycle. It comprises required annual maintenance based on Queensland Treasury Corporation benchmarks and asset consumption expense, represented by depreciation expense. The average LCC over the forward 10 years to provide the transport network is estimated at approximately \$9.37M per annum.

Figure 6.a: Life Cycle Cost



Life Cycle Expenditure (LCE) shown in Figure 6.b may be compared to LCC to give an initial indicator of life cycle sustainability. LCE is Council's actual or planned annual maintenance and capital renewal expenditure incurred in providing the service in a particular year. The average LCE over the forward 10 years to provide the Transport service is estimated at approximately \$5.67M per annum. Thus the ratio LCE:LCC is 0.61. This ratio is low however Council should consider the commentary in section 5.3 when assessing this ratio. This ratio does include maintenance expenditure which has a direct link to service levels.

Figure 6.b: Life Cycle Expenditure

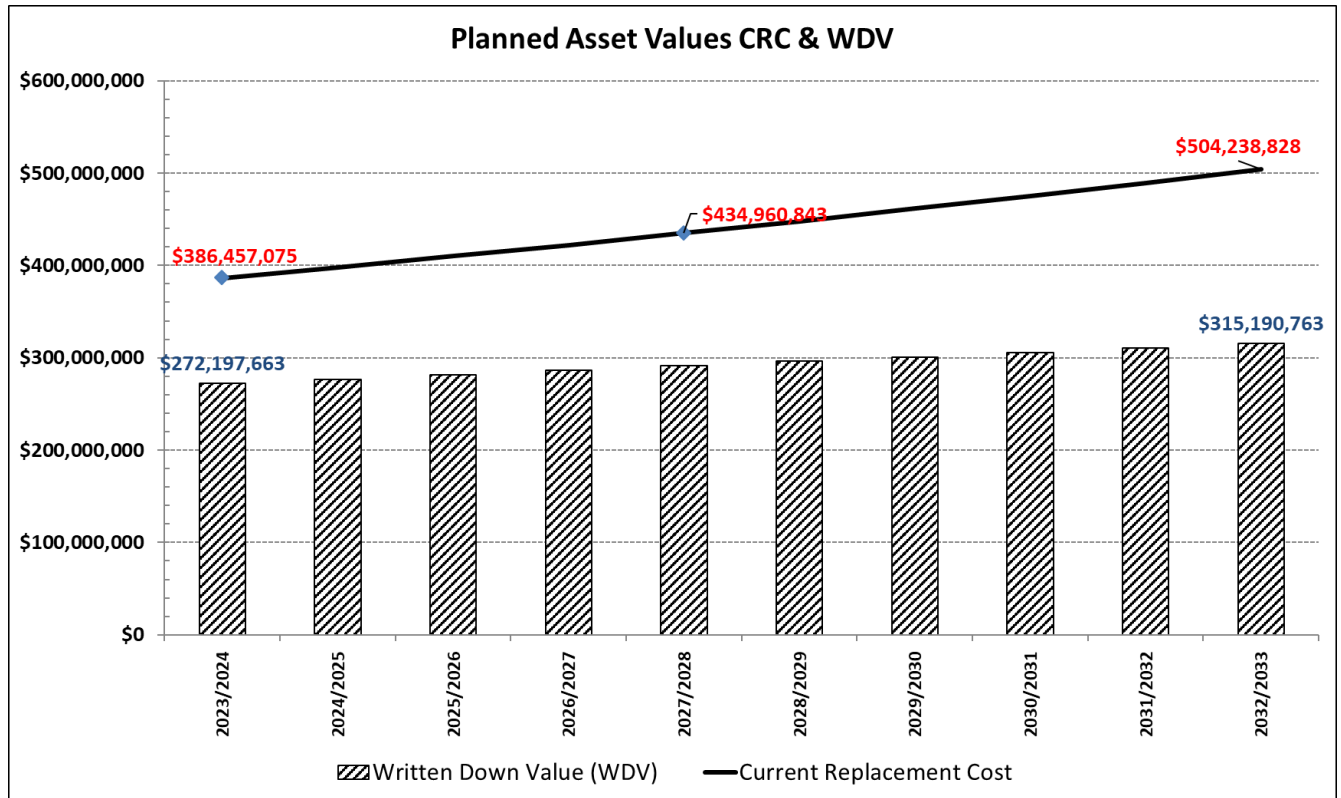


6.2 Future Valuations

Over the next 10-years escalation in the cost of materials, labour and services will increase the value of Council's asset based and annual depreciation. Current escalation rates in the Transport class are relatively high as the class has assets that relate to both civil and building indices. Figure 6.c shows projected asset valuations for the Transport class, to present a balanced forecast annual indexation of 3% has been adopted.

