



**Shire of Derby /  
West Kimberley**

## **Road Management Plan 2024-29**

### **Sealed Roads**

**May 2024**

## Table of Contents

1. SECTION 1. Executive Summary.....	4
SECTION 2. Introduction .....	5
2.1 Background.....	5
<b>2.1.1 Relationship between the Sealed Road Management Plan and Legislation</b> .....	5
<b>2.1.2 Purpose</b> .....	5
<b>2.1.3 Execution</b> .....	5
<b>2.1.4 Key Stakeholders</b> .....	5
<b>2.1.5 Duty of road users</b> .....	6
<b>2.1.6 Budget</b> .....	6
SECTION 3 – Road Asset Description .....	7
<b>3.1 Overview</b> .....	7
<b>3.2 Assets covered</b> .....	7
<b>3.3 Roads Maintained by the Shire</b> .....	7
<b>3.4 Existing Condition of Shire Roads</b> .....	7
4. ROAD INFRASTRUCTURE HIERARCHY .....	8
<b>4.1 Road Hierarchy</b> .....	8
<b>4.2 Road Treatment by Hierarchy</b> .....	9
<b>4.3 Proposed Maintenance Practices</b> .....	9
<b>4.4 Town and Rural Road Treatments</b> .....	9
5. PERFORMANCE STANDARDS .....	10
5.1 Objectives.....	10
5.2 Hazard and Defect Inspections.....	10
5.3 Hazard Identification .....	10
5.4 Defect Intervention Level and Rectification Time .....	10
6 NETWORK CHALLENGES and POTENTIAL SOLUTIONS .....	10
7 REVIEW OF SEALED ROAD MANAGEMENT PLAN .....	11
8 DEFINITIONS .....	11
APPENDIX 1- FIVE YEAR FUNDING PROGRAMME.....	13
APPENDIX 2 – ROAD HIERARCHY .....	15
APPENDIX 3 – FORWARD WORKS PROGRAMME.....	22
APPENDIX 4 – SERVICE LEVELS.....	25
APPENDIX 5 – DEFECT INTERVENTION LEVEL & RECTIFICATION TIME .....	30
APPENDIX 6 – MAPS SHOWING LOCATION OF SHIRE OF DERBY/WEST KIMBERLEY SEALED ROAD NETWORK.....	32
APPENDIX 7 – VISUAL ASSESSMENT OF ROAD PAVEMENT MANUAL .....	39
APPENDIX 8 – HOW TO ASSESS ROAD PAVEMENT CONDITION MANUAL .....	42
APPENDIX 9 – SAMPLE PHOTOS - SEALED ROAD CONDITIONS .....	46

## Document Control

**Title: Sealed Road Management Plan**

Revision	Date	Details	Authorship	Approved
A	Nov 2015	Draft for Review	MES / AMC	EMTDS
B	Dec 2015	Draft reviewed after comments	MES / AMC	EMTDS
C	Sept 2018	Further review to road ranking system	MES / AMC	EMTDS
1	March 2020	Plan for adoption by Council	MES	DTDS
1.1	April 2021	Annual revision	DTDS	DTDS
1.2	May 2022	Annual revision	DTDS	DTDS
1.3	April 2023	Annual revision	DTDS	DTDS
1.4	April 2024	Annual revision	MoI	DoI

---

## 1. SECTION 1. Executive Summary

In accordance with the previous strategic plan of Council specifically Item 2.3.1 of the Shire of Derby / West Kimberley Strategic Community Plan 2012-2021 – *Develop a road maintenance, grading and upgrading strategy*, and the current Strategic Community Plan 2021-2031 item 4.2.3 – *Encourage and facilitate the maintenance and development of infrastructure that connects our communities* the Infrastructure Services Department originally developed a Sealed Road Strategy and is now undertaking annual reviews of the strategy as a working document. The roads within the strategy have undergone a review and various inspections to ensure the current maintenance practices for our sealed roads is accurate and getting the community the best value for their money.

