



District Council of
Mount Remarkable

**2023-2024 - 2032-2033
INFRASTRUCTURE
& ASSET
MANAGEMENT
PLAN**

ADOPTED AT ORDINARY MEETING OF COUNCIL 18 JULY 2023

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1. Executive Summary

This section is intended to give the reader a snapshot of the key items that are covered by this plan.

The plan covers the following categories of assets:

- Plant & Equipment
- Roads, Bridges & Footpaths
- CWMS
- Other Assets
- Buildings
- Office Furniture & Equipment

1.1 Asset Values

The current replacement costs of the entire stock of each classification of asset listed above are as follows:

• Plant & Equipment	\$ 6.8M
• Roads, Bridges & Footpaths	\$ 51.8M
• CWMS	\$ 12.8M
• Other Assets	\$ 4.0M
• Buildings	\$ 25.4M
• Administration Assets	\$ 200k
Total Replacement Cost	\$ 101M

1.2 Forecast Capital Expenditure on Infrastructure, Property & Equipment

Total forecast capital expenditure on asset replacement/ renewals included is this plan:

• Plant & Equipment	\$ 7.0M
• Roads, Bridges & Footpaths	\$ 16.5M
• CWMS	\$ 461k
• Other Assets	\$ 900k
• Buildings	\$ 2.1M
• Administration Assets	\$ 260k

Total cost of Renewal & Replacement of assets \$ 27.2M

Total forecast capital expenditure on new/ upgraded assets included is this plan:

• Transportation Assets	\$ 524k
• Other assets	\$ 453k
• CWMS	\$ 300k

Total cost of New & Upgraded assets \$ 1.3M

2. Introduction

2.1 Background

The District Council of Mount Remarkable is located approximately 180 km north of Adelaide and covers an area of 3,424 square kilometres. It has a population of 2,864 (ABS 2016) with several townships such as Appila, Booleroo Centre, Hammond, Melrose, Murray Town, Port Germein, Weeroona Island, Willowie, Wilmington and Wirrabara.

The primary commerce in the region is the production of food/agricultural commodities including grazing, cropping, mixed farming, horticulture and forestry. These activities have seasonal impacts on the road transport asset network including surface wear rates, vegetation canopy and road safety corridor widths. Tourism is also a factor impacting on this plan due to the historical significance of the region attracting visitors.

2.2 Legislation

The requirement to have an asset management plan is outlined in the following extract from the *Local Government Act 1999*.

“122—Strategic management plans

- (1) A council must develop and adopt plans (which may take various forms) for the management of its area, to be called collectively the **strategic management plans**, which—
 - (a) identify the council's objectives for the area over a period of at least 4 years (the **relevant period**), and provide a clear indication of—
 - (i) the extent to which the council has participated with other councils, and with State and national governments, in setting public policy objectives, and the extent to which the council's objectives are related to regional, State and national objectives; and
 - (ii) the extent to which the council has given consideration to regional, State and national objectives and strategies which are relevant to the economic, social, physical and environmental development and management of its area; and
 - (iii) the extent to which the council intends to co-ordinate with State and national governments and councils or other regional bodies in the planning and delivery of services in which there is a common interest; and
 - (ab) provide assessments that relate to the following matters (with particular reference to the relevant period):
 - (i) the sustainability of the council's financial performance and position; and
 - (ii) the extent or levels of services that will be required to be provided by the council to achieve its objectives; and
 - (iii) the extent to which any infrastructure will need to be maintained, replaced or developed by the council; and
 - (iv) anticipated changes in its area with respect to—
 - (A) real property development; and
 - (B) demographic characteristics of its community to the extent that is reasonable taking into account the availability of appropriate and accurate data; and
 - (v) the council's proposals with respect to debt levels; and
 - (vi) any anticipated or predicted changes in any factors that make a significant contribution to the costs of the council's activities or operations; and
 - (b) identify the principal activities that the council intends to undertake to achieve its

- objectives; and
 - (d) state the measures (financial and non-financial) that are to be used to monitor and assess the performance of the council against its objectives over the relevant period; and
 - (e) identify the means by which its activities are to be carried out and its objectives achieved; and
 - (g) address issues associated with arranging its affairs so as to separate its regulatory activities from its other activities, so far as this is reasonable to do so; and
 - (h) make provision for the regular review of the charters, activities and plans of any subsidiary of the council.
- (1a) A council must, in conjunction with the plans required under subsection (1), develop and adopt—
- (a) a long-term financial plan for a period of at least 10 years; and
 - (b) an infrastructure and asset management plan, relating to the management and development of infrastructure and major assets by the council for a period of at least 10 years,
- (and these plans will also be taken to form part of the council's strategic management plans).
- (1b) The financial projections in a long-term financial plan adopted by a council must be consistent with those in the infrastructure and asset management plan adopted by the council.”

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

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

This asset management plan is to demonstrate responsive management of assets (and services provided from assets), compliance with regulatory requirements, and to communicate funding needed to provide the required levels of service.

The asset management plan is to be read with the following associated planning documents:

- District Council of Mount Remarkable Community Plan 2021–2031
- District Council of Mount Remarkable Long Term Financial Plan 2023-2024 to 2032-2033
- District Council of Mount Remarkable Annual Business Plan & Annual Budget 2023-2024

2.3 The Purpose of Asset Management

The Council exists to provide services to its community. Some of these services are provided by infrastructure assets. Council has acquired infrastructure assets by ‘purchase’, by contract, construction by Council staff and by donation of assets constructed by developers and others to meet increased levels of service.

Council’s goal in managing infrastructure assets is to meet the required level of service in the most cost effective manner for present and future consumers.

The key elements of infrastructure asset management are:

- Taking a life cycle approach,
- Developing cost-effective management strategies for the long term,
- Providing a defined level of service and monitoring performance,

- Sustainable use of physical resources,
- Continuous improvement in asset management practices.

2.4 Strategic Goals & Objectives of Council

Our Vision for the community

This is a remarkable community to be a part of; a remarkable place to live, and a remarkable place to work or be in business. We're a 'can do' Council and what we do, we strive to do remarkably well.

Our Mission

Under the Local Government Act 1999 and other relevant legislation, Council has several defined roles and responsibilities in areas such as roads and infrastructure, community safety, planning and development, environmental health, animal management and much more including a range of administrative functions.

Along with this, Council chooses to perform a range of functions and services in the pursuit of delivering the best outcomes for the community.

In this pursuit, Council's mission is:

- To enhance a sense of community
- To develop vibrant, sustainable townships that our people feel proud of and connected to and that visitors want to explore.
- To provide quality services across all our community.
- To advocate for the protection of our environment and heritage.
- To facilitate opportunities for the economic, social, and cultural benefit of our community
- To perform regulatory functions with diligence, care, and consideration.
- To demonstrate sound leadership and work with our community to meet their expectations whilst operating in a financially responsible manner.

Our Core Values

The Elected Members and staff of the District Council of Mount Remarkable are guided by the following day-to-day principles to create a positive and dynamic organisational culture:

Be remarkable

Unique doesn't cut it. Remarkable is in our name, in our hearts and in our destiny.

Take others on the journey

It takes a collective effort; we know we can't do it alone. We work with our stakeholders to build prosperity.

Engage, listen, act

Within the boundaries of good public governance we 'have a go'.

Innovate

Forward-thinking, we balance aspiration with responsibility in our considerations, priorities and decision making.

Adapt

Change is behind us, upon us and ahead of us. We are receptive and adaptable.

Be open & transparent

Through good governance and transparency, we hold the trust of our community.

Take pride & be proud

We take pride in what we do. We are proud of our past and optimistic about our future.

2.5 Plan Framework

Key elements of the plan are:

- Levels of service
- Future demand – how this will impact on future service delivery and how this is to be met.
- Life cycle management – how the organisation will manage its existing and future assets to provide the required services
- Financial summary – what funds are required to provide the required services.
- Monitoring – how the plan will be monitored to ensure it is meeting the organisation's objectives.
- Asset management improvement plan

2.6 Information Flow Requirements and Processes

The key information flows into this asset management plan are:

- Council's strategic and operational plans,
- Service requests from the community,
- Network assets information,
- The unit rates for categories of work/materials,
- Current levels of service, expenditures, service deficiencies and service risks,
- Projections of various factors affecting future demand for services and new assets acquired by Council,
- Future capital works programs,
- Financial asset values.

The key information flows from this asset management plan are:

- The projected Works Program and trends,
- The resulting budget and long term financial plan expenditure projections,
- Financial sustainability indicators.

These will impact the Long Term Financial Plan, Strategic Management Plan, Annual Budget, and Annual Business Plan.

2.7 Importance of accurate asset management data to long term financial sustainability

Financial asset data has two types of use. Firstly, it is used to calculate depreciation in the Statement of Comprehensive income (Operating Statement) as well as the fair value of Property, Plant & Equipment in the Statement of Financial Position (Balance Sheet). The second use for financial asset data is to determine how much an asset will cost to replace and which year it is likely to need to be replaced.

In summary the financial statements use the financial data to report current consumption of assets and current values and also use the data from a future perspective when preparing asset management renewal programs.

Depreciation is one of the largest numbers in the operating statement, fair value of Property, Plant & equipment is the largest value in the balance sheet and the capital renewal expenditure (as contained in the asset management capital renewal programs) are the usually the most material cash outflows contained in the Long-Term Financial Plan. There is an obvious connection between these items and long-term financial sustainability.

If the asset data that underpins the depreciation charge, fair value and the asset renewal expenditure is inaccurate then Council will by default also have an inaccurate assessment of its future likely levels of financial sustainability.

Up to date data is essential as situations change over time, hence the need to update the asset management renewal programs on a timely basis and at least on an annual basis as part of the legislatively required review of the Long-Term Financial Plan.

Council is intending to undertake revaluations of the following classes of assets in the near future with the intention of applying these valuations to the 2022-23 financial statements.

- Plant & Equipment (Stock take rather than revaluation)
- Roads, Bridges & Footpaths
- CWMS
- Other Assets
- Buildings

This data will also be used in the next iteration of Council's asset renewal programs to be undertaken in conjunction with Council's annual update of its Long Term Financial Plan.

3. Levels of Service

This plan has been prepared on the assumption that current service standards are adequate to meet the expectations of the community. Service level scenario analysis has not been undertaken at this stage to determine the relative increases or decreases in costs associated with providing increased or decreased service ranges and levels.

Future iterations of this plan intend to comprehensively record the range and levels of both operating services as well as asset services. This then provides Council with solid decision-making data to analyse the impact of various scenarios on Council's long term financial position where services are increased or decreased should the need arise at a future time.

Service levels are defined in two terms:

3.1 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 used in the asset management plan are:

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

3.2 Technical Levels of Service

Supporting the community service levels are also technical measures of performance. These technical measures relate to the allocation of resources to service activities that 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 such as opening hours, cleansing frequency, mowing frequency, etc.
- Maintenance – the activities necessary to retain an asset as near as practicable to its original condition (eg road patching, unsealed road grading, building and structure repairs),

- Renewal – the activities that return the service capability of an asset up to that which it had originally (e.g. frequency and cost of road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),
- Upgrade – the activities to provide an higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (eg a new library).

4. Future Demand Forecast

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices, environmental awareness, etc.