Due to the size of Council's transport network the costs associated with the asset class are significant. As can be seen in Figure 6.c indexation will significantly increase the value of the asset class in future years which will increase the challenge to the fund depreciation expense associated with the class in the long term. This demonstrates the importance of ensuring upgrades to the transport network will create significant benefit as the community will struggle to fund the transport class in the long term.

Figure 6.c: Asset Values from Planned Capex & Indexation



6.3 Key Assumptions made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this asset management plan and in preparing forecasts of required operating and capital expenditure and asset values, depreciation expense and carrying amount estimates. 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:

- Natural disasters (such as flood), vandalism and other unplanned events are not considered in the asset lifecycles;
- Information within the Transport register and values are based on current knowledge only;
- Maintenance and operations allocations are largely based on maintaining current budget levels; and
- Depreciation has been calculated on a straight-line basis.

Other assumptions as detailed in section 5.2.2

Accuracy of future financial forecasts may be improved in future revisions of this asset management plan by the following actions:

- Provision of a detailed 1-3 year forward work plan (Council should then consider extending the plan to 5-10 years however shifting from year to year budgeting to 1-3 year budgeting will take significant focus but is achievable);
- Loading updated asset revaluation and condition data in TechnologyOne and GIS;
- Ensure condition assessment data from Asset Inspector is used to progressively update data;
- Improved asset revaluation processes that incorporate operational information, increased focus on assets nearing end of life and industry benchmarks to better inform 10 year renewal plans;
- Full Implementation of a single Asset Register that is linked to the GIS; and
- Maintaining the Asset Register and GIS integrity.

7 IMPROVEMENT PROGRAM AND MONITORING

7.1 Improvement Program

Focus areas for Transport assets are related to better understanding the condition of assets so that renewals can be effectively planned into the future.

Figure 7.a provides a list of improvements that Council should pursue in the Transport asset class.

Figure 7.a: Improvement Program

Improvement Task	Timeframe
Simplify asset data records in GIS and Technology One and maintain a 1 to 1 relationship. To be undertaken as part of reval and maintained through simplified capitalisation procedures.	2023
Utilise Asset Inspector resource to develop renewal programs for all transport assets. For pavements and surfaces programs should focus on areas on need not necessarily entire asset segments. Pursue opportunities to fund renewals through external grants.	2024
Review historical resheeting and resealing data and update asset data to further improve asset data confidence.	2024
Identify forward program of upgrades and develop prioritisation approach to inform a transport upgrade program. As part of the process undertake an assessment financial implications so that upgrade costs can be modelled in the LTFP and future AMPs. Utilise the upgrade program to inform future funding applications.	2024
Improve configuration of Technology One and Reflect to enable reporting against service levels in Council's Road Management Policy.	2025



7.2 Performance Measures

No data on asset management performance measures was available at the time of preparation of this Asset Management Plan. Council should develop performance measures which can include:

Adoption of the Asset Management Plan by Council:

- Degree to which recommended cashflows are incorporated into long term financial plans and funding strategies;
- Degree to which works recommended by the asset management plan are incorporated into adopted budgets and capital works programs; and
- Achievement of tasks recommended in Improvement Program.

8 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2009, 'Australian Infrastructure Financial Management Guidelines', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMG.
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- ISO 55000 Asset Management Standards, Australian Standards Board
- Accounting Standards, Australian Accounting Standards Board
- Local Government Act 2009, Department of Local Government QLD
- Community Town Infrastructure Policy
- Hinchinbrook Shire Council Comprehensive Revaluation Report 2019
- Local Government Act 2009, Department of Local Government QLD
- Hinchinbrook Shire Council, Corporate Plan 2021-2025
- Hinchinbrook Shire Council Operational Plan 2021-22
- Hinchinbrook Shire Council Road Management Policy
- Hinchinbrook Shire Council Pathway Inspection Policy



APPENDICES

APPENDIX A

Definitions



Appendix A: Definitions

Asset Condition Assessment	The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.
Asset Management	The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.
Asset Management Plan	A plan developed for the management of one or more infrastructure assets that combines multi-disciplinary management techniques (including technical and financial) over the lifecycle of the asset in the most cost effective manner to provide specified level of service. A significant component of the plan is a long term cash flow projection for the activities.
Asset Renewal	Replacement or rehabilitation to original size and capacity of a road or drainage asset or the component of the asset. Renewals are "capitalised", so that the cost can be depreciated over the future life of the asset.
Core Asset Management	Asset management which relies primarily on the use of an asset register, maintenance management systems, job/resource management, condition assessment and defined levels of service, in order to establish alternate treatment options and long term cash flow predictions. Priorities are usually established on the basis of financial return gained by carrying out the work (rather than risk analysis and optimised renewal decision making).
Infrastructure Assets	Physical assets of the entity or of another entity that contribute to meeting the public's need for access to major economic and social facilities and services, e.g. roads, drainage, footpaths and cycle ways. These are typically large, interconnected networks or portfolios of composite assets. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally, the components and hence the assets have long lives. They are fixed in place and are often have no market value.
Level of Service	The defined service quality for a particular service against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental, acceptability and cost).
Life Cycle Cost	The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises annual maintenance and asset consumption expense, represented by depreciation expense. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.