The purpose of this *Sealed Road Management Plan (this Plan)* is to establish a management system for Shire of Derby / West Kimberley (the Shire) for the discharge of its duty to inspect, maintain and repair its public roads based on policy and operational objectives as well as available resources.

This Plan has been prepared in accordance with the requirements of the following statutory requirements:

- Local Government Act 1995
- Local Government Regulations 1996
- Department of Local Government Integrated Planning and Reporting Framework
- AS/ISO 55001:2014 Asset Management – Management Systems – Requirements

In accordance with the requirements of these documents, this plan includes and references:

- i. A Road Register with a description of those assets on sealed roads for which the Shire is responsible;
- ii. The standard or target service level for those assets to be maintained by the Shire; and
- iii. A management system that documents how the Shire discharges its duty to inspect, maintain and repair sealed roads for which it is responsible.

Inspection activities are undertaken at frequencies relative to the road hierarchy while the prioritisation of maintenance and repair activities are based on an assessment of the risks associated with individual defects.

A tolerable level of defect is defined as a condition that does not require immediate attention based on a standardised risk assessment and future programmed works are scheduled.

In establishing its budget priorities, the Council seeks to strike a balance between the need to invest in new infrastructure for a growing community while providing levels of service consistent with community expectations for existing assets.

Road based maintenance and rehabilitation works are coordinated by the Shire's Infrastructure Services Department using a combination of internal and external labour and equipment. Detailed operational procedures specify how the various activities are to be undertaken and the technical standards to be achieved.

Community requests for works to be undertaken are recorded in the council's customer request system. This system has full audit capability and individual requests can be updated as works are programmed or undertaken so that customers who enquire can be advised of the status of their request.



## SECTION 2. Introduction

### 2.1 Background

#### 2.1.1 Relationship between the Sealed Road Management Plan and Legislation

The Local Government Act 1995 and the Local Government Regulations 1996 establish the powers, duties and functions of Local Government authorities.

The Department of Local Government Integrated Planning and Reporting Framework (the Framework) and its Guidelines outline the minimum planning and reporting methodology to achieve the outcomes prescribed in the legislation. They are not intended to restrict the range of processes that may be undertaken within a local government to achieve those outcomes. The Framework also requires Local Government authorities to develop and publish road management plans incorporating the performance of their duties in relation to the inspection, maintenance and repair of roads, having regard to the type of road, the resources available to the council and its budgetary and policy priorities.

#### 2.1.2 Purpose

The purpose of this Road Asset Management Plan is to ensure Council has in place a plan that helps Council to achieve the following objectives –

1. Ensure that a safe and efficient network of Shire public roads is provided primarily for travel and transport.
2. Provide a structure for a road management plan which will ensure that the public roads in the Shire of Derby/West Kimberley –
  - are capable of functioning as they were built to function;
  - are able to meet future needs in a growth environment; and
  - continue to meet the needs and expectations of the community and other key stakeholders.
3. Within that structure, advance Council's road management practice to achieve the strategic objectives of Council's Strategic Community Plan 2021-2031 under section 4.2.3 Encourage and facilitate the maintenance and development of infrastructure that connects our communities.
4. Prioritise management to provide the best value for money to the community whilst respecting budget restraints.
5. Adhere to good practice of road construction and management.

#### 2.1.3 Execution

To achieve the objectives in Clause 2.1.2, this Plan provides details in the following key management areas that are central to Council's role as the road authority for municipal public roads –

- a) Provide descriptions of the types of road and road-related infrastructure assets covered by this Plan.
- b) Set up a road hierarchy classification to facilitate the setting of performance standards. The details are in Section 4, Road Infrastructure Hierarchy.
- c) Set relevant performance standards to help with the discharge of Council's duties. The details are in section 5, Performance Standards.
- d) Address network wide challenges faced by the road network. The details are in section 6, Network Challenges and Potential Solutions.

#### 2.1.4 Key Stakeholders

Key stakeholders who will be affected by this Sealed Road Management Plan in the Shire of Derby / West Kimberley include –

- The community - ratepayers, residents, business, industry, health, education.
- Road users such as pedestrians, bicyclists, motorcyclists, public transport passengers and vehicle drivers and passengers.