The view taken in the preparation of this plan as well as the LTFP is that there will be minimal shifts either upwards or downwards in current population levels. Should this change over time then both the AMP & LTFP will need to be updated.

5. Routine Maintenance Plan

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

Maintenance includes reactive, planned, and specific maintenance work activities.

Reactive maintenance is unplanned repair work carried out in response to service requests and management/supervisory directions.

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

Specific maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, etc. This work generally falls below the capital/maintenance threshold but may require a specific budget allocation.

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

Current maintenance expenditure levels are adequate to meet required service levels. Future revision of this asset management plan will include linking required maintenance expenditures with required service levels.

Management intends to develop improved maintenance programs and recording systems across all categories of assets to better demonstrate the link between current expenditure levels with the current service standards.

More specifically management will be looking for opportunities to deliver the same levels of service in a more efficient manner thus leading to savings in expenditure. Further to this if there is a need to increase services then the reason for doing so will be clearly demonstrated.

The following asset maintenance expenses are funded in the existing operating budget which in turn is funded across the ten years covered by Council's Long Term Financial Plan.

Asset Maintenance	\$,000
CWMS	380
Werroona Water Supply	35
Halls	55
Stormwater	25
Jetties	25
Parks & Gardens	330
Playgrounds	22
Depot	250
Plant & Machinery	250
Civic Center	25
Kerbing	15
Foothpath	25
Grading	495
Traffic Management	88
Bridge	50
Sealed	100
	2,170

6. Types of Capital Expenditure - Renewal / Replacement vs New / Upgrade

Renewal expenditure is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces, or renews an existing asset to its original service potential.

e.g. Resheeting a road to its previous width & depth.

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

New works are those works that create a new asset that did not previously exist or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs, eg installing a CWMS for the first time.

New assets and upgrade/expansion of existing assets are identified from various sources such as Council or community requests, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary estimate.

It is possible for capital expenditure to be a combination of renewal as well as upgrade eg the replacement of a road that was initially a 6 metre wide sheeted surface with an 8 metre width sheeted surface can be considered part replacement and part upgrade.

The important point to understand is that if Council is not able to replace its existing assets in a timely manner, then new assets should not be built unless essential. By building new assets Council is effectively building new liabilities as the assets usually don't generate revenue (eg roads) cannot be sold and will need to be maintained and eventually replaced.

7. Plant & Equipment

7.1 Description

Plant & Equipment are a significant class of asset and include large pieces of equipment such as graders and tractors as well as the small fleet of Council cars and utilities. The current replacement cost of this class of assets as recorded in the financial statements is \$6.8M.

In developing the asset renewal program for this class of asset it was observed that the fleet of plant & equipment was in very poor condition. A review of prior year records as well as the high level of maintenance costs being incurred each year to fix breakdowns explain why such a high level of replacements are forecast in this plan.

It is expected once the fleet is restored to a more acceptable standard then maintenance costs will decrease. It is also expected that a higher level of productivity will be achieved due to a reduction in idle time caused by the machinery not being available for use when broken down.

7.2 Renewal & Maintenance Costs

	2023-24 \$,000	2024-25 \$,000	2025-26 \$,000	2026-27 \$,000	2027-28 \$,000	2028-29 \$,000	2029-30 \$,000	2030-31 \$,000	2031-32 \$,000
Plant Replacement	1,082	1,342	781	824	1,095	953	892	892	945
Operating Maintenance	250	245	240	235	231	226	221	217	213

7.3 Trade In Forecast

The following amounts have been included in the LTFP in relation to estimated trade cash flows expected to be received on change of plant & equipment:

	2023-24 \$,000	2024-25 \$,000	2025-26 \$,000	2026-27 \$,000	2027-28 \$,000	2028-29 \$,000	2029-30 \$,000	2030-31 \$,000	2031-32 \$,000
Trade in Cash Inflows	216	268	156	165	219	191	178	178	189

8. Roads, Bridges & Footpaths

8.1 Description

The transport network comprises of:

- Sealed Roads
- Unsealed Roads
- Kerbing
- Footpath
- Cross Drains
- Floodways
- Bridges

In 2021, Council undertook a condition assessment of its transportation assets. As of the 30 June 2022, the transport assets within this plan have a reported replacement cost of \$51M.

This plan outlines the estimated expenditure required from Council to maintain its transport assets to the prescribed service levels. The expenditure demand for operational and maintenance, renewal and upgrade is included in the sections that follow.

8.2 Summary of Transport Assets – Roads & Footpaths

The following table identifies the subclasses of each of Council’s transportation assets:

Asset Type	Quantity	Unit
	Rural Standard Spray Seal	83 km
	Rural Hotmix Road	0 km
Sealed Road	Township Spray Seal	42 km
	Township Hotmix	4 km
	Township Concrete	0 km
	Sealed Road Pavement	129 km
	Sheeted Road – Category 1	102 km
Unsealed Road	Sheeted Road – Category 2	236 km
	Sheeted Road – Category 3	594 km
	Form Graded – Category 4	522 km
	Township Sheeted Road	23 km
	Block Paved	3 km
	Unsealed Surface	33 km
	Hotmix Bitumen	2 km
Footpath	In-situ Concrete	3 km
	Natural	1 km
	Spray Seal	4 km
	Rail Trails	39 km

8.3 Condition Rating/ Analysis

The transport assets consumption is measured by condition at time of inspection. The condition at time of inspection is used to calculate the estimated remaining life at time of valuation for each asset.

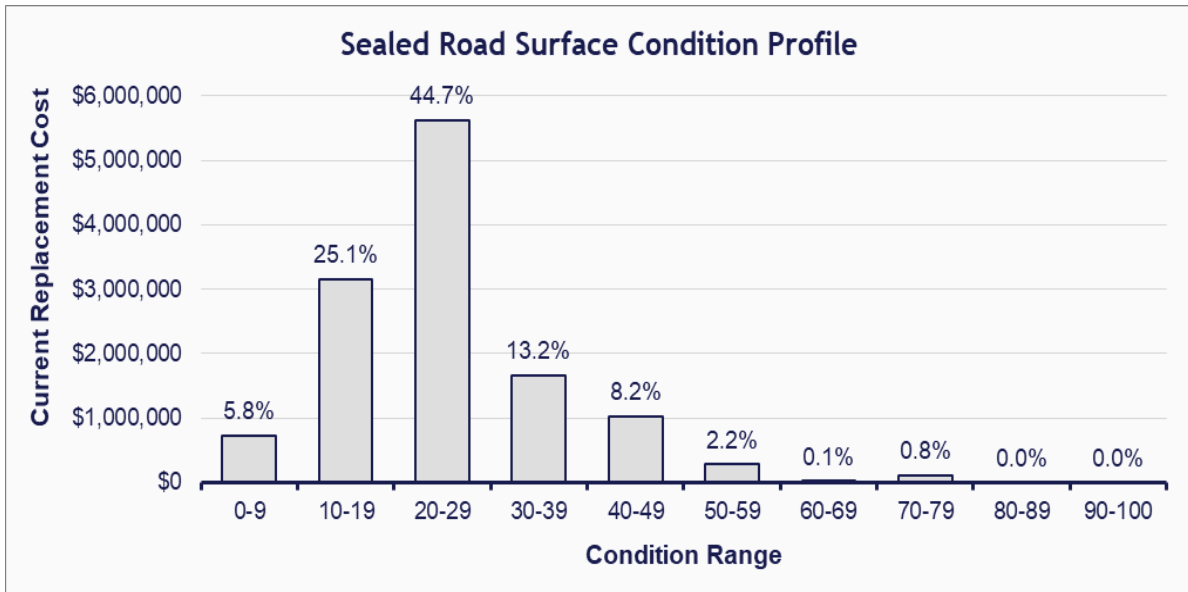
The renewal program has been develop based on the expiry date calculated from the recent condition assessment and standard life. For the purposes of the plan, the funding demand is determined based on the calculated replacement cost for majority of assets. The condition profiles of all transport assets have been based on the 2021 condition audit. All profiles are shown by Current Replacement Cost.

The table below includes the condition range and corresponding condition description for the purposes of interpreting the condition profiles for the transport asset. Various asset characteristics and defects were assessed to determine the overall condition score for these asset classes.

Condition Range	Rating
0	As New
1-20	Very Good
21-40	Good
41-60	Fair
61-80	Poor
81-100	Very Poor

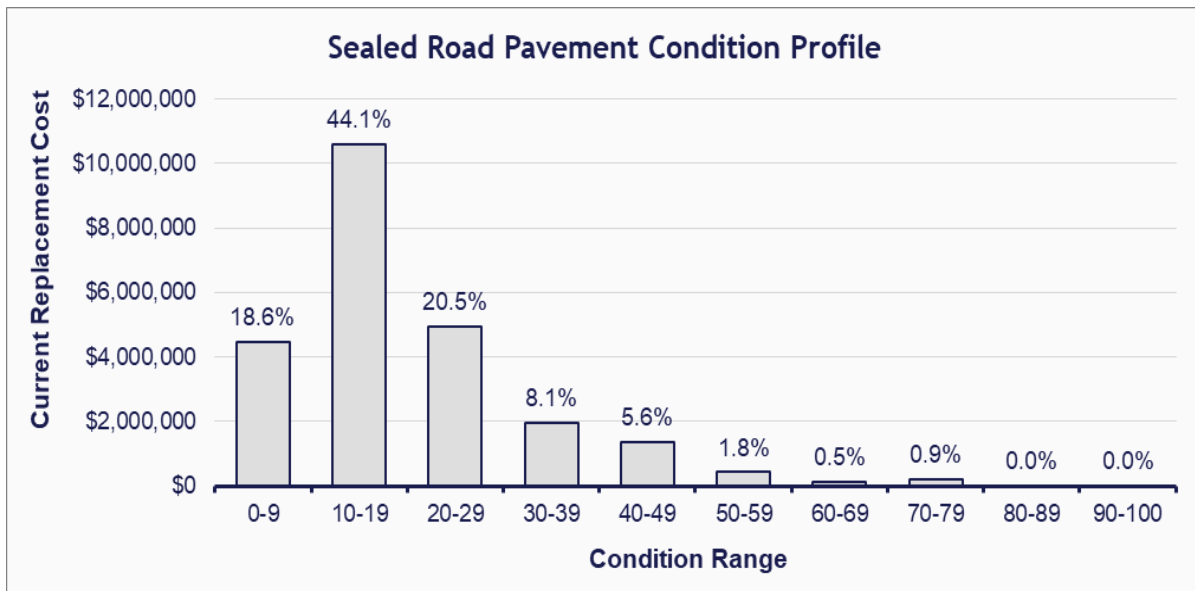
Condition Rating Summaries (Sealed, Unsealed, Kerb, Footpath, Bridges)