Life Cycle Expenditure	The Life Cycle Expenditure (LCE) is the actual or planned annual maintenance and capital renewal expenditure incurred in providing the service in a particular year. Life Cycle Expenditure may be compared to Life Cycle Cost to give an initial indicator of life cycle sustainability.
Maintenance and Renewal Sustainability Index	Ratio of estimated budget to projected expenditure for maintenance and renewal of assets over a defined time (e.g. 5, 10 and 15-years).
Performance Measure	A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.
Reactive Maintenance	Unplanned repair work carried out in response to service requests and management/supervisory directions.
Scheduled Maintenance	Maintenance carried out in accordance with a routine maintenance schedule e.g. scheduled maintenance grading.
Planned Maintenance	Repair work that is identified and managed through the customer requests system (Dataworks). These activities include inspections, assessing the condition against failure/breakdown experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.
Rate of Annual Asset Renewal	A measure of the rate at which assets are being renewed per annum expressed as a percentage of depreciable amount (capital renewal expenditure/ depreciable amount).
Reactive Maintenance	Unplanned repair work carried out in response to service requests & management / supervisory directions.
Recurrent Expenditure	Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operating and maintenance expenditure.
Remaining Life	The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining life is economic life (also useful life).
Renewal Expenditure	Major works which do not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential.
Upgrade/Expansion Expenditure	Work over and above restoring an asset to original service potential.
Useful Life (also economic life)	Either:(a) the period over which an asset is expected to be available for use by an entity, or (b) the number of production or similar units expected to be obtained from the asset by the entity. It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the Council.



New Assets	Activities that create a road or drainage asset that did not exist previously or extend an asset beyond its original size or capacity. New assets are also "capitalised", but they increase the asset base rather than restore its capacity to perform.
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APPENDIX B

Summary of Forecast Lifecycle Costings for 10- Years



Appendix B: Summary of Forecast Lifecycle Costings for 10-Years

	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Renewal Capex (FWP)										
Existing assets only	\$4,465,000	\$2,324,000	\$3,749,000	\$3,354,000	\$3,429,000	\$3,419,000	\$3,349,000	\$3,499,000	\$3,499,000	\$3,799,000
Renewal Capex (SL)	\$3,110,850	\$71,412	\$410,301	\$1,791,238	\$174,519	\$3,036,586	\$1,439,046	\$2,479,307	\$9,717,512	\$0
Accumulative Gap (FWP-SL) Positive is a short fall in funding. Negative is overspend (before condition or service requires).	\$1,354,150	\$3,606,738	\$6,945,437	\$8,508,198	\$11,762,679	\$12,145,093	\$14,055,047	\$15,074,740	\$8,856,228	\$12,655,228
Maintenance (FWP)	\$1,890,737	\$1,947,459	\$2,005,883	\$2,066,059	\$2,128,041	\$2,191,882	\$2,257,638	\$2,325,368	\$2,395,129	\$2,466,983
Maintenance (SL)	\$1,890,737	\$1,947,459	\$2,005,883	\$2,066,059	\$2,128,041	\$2,191,882	\$2,257,638	\$2,325,368	\$2,395,129	\$2,466,983
New Capex (FWP)	\$150,000	\$150,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Maintenance (New Capex)	\$1,500	\$1,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500



APPENDIX C

Projected Renewals from Valuations



Appendix C: Projected Renewals from Valuation and Asset Register (Bridges)

Assets with 10 Years or Less RUL –

Asset Category	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Apron										
Bridges	\$ 2,533,563	\$ 71,412		\$ 769,011	\$ 19,075	\$ 80,799	\$ 465,168		\$ 1,037,299	
Concrete Roads										
Floodways							\$ 35,668	\$ 37,562	\$ 161,455	
Formed Roads			\$ 527				\$ 2,838	\$ 19,977		
Pathways					\$ 113,260					
Runway										
Sealed Carpark										
Sealed Roads	\$ 555,445		\$ 276,307	\$ 793,377	\$ 155,444	\$ 2,462,686	\$ 935,372	\$ 2,321,326	\$ 8,265,457	
Stormwater	\$ 21,842		\$ 133,994	\$ 228,324		\$ 57,110		\$ 100,442	\$ 95,873	
Taxiway										
unformed Roads										
Unsealed Carpark										
Unsealed Roads						\$ 322,731			\$ 157,428	
Grand Total	\$ 3,110,850	\$ 71,412	\$ 410,301	\$ 1,791,238	\$ 174,519	\$ 3,036,586	\$ 1,439,046	\$ 2,479,307	\$ 9,717,512	\$ -



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