- Transport service providers - transport operators, bus operators and service providers supporting the delivery of transport and freight services.
- Emergency services.
- Public Utilities such as water, sewerage, drainage, electricity, telephone, telecommunications and other like services
- Land / mine developers and their respective consultants and contractors.
- Road authorities / agencies of State and Federal governments.
- Federal and State government departments and agencies such as the Department of Housing, the Department of Health, the Department of Indigenous Affairs and the Parks and Wildlife Service.
- Private road owners such as pastoral stations, indigenous communities, business, industry, body corporate.
- Elected representatives.
- Council staff and consultants and contractors.

#### **2.1.5 Duty of road users**

Whilst Council has certain duties and responsibilities, this Plan is predicated on the basis that the road users also have certain obligations and responsibilities to drive safely according to the prevailing conditions, to have regard to the rights of other road users, the community and infrastructure managers, and to avoid damaging infrastructure.

#### **2.1.6 Budget**

The annual Budget has been developed within an overall financial planning framework that guides Council in identifying community needs and expectations over the short, medium and long term. In preparing the annual Budget, funding requirements for each year are linked with the objectives contained in the *Strategic Community Plan 2021-2031*

In relation to road and road-related infrastructure assets that provide road transport service, Council recognises the importance of balancing appropriate performance standards with what the communities able to afford and sustain. In balancing the funding level for the inspection, maintenance, repairs, upkeep, rehabilitation and renewal of road and road-related infrastructure assets, Council gives regards to the following key considerations –

- preservation of existing assets in an appropriate and safe working condition;
- market constraints in manpower, plant and equipment, building materials and contractors; and
- budget / financial constraints.

The performance standards set in Section 5 of this Plan reflects such balance.

Appendix 1 details the proposed 5 Year Funding Programme. Funding sources for this programme include:

- Road Project Grants – funded 2/3 Main Roads WA Regional Road Group to 1/3 Local Government
- Roads to Recovery – 100% Commonwealth funded, funding restricted to road infrastructure, current programme expires 30 June 2024 – new program will begin on the 1 July 2024.
- Federal Assistance Grant (FAG) – road portion of grant, no restriction on eligible projects
- Direct Grant – restricted to use on road projects
- Remote Aboriginal Access Roads (RAAR) – funding not included in Appendix 1 as this funding is restricted for rural roads which are generally unsealed. Funding apportioned 2/3 Commonwealth, 1/3 State
- Blackspot – restricted to approved projects based on either Crash Statistics or Road Safety Audit. Federal Blackspot 100% Commonwealth funded, State Blackspot 2/3 State and 1/3 Local Government funded.

## SECTION 3 – Road Asset Description

This section provides the details of road infrastructure and road-related infrastructure assets that are being covered under this Plan.

### 3.1 Overview

The Shire of covers an area of approximately 119,842 square kilometres, with a population of approximately 8,300 persons spread between towns, communities and pastoral stations.

In regard to rural roads, and town sealed roads assets the Shire is responsible for –

- 101.36 kilometres of sealed public roads;
- Approximately 763,500m<sup>2</sup> of sealed public roads.
- Roads are measured in Single Lane Kilometres (SLK)
- Sides of the road are designated according to the SLK (ie. Left / Right from SLK 0.00 to end of road)

### 3.2 Assets covered

The road infrastructure assets covered in this Plan are –

- trafficable road pavements

Road-related infrastructure assets to be covered in future revisions of this plan include:

- kerbs
- road shoulder and verge
- road drains including features such as culverts and table drains
- guide posts / signs
- paths including footpaths and shared paths.

### 3.3 Roads Maintained by the Shire

Current Shire of Derby/West Kimberley policy accepts the responsibility for the maintenance of all current public roads listed within the Shire's RAMM database. Some roads are also identified as part of Main Roads WA's "Roads 2030 Regional Road Development Strategies" identifying them as a road of significance where additional funding may be available through the annual Road Project Grants funding programme.