Summary Sealed Road Surface Condition Profile



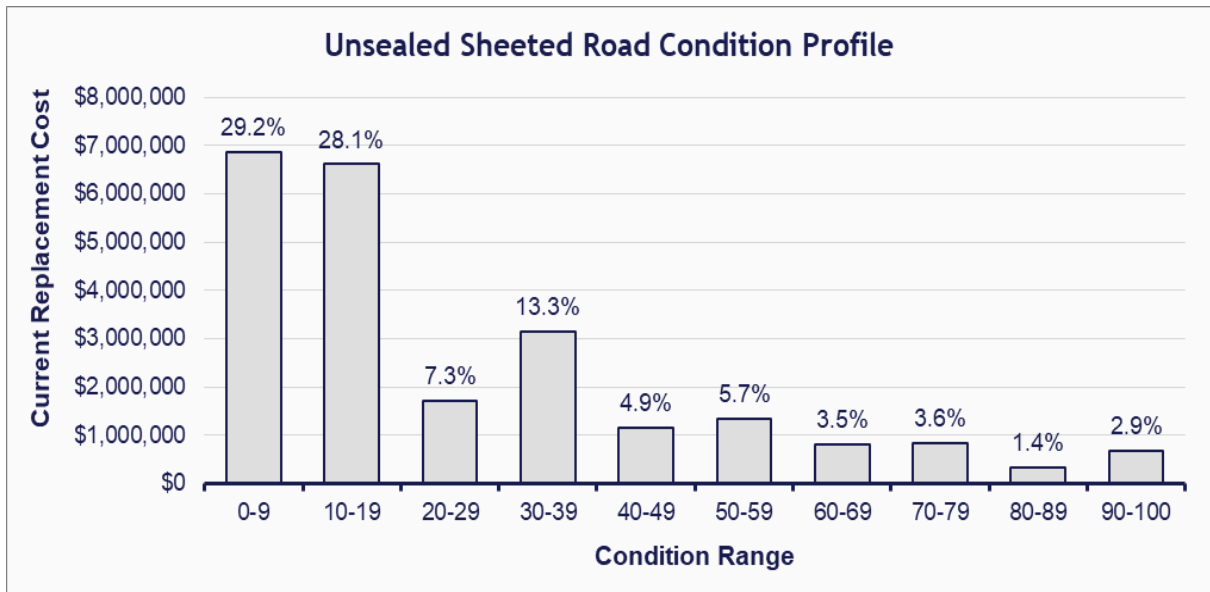
As shown above, 75.6% of the sealed road surface has a condition score less than 30 indicating that the road surface is in good condition. However, a condition score of greater than 32 is the first intervention point to undertake surface treatment works for high use roads. As the condition score progressively worsens, it is expected that additional preparation works will be required to restore the road to the meet the service levels.

Summary Sealed Road Pavement Condition Profile



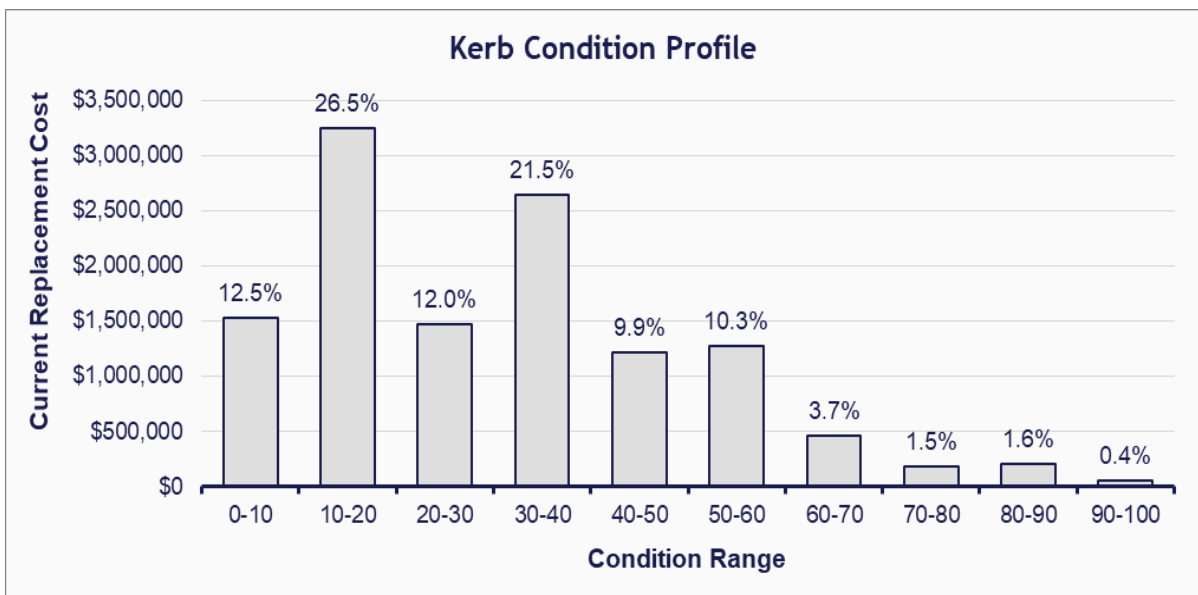
As shown above, 91.2% of all rural and township sealed road pavement assets have a condition score of less than 40, 7.4% in between 40 and 59 and the remaining 1.4% greater or equal to 60. The defined condition range at which sealed road pavement reach their end of life is 80. Generally, it is expected pavements between 41 and 60 require pavement maintenance, whereby pavements exceeding 60 in condition score require major works (rehabilitation or reconstruction).

Summary Unsealed Sheeted Road Condition Profile



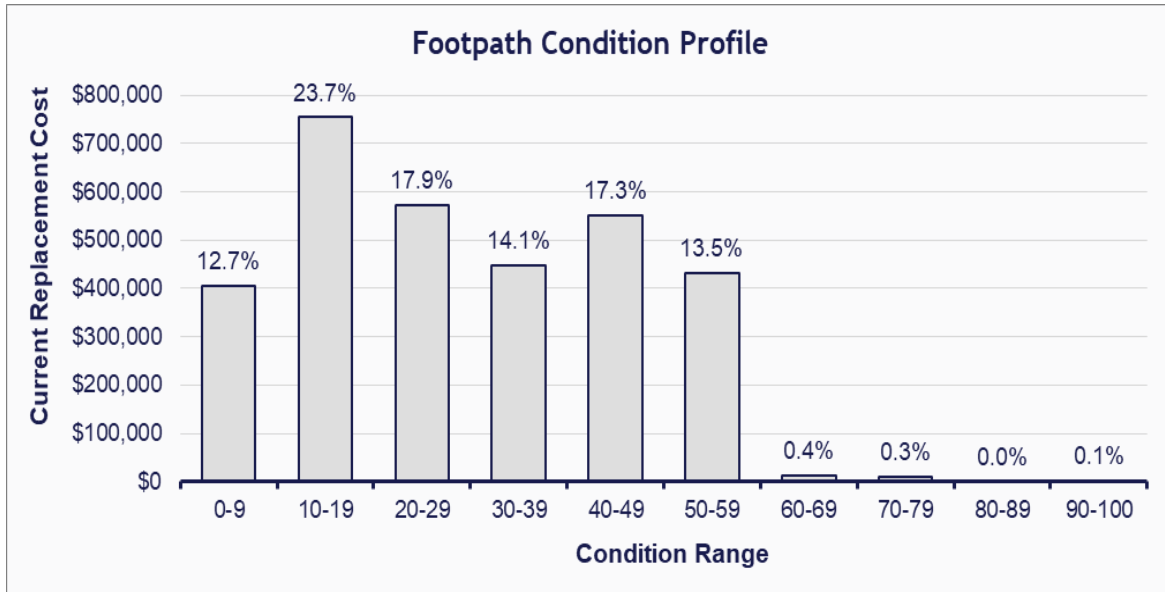
As shown above, 78% of unsealed sheeted roads have a condition score of less than 40, 10.7% between 40 and 59 and the remaining 11.3% greater than 59. The defined condition range at which sheeted road surfaces reach their end of life is between 65 to 70 respectively. As demonstrated above a portion of the network exceeds 70 in condition score and hence this indicates a backlog of sheeted road surfaces due for renewal.

Summary Kerb Condition Profile



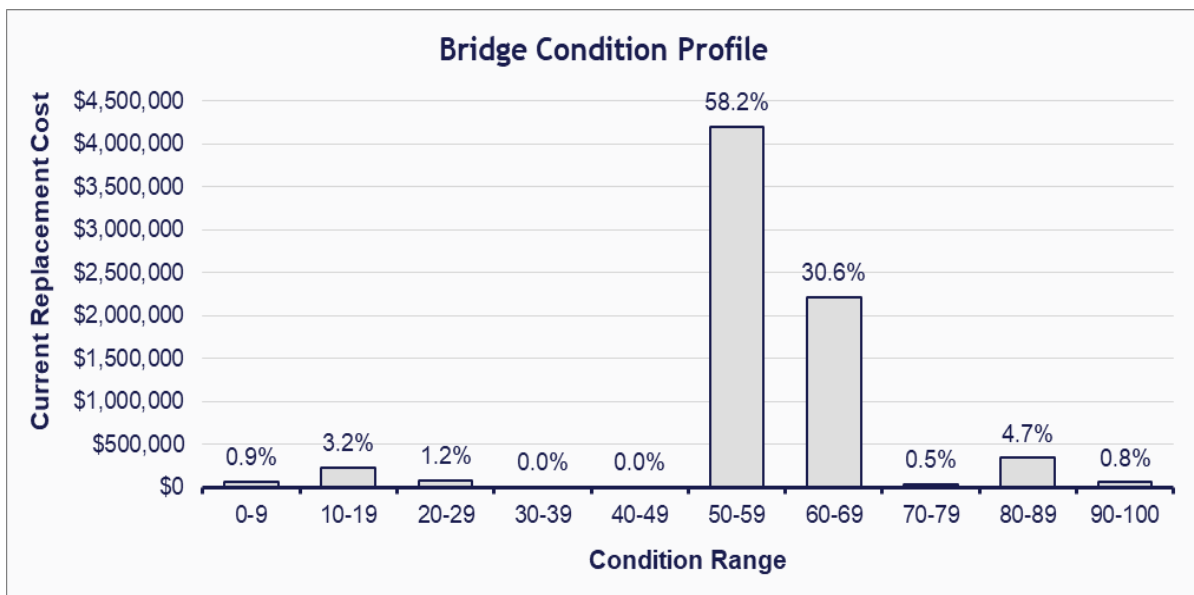
As shown above, 72.5% of kerb assets have a condition score less than 40, 24% between 40 and 59 and the remaining 7.3% above 59. The defined condition score at which kerb assets reach their end of life is 100 for total replacement, however kerb patching is generally undertaken by Council to maintain the condition of the kerb assets at a functional level. This is discussed further within this Plan.

Summary Footpath Condition Profile



As shown above, 68.4% of footpath assets have a condition of less than 40, 30.8% between 40 and 59 and remaining 0.8% above 59. The defined condition score at which footpath assets reach their end of life is between 80 and 100. However, the condition profile does not take into consideration the compliance with the Disability Discrimination Act 1992 (DDA) which is a main driver to the renewal of footpaths.

Summary Bridges Condition Profile



As shown above, 5.2% of bridge assets have a condition score of less than 40, 58.2% between 40 and 59 and the remaining 36.6% greater than 59. There are a total of 19 bridges that are Council owned and maintained. As part of the condition assessment undertaken in 2021, individual bridges were componentised (i.e. decking, structure, barrier etc.) given the varying components associated with bridges.