### 3.4 Existing Condition of Shire Roads

The existing condition of the Shire's roads vary quite considerably from road to road and across the Shire. It is proposed that the works programme shall be reviewed annually and defined by a hierarchy and inspections on the condition of the network.

Below are some photographic examples of the Shire's road network and some of the influencing factors that will be discussed within the hierarchy. TALIS Consultants completed a visual condition assessment of the road network at the end of 2014 and produced a Forward Works Programme (FWP) which has been used as a basis for the FWP contained within this Road Management Plan.







Influencing Element	Indicative Photograph		
<b>Demand</b> <ul style="list-style-type: none"> <li>Very High (&gt;1000vpd*)</li> <li>High (500-1000vpd)</li> <li>Medium (200-500vpd)</li> <li>Low (100-200vpd)</li> <li>Very Low (&lt;100vpd)</li> <li>*vpd - vehicles per day</li> </ul>	 <p>High Demand Main Street</p>	 <p>Medium Demand Industrial Area</p>	 <p>Very Low Demand Rural / Remote</p>
<b>Road Type</b> <ul style="list-style-type: none"> <li>Unkerbed</li> <li>Kerb one side</li> <li>Kerb both sides</li> </ul>	 <p>Kerb both sides Built up both sides</p>	 <p>Kerb one side Built up one side</p>	 <p>Unkerbed Rural / remote</p>

Figure 1: Possible Road Section Category Matrix

## 4. ROAD INFRASTRUCTURE HIERARCHY

This section describes the hierarchy classification proposed in this Plan. A hierarchy classification for Shire roads assists in determining relevant performance standards (see Section 5) for key maintenance areas such as inspection, maintenance and repairs. It also assists in other management activities such as allocating resources and specifying design and construction standards.

### 4.1 Road Hierarchy

A hierarchy classification is used to group roads on the basis of the service levels that they provide in a road transport network. The hierarchy system then allows a service level to be provided or give a more accurate indication on what the road provides to the general community. The categories of service that have been used within this plan are as follows;

- Businesses (number of businesses on a road)
- Town Planning Scheme zoning (possibility of increased density and traffic)
- Visitor accommodation facilities along road
- School zone along road
- Traffic Volume (used to determine usage on road)
- Restricted Access Vehicle route
- Road Classification (as per RAMM)
- Road importance to SDWK Road Network (included in Roads 2030)

For Shire public roads, a Five tier hierarchy classification is proposed. Roads are classified through 1 to 5 in accordance with the above factors.

*1 (Road Importance – Very High)*

Roads of this classification are in a poor condition where routine maintenance will not increase the life of the asset to the expected standard. Subsequently, they require urgent reconstruction to remediate any structural pavement defects.

*2 (Road Importance – High)*

Roads of this classification are in a fair condition where the intervention period for pavement reconstruction can be extended by resealing the pavement.

*3 (Road Importance – Medium)*

Roads of this classification are in a reasonable condition where a reseal will extend the life of the asset to the expected standard.

*4 (Road Importance – Low)*

Roads of this classification are in a good condition and only require minor routine patching to maintain the asset to the expected standard.

*5 (Road Importance – Very Low)*

Roads of this classification have been constructed, reconstructed or resealed within the last 5 years to maintain the asset to the expected standard.

A Summary of each road's proposed rating is included in Appendix 1

#### **4.2 Road Treatment by Hierarchy**

The road hierarchy as attached in Appendix 1 defines the roads in accordance with the categories selected by the officers conducting the review. The categories defined the roads by use, what they service and importance under both Roads 2030 and RAMM. What the hierarchy does not take into account is the unaccountable factors that can only be determined onsite or by officers familiar with the use of the road.

Subsequently, there cannot be a road treatment by hierarchy alone. However, it can significantly help to gain a broad understanding of the network and develop the plan for the road treatment, along with local knowledge around use and seasonal conditions.