8.4 Bridges avourite

A condition assessment was undertaken in 2021 to determine the overall condition of the bridge infrastructure assets that highlighted defects for remediation works or further investigation. This assessment was used to support Council's capital renewal plan. Several bridges were identified to be in very poor condition and recommended for additional structural investigations (Level 3).

An assessment of the risks associated with service delivery from bridge infrastructure assets is yet to be undertaken. The outcome of a risk assessment will be to identify critical risks to Council. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develop a risk rating, evaluates the risk and develop a risk treatment plan for non- acceptable risks.

Risks recommended to be identified during the additional assessments include, but not limited to, the following:

- Integrity of the Structure
- Traffic in excess of Load Limit
- Traffic Collision
- Fire / Flood
- Vehicle leaving the surface of a Bridge.

This has been included in the Improvement Plan for Council to implement.

Based on the Level 2 Bridge Condition Assessment undertaken in 2021, Council has the following observable capacity/performance issues identified for further consideration.

Known Service Performance Deficiencies

Location	Service Deficiency
Bridge Barrier/Guardrails	Several bridge barriers are non-compliant with current design standards or are in poor condition.
Structural Integrity	Vehicular Bridges require additional assessments such as Load Limit Assessment and Level 3 Structural Assessment to confirm capable of servicing current usage in a safe manner. This is currently being undertaken.
General Maintenance and Renewal	Bridges have been identified to have multiple defects as of 2021 Bridge Inspection and require maintenance to prolong life of asset. A projected maintenance/operational allowance of \$150K has been included in Year 1 of this plan to account for this service deficiency and an annual allowance of \$50K thereafter to continue to maintain the bridge network.

Bridge Barrier/Guardrails

Several bridges have been identified as having poor condition bridge barriers that require renewal and upgrade to meet current standards. A summary of the bridges that require a barrier upgrade are shown in the table below with an estimated cost of renewal.

Bridges Requiring Barrier/Guard Rail Upgrade:

Bridge Name	Treatment	Estimated Cost (\$)
Forest Road Bridge 1	Barrier Upgrade	\$100,000
Forest Road Bridge 2	Barrier Upgrade	\$75,000
Appila-Tarcowie Road Bridge	Barrier Upgrade	\$150,000
Wilmington Bridge	Barrier Upgrade	\$75,000
Total (Barrier Upgrade)		\$400,000



Forest Road Bridge 1 - Barrier



Forest Road Bridge 2



Appila Tarcowie Road Bridge



Wilmington Bridge

Load Limit & Structural Assessment of Bridges

As part of the condition assessment, it was identified that several vehicular bridges may be providing a service outside of its known design constraints. It was noted that transportation configurations have changed which include vehicles of Higher Mass Limits (HML), Restricted Access Vehicles (RAVs - B-Doubles/road trains) and farming implements which are greater in dimension. These factors need inclusion in any consideration for bridge use and access to protect the structural integrity of each structure. The required investigation and the associated bridge are outlined in the table below.

Bridges Requiring Investigation:

Bridge Name	
Port Germein Road Bridge	Level 3 Structural Assessment
Forest Road Bridge 1	Load Limit Assessment
Appila-Tarcowie Road Bridge	Level 3 Structural Assessment, Condition Assessment Monitoring



Figure 3.13 Port Germein Bridge



Figure 3.14 Appila-Tarcowie Road Bridge



Figure 3.15 Forest Road Bridge 1



Figure 3.16 Forest Road Bridge 1

General Bridge Maintenance

As part of the Level 2 Bridge condition assessment undertaken in 2021, the following minor bridge maintenance was identified in the table below. The estimated cost has been included in the operational expenditure budget for 2022-2023.

Bridges Requiring Maintenance:

Bridge Name	Maintenance Treatment	Estimated Cost (\$)
Forest Road Bridge 1	Removal of existing rust on girder and undertake rust proofing treatment	\$12,000
Seaman Road Bridge	Fill and overlay cracking on concrete abutment with epoxy or concrete	\$5,000
Melrose Swing Bridge	Replacement of nuts and bolts from decking and joints	\$500
Reserve/ Centenary Park	Removal of existing rust and undertake rust proofing treatment	\$5,000
Reserve/ Beautiful Valley Park	Removal of existing rust and undertake rust proofing treatment	\$5,000
Old Stirling North Road Bridge 1	Fill and treat void minor avoid between wingwall and concrete abutment	\$3,000
Old Stirling North Road Bridge 2	Removal of existing rust along exposed reinforcement on underside of bridge, undertake rust proofing and overlay	\$5,000
Old Stirling North Road Bridge 3	Cover exposed reinforcement on outlet/inlet of concrete pipe	\$5,000
Old Stirling North Road Bridge 4	Repair dislodged stones from bridge (stone bridge)	\$10,000
Old Stirling North Road Bridge 6	Repair dislodged stones from bridge (stone bridge)	\$20,000
Old Stirling North Road Bridge 7	Repair dislodged stones from bridge (stone bridge)	\$25,000
Old Stirling North Road Bridge 8	Repair dislodged stones from bridge (stone bridge)	\$25,000
Wilmington Road Bridge	Replacement of Signage	\$500
	Total	\$121,000

8.5 Risk Management

An assessment of risks associated with service delivery for transport assets have been undertaken by Council. 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.

Risks assessed as being 'Extreme' and 'High' will be identified with associated costs in future revisions of the plan. The table below is a summary of these risks.

Roads - Risks

Risk Treatment Plan Summary

Service or Asset at Risk	What can Happen	Risk Rating (Ex,H,M,L)	Risk Treatment Plan
Sheeted roads	Flood damage resulting in a higher deterioration rate of road condition and hence higher cost to Council maintain service level	M	Early identification of damage and lodging claim to disaster fund
Sealed roads	Defects such as potholes resulting in personal injury and traffic accidents	M	Develop annual maintenance budget to address major defects
Kerb	Ponding of water within water table due to poor condition of kerb	L	Annual maintenance budget for kerb
Cross drains	Flooding of roadway or adjacent properties due to blockage	M	Develop annual maintenance schedule and budget to address blockages
Floodways	Vehicles attempt to cross when water depth and velocity too high	H	Install and upgrade signage and depth gauges on floodways – review high risk locations
Footpaths	Injury to pedestrians due to no footpath connectivity in high use locations (i.e. schools, shopping centres)	M	Maintain footpath linkages in between high use areas
Transport infrastructure in poor condition	Potential injury to public and future funding deficiency	H	Undertake routine condition assessment of transport infrastructure to allow for informed forward planning

Bridges - Risks

A condition assessment was undertaken in 2021 to determine the overall condition of the bridge infrastructure assets that highlighted defects for remediation works or further investigation. This assessment was used to support Council's capital renewal plan. Several bridges were identified to be in very poor condition and recommended for additional structural investigations (Level 3).

An assessment of the risks associated with service delivery from bridge infrastructure assets is yet to be undertaken. The outcome of a risk assessment will be to identify critical risks to Council. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develop a risk rating, evaluates the risk, and develop a risk treatment plan for nonacceptable risks.

Risks recommended to be identified during the additional assessments include, but not limited to, the following:

- Integrity of the Structure
- Traffic in excess of Load Limit
- Traffic Collision
- Fire / Flood
- Vehicle leaving the surface of a Bridge.

This has been included in the Improvement Plan for Council to implement.

8.6 Operating & Capital Expenditure

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 period, this provides input into the Long Term Financial Plan aimed at providing the required services in a sustainable manner.

Routine Operations/Maintenance

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again. Maintenance includes reactive (unplanned), planned and specific maintenance work activities. Assessment and prioritisation of reactive maintenance is undertaken by operational staff using experience and judgement.

Annual operations and maintenance expenditure is included on page 10 of this plan is fully funded in the 2022-23 budget as well as in the 2023-32 Long Term Financial Plan.

Unsealed Roads maintenance programs

For unsealed roads, projected expenditure is based on the allowance of operating 3 patrol grading vehicles to average a total of 150km per a month. This is the required average to maintain the number of grading required per type of road as outlined in in 5.3 Construction, Renewal and Maintenance Standards.

The tree trimming allowance has also been increased based on the findings from the 2021 condition assessment. It was determined onsite that approximately 350km length of sheeted roads (Cat 1 to Cat 3) inhibit a vegetation envelope that does not achieve clearance requirements nominated the service levels outlined in 5.3 Construction, Renewal and Maintenance Standards or has vegetation within the road segment that encroaches within the width of the road.

Sealed Roads maintenance programs

For sealed roads, there is historically no delegated maintenance and operational expenditure. However, based on the condition assessment undertaken in 2021, it was evident that pavement remediation works are required to extend the useful life of the sealed road network. The projected operational and maintenance expenditure provides an allowance for treatment activities such as shoulder remediation and pavement patch repairs.

Cross Drains

For cross drains, historically there was no delegated maintenance and operational expenditure as of 2021/2022. Based on the condition assessment undertaken in 2021, a significant portion of cross drains were identified as blocked and hence the projected expenditure is based on cleaning and disposing of blockage material.

Bridges

For bridges, historically there was no delegated maintenance and operational expenditure as of 2021/2022. Following the Level 2 Bridge Inspection, it has been identified that there is a requirement to undertake

An allocation of \$150k is included in the 2022-23 budget and an annual allowance of \$50k p.a. after Year 1 has been included in the Long Term Financial Plan to continue maintenance of the bridge network.

Capital Renewal

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

The condition data collected as part of the 2021 condition audit was used to calculate the remaining life for each asset based on the defined intervention point (Condition End of Life). The estimated renewal cost and intervention point aligns with the standard details outlined later in this report for construction, renewal and maintenance standards based on Council's current level of service. This method was used to develop the capital renewal plan for unsealed roads, sealed roads, floodways and cross drains

The method used to determine the capital renewal expenditure for footpaths is based on the Community demand such that the projected renewal cost provides an allowance for the gradual renewal of footpaths within the township that cater for high-use pedestrian volume. An annual allowance of \$50k has been allocated for the renewal of footpaths.

The method used to determine the kerb renewal expenditure utilises the condition assessment undertaken in 2021. The estimated renewal cost includes an allowance for immediate patch works identified during the condition assessment such that it appears within the backlog.

The information used to develop the capital renewal plan for bridges is based on the Level 2 Condition Assessment undertaken in 2021. Due to the significant cost associated with replacing the bridge and for the purpose of this plan, it has been assumed that a full bridge replacement will not take place. As such, the estimated renewal budget is based on the renewal of individual bridge constituents such as barriers, signage replacement, decking, isolated patching and minor works. The renewal budget also includes an allowance for additional investigation for bridge structures such as Level 3 Structural Assessment and Load Limit Assessments. It should be noted that the results from the Level 3 Structural Assessment will be used to determine future renewal activities. The cost associated with these future renewal activities have not been included within this Plan and will be included in future iterations.

Capital New/Upgrade and Acquisition

New/upgrade expenditure is major work that creates a new asset that did not previously exist or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the Council from land development.

At present the focus is to maintain and improve the existing transport assets through targeted renewal, as such there is limited funding available to add new assets or upgrade the existing assets. As renewal funding reduces and the assets condition is maintained to the appropriate service standards new, or upgrade road asset projects can be scoped and funded whilst remaining sustainable. The associated upgrade expenditure required has not been included within this Plan.

Financial Projections – **Transportation Asset Capital Expenditure**

The financial projections are shown in the following tables for capital renewal and capital new/upgrade have been funded in the Long Term Financial Plan 2023-32 – March 2023.

Projected Capital Expenditure on Replacement/ Renewal of Assets:

Asset Class:	2023-24 \$,000	2024-25 \$,000	2025-26 \$,000	2026-27 \$,000	2027-28 \$,000	2028-29 \$,000	2029-30 \$,000	2030-31 \$,000	2031-32 \$,000
Sealed Roads	1,145	851	835	1,776	654	1,587	697	860	321
Unsealed Roads	427	408	285	307	557	516	864	368	483
Bridges	1,238	-	-	-	-	-	-	-	-
Other Transportation Assets	50	50	50	50	99	1,788	50	50	133
	2,859	1,309	1,170	2,133	1,309	3,892	1,611	1,278	937

Projected Capital Expenditure on New/ Upgraded Assets:

Asset Class:	2023-24 \$,000	2024-25 \$,000	2025-26 \$,000	2026-27 \$,000	2027-28 \$,000	2028-29 \$,000	2029-30 \$,000	2030-31 \$,000	2031-32 \$,000
Appila- Tarcowie Road Bridge	524	-	-	-	-	-	-	-	-
Other Assets	453	-	-	-	-	-	-	-	-
CWMS	-	100	100	100	-	-	-	-	-
	977	100	100	100	-	-	-	-	-

Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition, or relocation. Council has not identified any transport infrastructure assets to be disposed of in the 10-year planning period (medium term).

8.7 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. Council will determine the ability of the existing assets to manage increased usage for new and housing developments as well as demand for wider agricultural vehicular movements. Developers will be required to provide additional infrastructure for the existing network and upgrade where necessary to ensure adequate transportation.

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

Demand Management Plan Summary:

Service Activity	Demand Management Plan
Footpath	Establish key pedestrian trip generators including schools, hospitals, age facilities, develop hierarchy of footpaths, establish footpath upgrade plan including pedestrian pram ramps and road crossings and establish funding requirements to include in further Asset Plans.
Tourist Traffic	Where appropriate develop a case for upgrading certain roads, based on usage, and develop funding applications to support tourism.
Walking Trails	Map walking trails and superimpose the road network, look for linkages and rental agreements and establish a plan to expand the walking trial network if appropriate.
Restricted Access Vehicles (RAV)	Network assessment is complete, actions to be costed and prioritised, link the commodity networks and road categories for construction standards, establish funding gap and upgrade estimates to be included in future asset plans and budgets.
Increase in size of Agriculture Equipment	A further review on the extent of road network that no longer meets clearance widths for large agriculture equipment and define work and costs needed to maintain required clearance and include in future asset plans.
Town Seal Roads	Review of unsealed roads in towns and establish the priority and cost to prioritise and seal the any identified unsealed roads in towns.
Upgrading Unsealed Roads	Review the higher use category 1 roads and any category 2 roads may be upgraded to sealed. Collect traffic counts data and establish criteria for assessing the merit of sealing rural unsealed roads.

8.8 Transportation Assets Levels of Service

The community generally expect that Council will provide transport networks which meets the required Australian and State legislative regulations. Council, in response to customer feedback, has defined service levels in two terms and provides the level of service objective, performance measure process and service target in the sections that follow.

Community Levels of Service

Community levels of service relate to the service outcomes that the community wants in terms of quality reliability, responsiveness, amenity, safety and financing.

Community Levels of Service

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Quality	Roads to be accessible in the majority of weather conditions Footpaths provide safe access for higher pedestrian areas	Sheeted roads to be graded on a periodic basis depending on the type of road category Council maintains a condition-based road register and rolling 5-year renewal plan to manage reseal and resheeting Develop a footpath renewal plan based on high use areas	Plan and budgets match to deliver required levels of service DDA compliance with a focus on high use area
Function/ Capacity/ Utilisation	Road suitable for road user needs	Road use are categorised based on traffic volumes and strategic importance	Road categories are defined and regularly updated and communicated
Safety	Provide safe and suitable roads free from hazards	Number of accidents reported and customer service request	Zero accidents caused by condition

Technical Levels of Service

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 Council undertakes to best achieve the desired community outcomes. The technical level of service for roads, kerbs, pram ramps, cross drains and floodways are shown in the sections that follow.

Technical Levels of Service – Transport Assets

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Operations	Efficiently categorise assets which will consume resources such as manpower, energy and materials (IIMM).	Resource/Expertise/ Capacity System/Process	Information is reliable for decision making
Maintenance	Retain assets in a suitable condition to meet its original service potential in line with expected life	Routine Maintenance performed as set out in road categories Perform reactive maintenance as required	Based on categories Demand is met when required
Renewal	Replace existing assets with assets of equivalent capacity or performance capability (IIMM).	Asset Renewal is planned and occurs in line with established standards and timeframes	Annual works program is delivered
Upgrade	Upgrades are cost effective and meet end user needs and are affordable	Decision making process is established, agreed with Council and followed	All upgrades meet objective

Technical Level of Service – Bridges

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Operations & Maintenance	Bridges are maintained at standard to enable road users to safely access the bridge with no high-risk hazards Bridges have appropriate signage for load limits	Regular inspections of bridges Reactive to customer service requests	All bridges are financially feasible to be maintained at a safe standard with appropriate signage. For bridges that are not viable to maintain, Council to consider decommissioning or changing the load limit depending on usage and traffic routes
Renewal	Bridge components are renewed once the component is at end of life	Undertake condition audit every 4-5 years for all bridges within the network. All components in poor condition to be considered for renewal in the renewal plan	For bridges due for renewal, Council to review bridge usage and determine appropriate replacement that is feasible for the community and financially viable for the Council
Upgrade	Bridges have appropriate load limit and compliant safety components. Upgrade bridge and guard rails were required	Review load limit and traffic logistics of bridge. Undertake Level 3 inspections when required. Review guard rails compliance within bridge inspection report and determine if upgrade is required	All bridges to be compliant for load limit and safety

8.9 Construction, Renewal and Maintenance Standards

This plan has been developed based on assumptions related to the construction and renewal standards set out in the following sections for the seal and unsealed road network.

The Condition score of a road is a measure of the road consumption between 0 and 100 where 0 represents a newly surfaced road and 100 represents a fully deteriorated road. For sealed roads a condition score is determined based on binder age and surface defects. For sheeted roads the condition score of each road is based on the sheeting depth, sheeting condition and drainage condition of the road.

Sealed Roads

The sealed road network is classified as follows:

- Industrial Use
- High Use
- Local Use

The sealed road network is further classified by the performance (excellent, good, fair & poor) of the surface based on historical seal dates, in addition to this the defects assessed at the recent condition assessment such as deformation and cracking have been used to further classify the roads into standard and non-standard.

The unsealed sheeted road network is classified according to its usage and are grouped as follows:

Sheeted Roads

- Category 1 – Sheeted High Use
- Category 2 – Sheeted Medium Use
- Category 3 – Sheeted Low Use
- Category 4 – Formed Graded (Non-Valued)

Township Sealed Roads

Council owns and maintains a township sealed road network totaling approximately 46km in length. The majority of the township sealed network consists of a spray seal surface (41.8km) with approximately 4.2km of hotmix bitumen around Booleroo Centre and Melrose respectively.

The spray seal roads within Council will remain spray seal for the planning period, unless there is a growing community requirement to use hotmix. Hotmix may be considered as the preferred renewal treatment for higher use intersections. All other towns will use spray seals as their main renewal treatment. For new developments road assets are vested to Council. The standard of construction and surfacing treatment is enforced through policies and development approval process.

Township Sealed Road Construction, Renewal and Maintenance Standards

Current Standard for Township Sealed Roads		
Construction Method	Seal Width	<p>Current network seal width ranges from 3.1 metres to maximum 18 metres with an average of 7.8 metres across the township network.</p> <p>New construction of sealed networks will be constructed with minimum 7.2 metres width in accordance with LGA Infrastructure Guidelines.</p>
	Seal Types	Local roads to be constructed with two coat spray seal with high use and heavy intersection roads to 28ategor hotmix bitumen.
	Pavement Width	Pavement width is to lip of kerb or minimum 1 metre either side of seal width.
	Pavement Depth	<p>Pavement depth is assumed to be 300mm for heavy use roads and 200mm for normal use roads.</p> <ul style="list-style-type: none"> ▪ Existing pavements for township sealed roads to 28ategor existing material with a rework and top up to depth as per the above.
Renewal Method	Reseal	<p>Standard renewal of township sealed roads to be a 2-coat spray seal, with future consideration for a combination of 1 coat and 2 coat spray seal depending on road usage.</p> <p>Asphalt wearing surface to be used for heavy use turning locations (i.e. silo intersection, arterial intersections)</p>
	Pavement	<p>The renewal assumption for the purposes of the Plan include:</p> <ul style="list-style-type: none"> ▪ Sealed Heavy Use Road to undertake a full pavement reconstruction of 300mm depth ▪ Existing township roads to re-work existing pavement and import up to 150mm to the required pavement depth.
	Seal Life	<p>The standard life assumption for the purposes of the Plan include:</p> <ul style="list-style-type: none"> ▪ Heavy Use Township Non-Standard Hotmix Bitumen – 20 years ▪ Heavy Use Township Spray Seal – 18 years ▪ High Use Township Hotmix (Non-Standard & Standard) – 20 years ▪ High Use Township Spray Seal – 18 years ▪ Normal Use Township Hotmix (Non-Standard & Standard) – 20 years ▪ Normal Use Township Spray Seal – 18 years
	Pavement Life	80 years
Maintenance Method	Maintenance	<ul style="list-style-type: none"> ▪ Minor works such as pothole repairs on as per need basis ▪ Roadside weed spraying ▪ Gravel shoulder top-ups as required

Rural Sealed Roads

Council owns and maintains a rural sealed road network totalling approximately 83km in length. The spray sealed roads with Council will remain spray seal for the planning period. Hotmix may be considered as the preferred renewal treatment for higher and heavy use intersections. However, this will not be the standard renewal method for rural sealed roads.