#### **4.3 Proposed Maintenance Practices**

As discussed previously, options for the ongoing management of the Shire's road network have historically been determined using a combination of local knowledge and engineering standards. This has resulted in some roads being reconstructed and some roads being regularly maintained, whilst other roads have not been maintained at all.

This plan was prepared to provide the greatest long and short term benefit to the Shire of Derby/West Kimberley as the asset manager, and also to the thousands of users of the road whether they are pastoral Station users, tourists or the many service agencies and other motorists travelling the road network.

#### **4.4 Town and Rural Road Treatments**

Proposed Treatments are included in the Forward Works Programme attached in APPENDIX 3.

## 5. PERFORMANCE STANDARDS

In this Section, Council sets the performance standards for the following operational functions in roads, pathways and ancillary areas –

- Defect inspection
- Hazard identification
- Defect intervention level and rectification time

### 5.1 Objectives

The objectives of setting performance standards –

(1) Ensure public safety – achieved by regular Hazard Inspections and being responsive to hazard notification.

(2) Protect road infrastructure assets – achieved by carrying out regular Defect Inspections and developing planned maintenance repairs to avoid or minimise impairment to the asset's highest and best use potential. This is essential for providing the best value for money for the Shire and the delivery of road transport service at the lowest practicable cost to the communities.

(3) Ensure an appropriate level of statutory protection against civil liability claims based on balancing available Council resources.

### 5.2 Hazard and Defect Inspections

These will be carried out by Technical Services staff to see how best to rectify the issue. These inspections will use the criteria contained within the Institute of Public Works Engineering Australasia's Practice Note 9 2015 – Road Pavements, Visual Assessment (Condition Assessment and Asset Performance Guidelines). This document is an industry standard that rates various road conditions (eg. cracking, stripping, flushing, edge break) from 1 to 5 and has photos corresponding to each score to assist with on-site assessment.

### 5.3 Hazard Identification

Hazards will be assessed by a competent Officer in accordance with the requirements of AS/ISO 31000:2018 – Risk Management – Guidelines.

### 5.4 Defect Intervention Level and Rectification Time

Proposed defect intervention levels and rectification times are detailed in the table in Appendix 5.

## 6 NETWORK CHALLENGES and POTENTIAL SOLUTIONS

The current condition of the Shire's sealed road network is below average due to the lack of resealing that was carried out prior to 2015. It is proposed to carry out regular inspections of the sealed roads to monitor their condition and assist in planning for future maintenance. 2023/24 Financial Year funding was allocated on a ratio of 11.4% sealed network and 88.6% unsealed network. The sealed to unsealed funding ratio could vary from 60:40 to 20:80 and is subject to change due to external funding arrangements and flood damage received during nominated storm events. Please note the dynamic of the 2023/24 budget is heavily impacted by flood damage work.

As funding criteria is expected to get more stringent into the future, the Shire will need to investigate options available to maximise work undertaken for the available funding, and subsequently providing best value for money for the community.

Currently, the only local source of sealing aggregate in the West Kimberley is Kimberley Quarries at Nillibubbica between Derby and Broome. The next closest source is the Tabba Tabba Quarry located approximately 50km east of Port Hedland. This lack of a local source of sealing aggregate means that the amount of resealing able to be completed is reduced due to the cost of transporting the aggregate from the quarry to site.

## 7 REVIEW OF SEALED ROAD MANAGEMENT PLAN

The review of this Sealed Road Management Plan will be continual as the Infrastructure Department will closely monitor the road network to ensure a “Best Value for Money Spend” by the Shire and a useable network of roads, unless otherwise directed by the Council and/or the CEO.