Rural Sealed Roads – Construction, Renewal and Maintenance Standards

Current Standard for Rural Sealed Roads		
Construction Method	Seal Width	Current network seal width ranges from 3.1 metres to maximum 11.2 metres with an average of 7.8 metres across the township network. New construction of Rural Sealed Networks will be constructed in accordance with LGA Infrastructure Guidelines with minimum seal width of: <ul style="list-style-type: none"> ▪ Collector: 7.2m minimum ▪ Local Use: 6.2m minimum
	Seal Types	2 Coat Spray Seal
	Pavement Width	Minimum 1m either side of seal
	Pavement Depth	250mm (min) for arterial and collector roads, 200mm for local use (pavement base and sub-base)
Renewal Method	Reseal	Dependent on road use <ul style="list-style-type: none"> ▪ Single coat spray seal (spray seal 7 or 10mm) with an ongoing reseal pattern of 1 coat/2 coat. 2 coats is 10/5 or 14/7mm dependent on road usage. ▪ Roads with high deformation and cracking have been identified as non-standard based on the condition assessment and will attract additional funds for renewal through rehabilitation ▪ Rural intersections between sealed and unsealed to 29ategor standard 2 coat spray seal
	Pavement	Existing pavements for township sealed roads to 29ategor existing material with a rework and top up to depth as per the above (allowance for up to 150mm within renewal expenditure estimates)
	Seal Life	Rural Spray Seal (Standard & Non-Standard) – 18 years
	Pavement Life	Rural Sealed Road Pavement (Standard & Non-Standard) – 80 years
	Signage and Line Marking	Refer AS1742.2
Maintenance Method	Maintenance	<ul style="list-style-type: none"> ▪ Minor works such as pothole repairs on as per need basis ▪ Roadside weed spraying ▪ Gravel shoulder top-ups as required

Current Standard for Rural Sealed Roads

Rural Heavy Use Hotmix Bitumen Road



Rural Non-Standard Spray Seal Road



Rural Standard Spray Seal Road



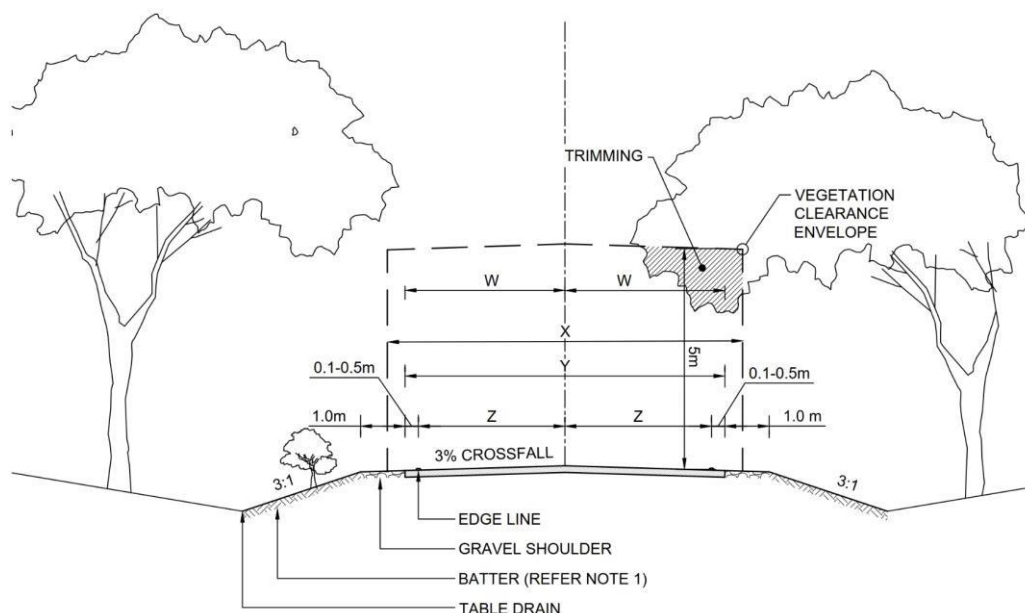
Rural Apron Standard Spray Seal Road



Typical Current Construction Standard for Rural Sealed Roads

The typical construction standard that currently exists related to these categories is shown in the typical section below and the previous table.

Typical Construction Cross Section for Rural Sealed Road



Unsealed Sheeted Roads

Council owns and maintains an unsealed sheeted road network totalling approximately 955km in length. The unsealed network within the region services the community in a wide range of ways from farm gate access, single and multiple residential dwelling access, tourism, and freight access for transportation goods. The unsealed network plays a critical role in supporting the local economy and rural communities.

The development of the road categorises has been undertaken in an initial attempt to allow Council to apply different renewal and construction standards across the road network in an affordable way, rather than having one standard for all unsealed roads. The categories have been developed through a combination of desktop analysis, field observation and feedback from the local community. Unsealed sheeted roads have been categorised as follows:

Sheeted Road Categories

Road Category	Length (km)
Township	23.2
Category 1	101.8
Category 2	236.2
Category 3	593.8
Category 4	521.9
Total (Excluding Cat 5 - track roads)	1476.9

To determine the remaining useful life of any unsealed road in the network the following data has been used:

Road Condition – The condition of each unsealed road segment is stored in the Council’s Asset Management System Conquest. The unique condition score is calculated from field assessed condition data taking into consideration sheeting depth, sheeting condition (extent of subgrade breakthrough), Shape (cross fall) and drainage.

Condition at End of Life (CeoL) – For each road category a condition at end of life has been determined to identify the condition at which intervention is required.

Township Sheeted Roads

Council owns and maintains 23km of sheeted township roads which serves primarily as local residential access routes with low traffic volume.

Township Sheeted Roads – Construction, Renewal and Maintenance Standards

Current Standard for Township Sheeted Roads		
Construction Method	Sheeting Width	Current township sheeted road width ranges from 4 metres to 10.6 metres with an average of 6.2 metres. New sheeted roads will be constructed with minimum 5.2 metre width.
	Sheeting Depth	Township sheeting to be constructed with a depth of 100mm.
	Formation Width	Varies depending on sheeting width, with additional 1 metre either side of seal width.
Renewal Method	Resheet	Supply, place and compact 100mm crushed material to restore the sheeted wearing surface including minor reshaping of existing formation and reinstatement of cut-out drains
	Condition at End of Life	Assume 25-50mm rubble left prior to resheeting with significant (5 to 15%) subgrade break through.
	Useful Life	The sheeted wearing surface is determined to have 24 to 28 years useful life depending on material quality Poor Material Township Sheeted Road – 24 years Average Material Township Sheeted Road – 26 years Excellent Material Township Sheeted Road – 28 years
	Formation	Assume that some reforming of road cross fall and drainage will be required during resheeting of the road surface
Maintenance Method	Maintenance	<ul style="list-style-type: none"> ▪ 1 Patrol Grading per year ▪ Pothole repair as required ▪ Regulatory and warning signs replaced as required (Refer AS1742.2) ▪ Spraying of verges on a needs basis

Typical Township
Sheeted Road





Category 1 Rural Sheeted Roads

Council owns and maintains a Rural Sheeted Category 1 road network totalling approximately 101.8km. These roads generally carry traffic through the Council area and generally connect with DIT (Department of Transport) arterial roads. The roads have a higher standard alignment, reasonable sight distance and formation width to allow heavy vehicles to pass. If funds were available, roads would generally be selected for construction and sealing from this category. This road category may attract roads to recovery funding due to their importance.

Category 1 Sheeted Roads – Construction, Renewal and Maintenance Standards

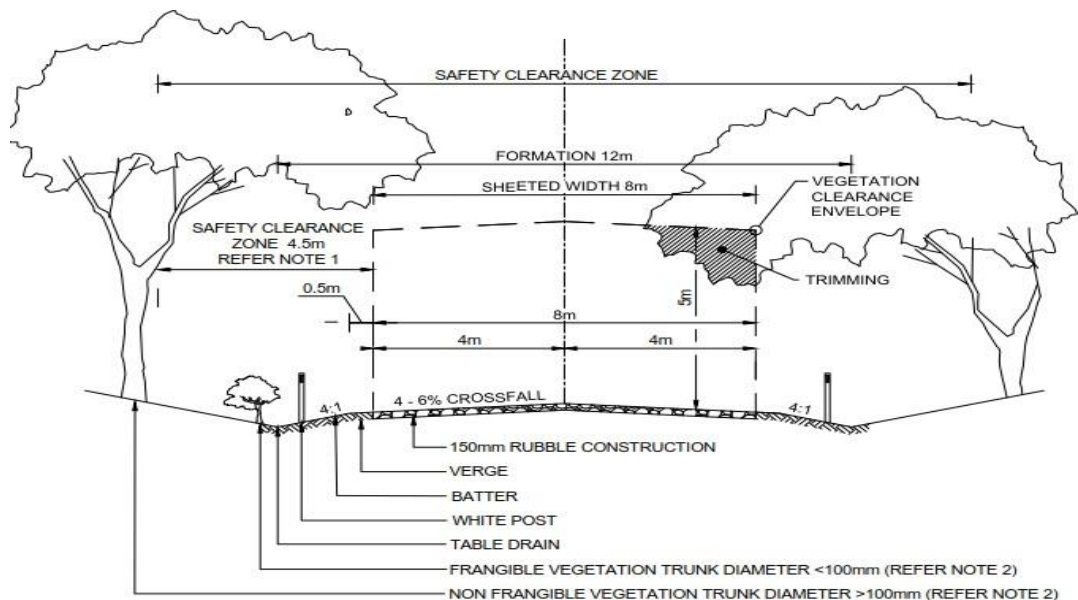
Current Standard for Category 1 Rural Sheeted Roads		
Construction Method	Sheeting Width	New construction of Category 1 Sheeted Roads to be 8m width (currently 6.5 to 9.3m)
	Sheeting Depth	150mm when newly constructed or immediately after a Resheet
	Formation Width	Edge of shoulder to edge of shoulder, additional 2 metres each side of sheeting. 12m minimum width. Note shoulder may or may not have rubble
Renewal Method	Resheet	Supply, place and compact crushed material to restore the sheeted wearing surface including minor reshaping of existing formation to 150mm
	Condition at End of Life	Assume 50mm rubble left prior to resheeting with no to minor (<2%) subgrade break through
	Useful Life	Category 1 Poor Material – 14 years Category 1 Average Material – 17 years Category 1 Excellent Material – 21 years
	Formation	The lower base and earthworks will typically be reworked as part of the resheeting activity, where appropriate to retain integrity of drainage and cross fall. The verge area may build up with road base and vegetation over time and will be managed through maintenance. As a result, no allowance is made for complete verge reshaping.

Maintenance Method	Maintenance	<ul style="list-style-type: none"> ▪ 3 Patrol Grading per year ▪ Minor pothole and patching work as required ▪ Regulatory and warning signs replaced as required (Refer AS1742.2) ▪ Roadside slashing to improve line of sight ▪ Vegetation and weed management
Typical Rural Category 1 Sheeted Road		Typical Rural Category 1 approaching resheet
		

Target Service Level for Rural Category 1 Sheeted Road

The diagram below shows a typical construction cross section to illustrate Council's service target for Rural Sheeted Category 1 roads. It is noted that this is not always achievable due to native vegetation restrictions.

Rural Sheeted Arterial Construction Cross Section





NOTES

1. Safety clear zones have been based on practicable considerations with consideration to Unsealed Roads Manual : Guide to good practice (March 2009) & Austroads Part 6 Guide to Road Design (2010).
2. Frangible vegetation is permitted in the safety clear zone however should be clear in the vegetation clearance envelope.
3. Safety clearance zones are desirable, however not always achievable due to native vegetation restrictions.
4. White post placement is shown at a nominal distance of between 1.2m and 3m from the edge of sheeted material and at structures with consideration to Australian Standard Traffic Controls (AS1742.2).

Category 2 Rural Sheeted Roads

Council owns and maintains a Rural Category 2 Sheeted Road network totalling approximately 236.2km. These are major roads for local and tourist traffic. These roads often form part of the school bus routes and have regular truck movements. Some roads from this category are selected for construction and sealing due to their high maintenance costs, tourist importance and close proximity to townships. This road category may attract Roads to Recovery funding due to their importance.

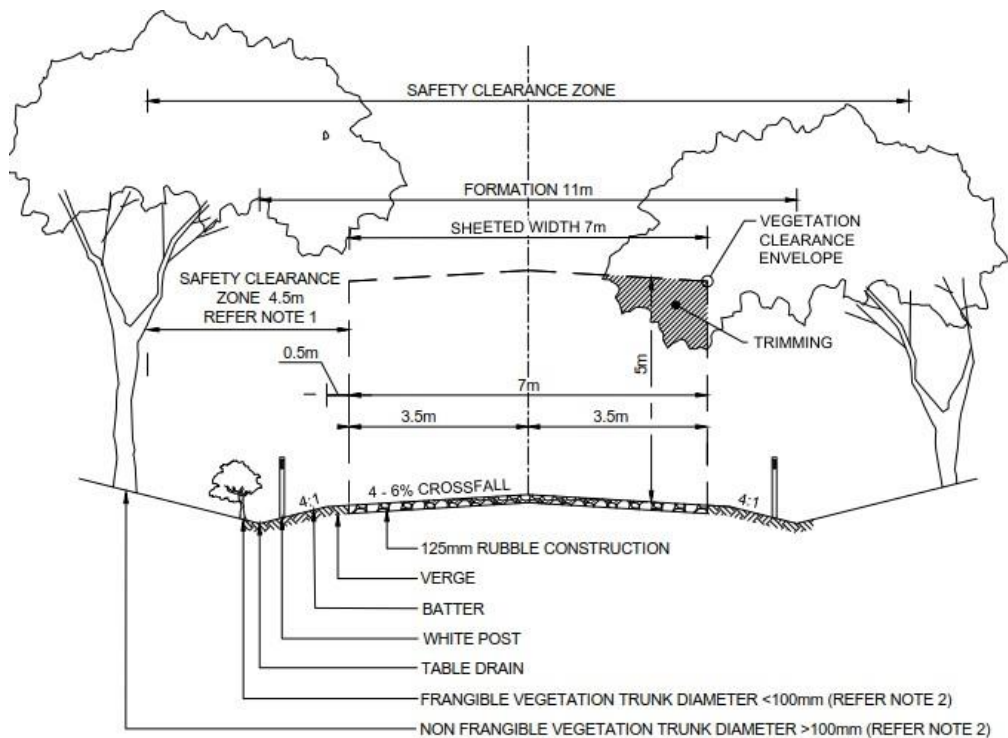
Category 2 Rural Sheeted Roads – Construction, Renewal and Maintenance Standards

Current Standard for Category 2 Rural Sheeted Roads		
Construction Method	Sheeting Width	7m (currently 5.8 to 11.5m)
	Sheeting Depth	125mm when newly constructed or immediately after a resheet
	Formation Width	Edge of shoulder to edge of shoulder generally additional 2.0m each side of sheeting, 11m minimum. Note shoulder may or may not have rubble
Renewal Method	Resheet	Supply, place, and compact crushed material to restore the sheeted wearing surface including minor reshaping of existing formation
	Condition at End of Life	Assume 50mm rubble left prior to resheeting with moderate (2 to 5%) subgrade break through
	Useful Life	Category 2 Poor Material – 14 years Category 2 Average Material – 19 years Category 2 Excellent Material – 21 years
	Formation	The lower base and earthworks will typically be reworked as part of the resheeting activity, where appropriate to retain integrity of drainage and cross fall. The verge area may build up with road base and vegetation over time and will be managed through maintenance. As a result, no allowance is made for complete verge reshaping.
Maintenance Method	Maintenance	<ul style="list-style-type: none"> ▪ 2 Patrol Grading per year ▪ Minor pothole and patching work as required ▪ Regulatory and warning signs replaced as required (Refer AS1742.2) ▪ Roadside slashing to improve line of sight ▪ Vegetation and weed management
Typical Rural Category 2 Sheeted Road		Typical Rural Category 2 approaching resheet
		

Target Service Level Rural Category 2 Sheeted Roads – Typical

The diagram below shows a typical construction cross section to illustrate Council’s service target for rural sheeted Collector Roads. It is noted that this is not always achievable due to native vegetation restrictions.

Rural Sheeted Collector Construction Cross Section (Typical)





NOTES

1. Safety clear zones have been based on practicable considerations with consideration to Unsealed Roads Manual : Guide to good practice (March 2009) & Austroads Part 6 Guide to Road Design (2010).
2. Frangible vegetation is permitted in the safety clear zone however should be clear in the vegetation clearance envelope.
3. Safety clearance zones are desirable, however not always achievable due to native vegetation restrictions.
4. White post placement is shown at a nominal distance of between 1.2m and 3m from the edge of sheeted material and at structures with consideration to Australian Standard Traffic Controls (AS1742.2).

Category 3 Rural Sheeted Road

Council owns and maintains a Rural Category 3 Sheeted Road in the network total approximately 593km. Rural Category 3 Sheeted Road are formed and sheeted and provide all weather access. These roads have been identified as having a higher freight, tourism and social importance than other local roads.

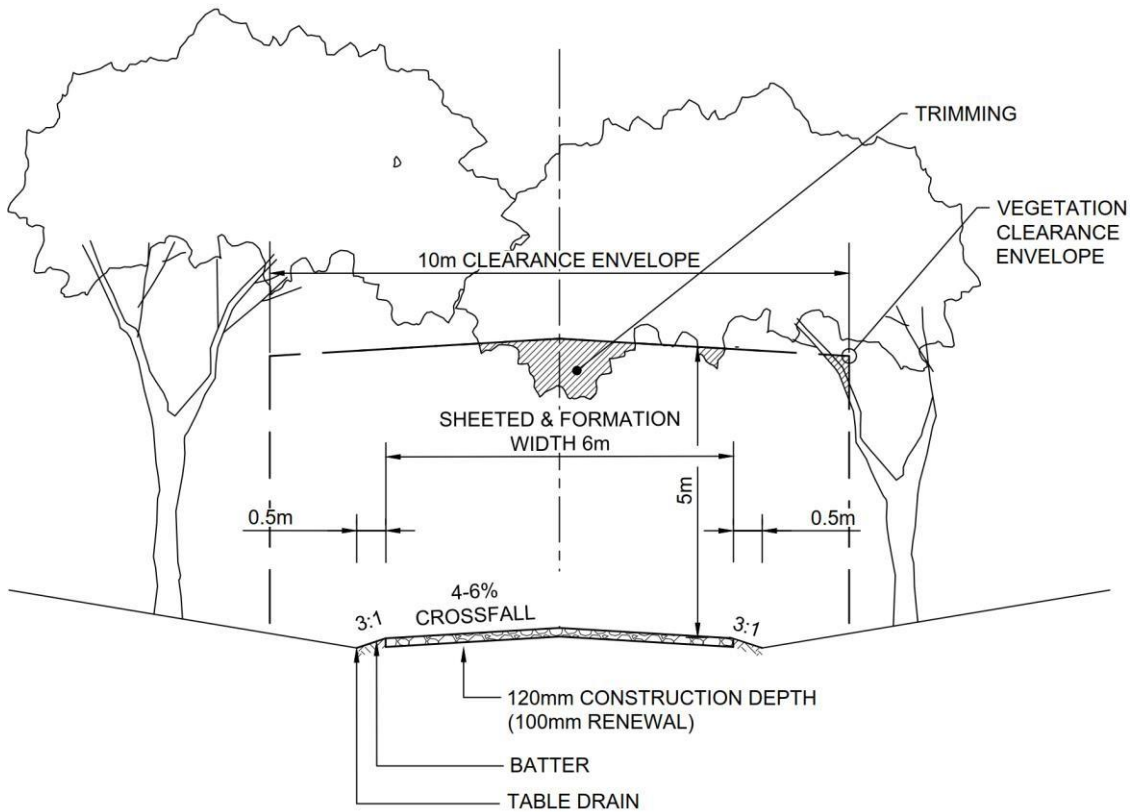
Category 3 Rural Sheeted Roads – Construction, Renewal and Maintenance Standards

Current Standard for Category 3 Rural Sheeted Road		
Construction Method	Sheeting Width	6m (currently 3.5 to 9.8m)
	Sheeting Depth	100mm when newly constructed.
	Formation Width	Edge of shoulder to edge of shoulder generally additional 1.5m each side of sheeting, 9m minimum. Note shoulder may or may not have rubble
Renewal Method	Resheet	Supply, place and compact crushed material to restore the sheeted wearing surface including full reshaping of existing formation and reinstatement, shape, cross fall and verge drainage
	Condition at End of Life	Assume 25-50mm rubble left prior to resheeting with significant (5 to 15%) subgrade breakthrough
	Useful Life	The sheeted wearing surface is determined to have 24 to 28 years useful life depending on material quality Poor Material Township Sheeted Road – 24 years Average Material Township Sheeted Road – 26 years Excellent Material Township Sheeted Road – 28 years
	Formation	Assume that reforming of road cross fall and drainage will be required during resheeting of the road surface.
Maintenance Method	Maintenance	<ul style="list-style-type: none"> ▪ 1 Patrol Grading per year ▪ Minor pothole and patching work as required ▪ Regulatory and warning signs replaced as required (Refer AS1742.2) ▪ Roadside slashing to improve line of sight ▪ Vegetation and weed management
Rural Category 3 Sheeted Road		Typical Rural Category 3 approaching resheet
		

Target Service Level Category 3 Rural Sheeted Road

The diagram below shows a typical construction cross section to illustrate Council’s service target for Category 3 Rural Sheeted Road. It is noted that this is not always achievable due to native vegetation restrictions.

Category 3 Rural Sheeted Road Construction Cross Section



Formed Graded Roads – Category 4

Council owns and maintains a rural formed graded road network totalling approximately 39km. Formed graded roads are low use roads only. Formed graded roads require no road base material to provide a surface. These roads are not renewed by capital works; however, they do undergo maintenance activities (i.e. grading) when damaged.

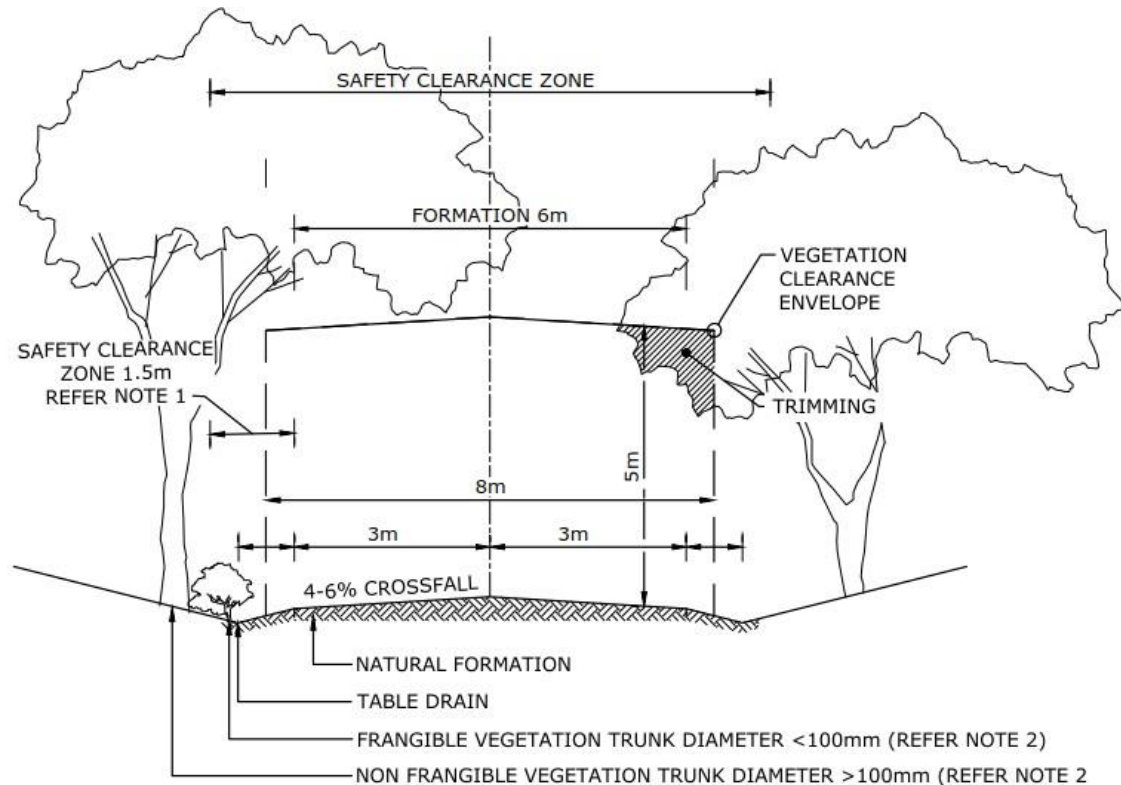
Current Standard for Formed Graded Roads	
Valuation Assumptions	Not a valued asset
Renewal Method	Not a valued asset, maintained by grading when required.
Maintenance Method	Grade when damaged and not serviceable Assumed 1 grade per every 1-2 years

Target Service Level Formed Graded Roads – Category 4

The diagram below shows a typical construction cross section to illustrate Council’s service target for formed graded roads. It is noted that the target service level for rural

roads is not always achievable due to native vegetation restrictions.

Category 4 - Formed Graded Construction Cross Section



NOTES

1. Safety clear zones have been based on practicable considerations with consideration to Unsealed Roads Manual : Guide to good practice (March 2009) & Austroads Part 6 Guide to Road Design (2010).

Kerbing & Spoon Drain

Council owns and maintains approximately 44.6km of kerbing and spoon drains with the majority located within the township. The kerbs are located along several high use roads within the township providing drainage primarily for the sealed road network.

Kerbing & Spoon Drain – Construction, Renewal and Maintenance Standards

Current Standard for Kerbing		
Renewal Method	Renewal Method	Rework base to minimum 100mm depth with kerb or spoon drain to be replaced with equivalent of existing.
	Condition at End of Life	Kerbs and spoon drains are considered to be expired when the condition reaches 100.
	Useful Life	70 years useful life
Maintenance Method	Maintenance	<ul style="list-style-type: none"> Minor defects and minor segment repairs on as-need basis.

Footpaths

Council owns and maintains a network of unsealed and sealed footpaths totalling approximately 44.7km in length. Most of the network is located within high pedestrian volume areas such as townships and tourist tracks.

Footpath Surface Material Type

Footpath Surface Material	Length (km)
Block Paved	2.97
Crusher Dust	29.05
Gravel	3.38
Hotmix Bitumen	1.82
In-situ Concrete	2.99
Natural	1.35
Shell Grit	0.27
Spray Seal	4.28
Total	46.1

Footpath – Construction, Renewal and Maintenance Standards

Current Standard for Footpaths		
Construction Method	Footpath Width	Footpaths to be constructed to achieve DDA compliance where possible such that minimum width of 1.2 metres and 0.9m at choke points.
	Footpath Gradient	Footpaths to be constructed to achieve maximum 2% crossfall and longitudinal gradient as per DDA compliance requirements where possible.
Renewal Method	Renewal	Footpaths to be replaced with equivalent type with allowance for upgrade to DDA compliance where possible (i.e., pram ramp installations, footpath widening and gradient adjustment)
	Useful Life	10 to 100 years depending on the type of surface material: <ul style="list-style-type: none"> ▪ Crusher Dust – 10 years ▪ Insitu Concrete – 50 years ▪ Block Paved – 50 years ▪ Spray Seal – 30 years ▪ Shell Grit – 10 years ▪ Hotmix Bitumen – 30 years
Maintenance Method	Maintenance	<ul style="list-style-type: none"> ▪ Trip hazards and defects as per need basis ▪ Minor segment repairs as per need basis ▪ Unsealed surfaces such as crusher dust, shell grit and all-natural surfaces to be undertaken as maintenance

Floodways

Council owns and maintains a total of 124 concrete floodways with 107 located across sheeted roads and 17 along sealed road networks.

Floodways – Construction, Renewal and Maintenance Standards

Current Standard for Floodways		
Renewal Method	Renewal Method	Replace with equivalent concrete floodway
	Condition at End of Life	Floodways are replaced when the condition is no longer trafficable which is equivalent to a condition end of life of 90.
	Useful Life	70-year useful life
Maintenance Method	Maintenance	<ul style="list-style-type: none"> ▪ Repairs as required (customer request based) ▪ Regulatory and warning signs replaced as required (Refer AS1742.2) ▪ Clearance of vegetation as an on-need basis

Cross Drains

Council owns approximately 415 cross drains variety in size from 225mm pipes to significant 3000x2700mm box culvert crossings.

Cross Drains – Construction, Renewal and Maintenance Standards

Current Standard for Footpaths		
Renewal Method	Renewal Method	<ul style="list-style-type: none"> • Cross drains with crossings less than 600mm in height to be replaced with a headwall and equivalent sized pipe • Cross drains exceeding 600mm and below 900mm in diameter/height that are servicing rail trails to be replaced with pipe or culvert and re-utilise existing headwall • Cross drains exceeding 900mm in diameter/height that are servicing rail trails to be retrofitted with steel framed bridge on existing headwall
	Condition at End of Life	Cross drains are replaced when the condition is no longer trafficable which is equivalent to a condition end of life of 90.
	Useful Life	70-year useful life
Maintenance Method	Maintenance	<ul style="list-style-type: none"> ▪ Clearance of blockages on as-need basis (customer request)

Bridges

Council owns and maintains a total of 19 bridges ranging from pedestrian bridges to trafficable river crossings. Due to the substantial replacement cost associated with bridges, all bridges have been componentised into foundation, span, decking, piers, bearings, abutments, ancillary and barriers.

Replacement of bridges will be dependent on the condition of each component with the most recent condition assessment undertaken in 2021.

8.10 Transportation Asset Management Plan Improvement & Monitoring

The following tasks have been identified for improving future versions of the plan. Council should assign responsibilities and recourses to these tasks as part of the endorsement of the plan.

Tasks identified for improving future versions of the plan

Task No.	Task
1.	Further structural and loading assessment of Council bridges – Refer to Requiring Investigation. Bridges
2.	Develop unsealed road upgrade plan with consideration to demand and service deficiencies
3.	Develop a footpath renewal, upgrade, and maintenance plan to align with service levels and demand
4.	Align current road hierarchy with other freight network i.e. commodity routes to align construction standards
5.	Refinement of current unsealed road categorises to identify areas of over service or under servicing
6.	Assessment and documentation of underground drainage in townships
7.	Undertake routine signage audit of floodways to ensure safety signage are visible and present
8.	Review of Council's maintenance and operational budget which at current does not have allowance for several assets such as sealed roads and critical asset of bridges.
9.	Review and update of Customer and Technical Levels of Service
10.	Following approval of LTFP, determine the funding gap and associated risk and/or service level deficiencies to manage funding gap. Asset Renewal Ratios can then be established.
11.	Undertake valuation for Transport Asset Class and update Plan with valuation outcome.

This plan has a life of 4 years and is due for revision and updating within 2 years of each Council election however, it will be reviewed during annual budget planning processes and amended as required to address any material changes in service levels and/or resources available to provide those services because of budget decisions.

9. Community Wastewater Management Schemes (CWMS)

9.1 Description

Council has worked on the development of a CWMS Asset Management Plan as an improvement to the previous Plan endorsed in October 2015. The purpose of this Asset Management Plan is to provide a clear strategy in relation to the maintenance, renewal, and upgrade of the various Community Wastewater Management Schemes located in the townships of Booleroo Centre, Melrose, Wilmington and Wirrabara respectively.

The CWMS network included within this Plan comprises of the following:

- Booleroo Centre CWMS – Consisting of 6.06km of Pipes, 297 structures (flushing points, manholes, inspection points), 1 pump station, Lagoons and recycled water irrigation
- Melrose CWMS – 8.09km of Pipes, 279 structures, lagoons and recycled water irrigation
- Wilmington CWMS – 12.78km of Pipes, 347 structures, lagoons and recycled water irrigation
- Wirrabara CWMS – Consisting of 10.54km of Pipes, 322 structures, 1 pump station, treatment plant, lagoons and recycled water irrigation.

9.2 Appendix A

Tonkin Consulting Pty Ltd has prepared a comprehensive asset management plan in consultation with Council staff. The full plan is included in appendix A. The operating and capital expenditure identified in this plan is funded in Council's Long Term Financial Plan 2023-32 – March 2023.

Capital Renewal Expenditure

	2023-24 \$,000	2024-25 \$,000	2025-26 \$,000	2026-27 \$,000	2027-28 \$,000	2028-29 \$,000	2029-30 \$,000	2030-31 \$,000	2031-32 \$,000
CWMS	0	32	7	35	80	97	16	99	95

10. Other Assets

10.1 Description

The Other Assets classification includes the following subcategories of asset classes, Weeroona island water assets, community walking trails, playgrounds, streetscaping, foreshore, structures, and other assets.

10.2 Renewal Expenditure

A review of prior years expenditure has been used as a guide to determine an allocation of \$100k per annum towards the renewal of assets in this classification. The allocation is reviewed each year as part of the budget development process with appropriate assets renewed in the relevant budget year.

11. Buildings

11.1 Description

Buildings include Council owned buildings such as the depot, civic centre, sporting clubrooms, district halls, RSL, Freemasons, CFS, MFS, backpackers, aerodromes, foreshore, playgrounds and parks.

11.2 Renewal Expenditure

An allocation of \$230k has been made to address the renewal requirements of this asset classification.

Analysis of the Asset Register was undertaken to identify the assets with less than a 50 year useful life. Components/ assets with a greater than 50 years totalled \$16M whilst those with 50 years or less totalled \$9.4M. The depreciation charge on the less than 50 year assets was \$322k per annum, when compared to prior year capital renewal spends this seems to be a reasonable allocation.

The allocation is reviewed each year as part of the budget development process with appropriate assets renewed in the relevant budget year.

12. Administration Assets

12.1 Renewal Expenditure

An allocation of \$29k per annum has been funded in the LTFFP.

The allocation is reviewed each year as part of the budget development process with appropriate assets renewed in the relevant budget year.

13. References

IPWEA, 2006, NAMS.PLUS3 Asset Management, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org

IPWEA, 2011, Asset Management for Small, Rural or Remote Communities Practice Note, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org

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A Remarkable Experience...



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