## 8 DEFINITIONS

- **“Act”** is the *Local Government Act 1995*.
- **“Ancillary area”** is any area designated by the Shire used by motor vehicles and cyclists connecting to a roadway, for example, car park, rest stop or recreation facility.
- **“Arterial roads”** are highways and declared main roads, which are managed by the state government through Main Roads WA.
- **“Bridge and major culverts”** mean a structure having a clear span greater than 1.80 metres or a pipe culvert having a waterway area greater than 3 square metres.
- **“Defect”** means any form of failure in the road surface, including potholes, displaced pavement, cracking and road collapses. These types of failure can be structural and/or visual in nature.
- **“Maintenance”** with respect to roads is defined to mean repairs to pavement failures. These repairs take the form of pothole patching to heavy patching. The purpose being to make the road trafficable until reconstruction works can be carried out.
- **“MRWA”** refers to Main Roads Western Australia
- **“Municipal roads”** are roads for which the Shire is the responsible road authority and are listed in the RAMM inventory that details the Shire’s road network.
- **“Non-road infrastructure”** means infrastructure in, on, under or over a road which is not road infrastructure and includes water and sewerage mains, telecommunication cables, electricity poles and street lights, bus shelters, vegetation and the like.
- **“Pathway”** means a footpath, shared path or recreational path constructed or developed by the Shire for use by members of the public other than with a motor vehicle and does not include any pathway which has not been constructed by or for the Shire or with its approval.
- **“Private roads”** include roads in reserves, roads to and in indigenous communities and roads on private property, pastoral leases, private pathways or any crossovers providing access from private properties to a public road or public highway. The Shire is not responsible for the care and maintenance of these roads, pathways or crossovers.
- **“RAV”** means a Restricted Access Vehicle such as a “B-Double” or roadtrain that is restricted to travelling on MRWA approved routes.
- **“RAMM”** is the Road Asset and Maintenance Management database detailing road assets and associated infrastructure maintained by the Shire.
- **“Response time”** is the time to respond to a hazard or defect measured from when the hazard or defect is identified by or notified to the council. Days to respond are business days, ie Monday to Friday, 5 days per week excluding public holidays.
- **“Roads 2030 Significant Road”** means a municipal road that has been included in the Main Roads WA “Roads 2030 Regional Strategies for Significant Local Government Roads” and is eligible for funding from MRWA Regional Road Group Road Project Grants;
- **“Road infrastructure”** means infrastructure which forms part of a roadway, pathway or shoulder including-

- (i) Structures forming part of the roadway, pathway or shoulder; and
- (ii) Materials from which a roadway, pathway or shoulder is made.

This also includes bridges, culverts, floodways / causeways, plus materials such as asphalt, bitumen, gravel, line marking, guideposts and signs.

- **“Road-related infrastructure”** means infrastructure which is installed or constructed by the relevant road authority for road-related purposes to—
  - (i) Facilitate the operation or use of the roadway or pathway; or
  - (ii) Support or protect the roadway or pathway;
- **“Road Management Plan”** means this plan.
- **“Roadside”** means any land that is within the boundaries of a road reserve (other than the shoulders of the road) which is not a roadway or a pathway and includes the land on which any vehicle crossing or pathway which connects from a roadway or pathway on a road to other land has been constructed;
- **“Shire”** means the Shire of Derby/West Kimberley;
- **“SLK”** means Single Lane Kilometre, the method of measuring or locating a point on a road;
- **“Thoroughfare”** is defined in the *Local Government Act 1995* and includes a street, right of way, cul-de-sac, bypass, bridge or ford, shared path, bicycle path, any culvert or kerbing or other land (*nature strip, roadside and private driveway not included*) or works forming part of the road.
- **“Vehicle crossover (driveway)”** is the crossing which provides access from the road to the property boundary. The property owner is responsible for the construction and maintenance of the crossover.



**APPENDIX 1- FIVE YEAR FUNDING PROGRAMME**

FIVE YEAR CAPITAL SEALED ROAD FUNDING PROGRAMME SUMMARY						
Description	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29
Roads to Recovery Funding +	\$595,545	Unknown	Unknown	Unknown	Unknown	Unknown
Main Roads WA (MRWA) Regional Road Group (RRG) Funding #	\$810,000	\$810,000	\$810,000	\$810,000	\$810,000	\$810,000
Shire Funded Works *	\$468,000	\$600,000	\$600,000	\$600,000	\$600,000	\$600,000
Federal Assistance Grant (FAG) ^	\$556,556	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000
Direct Grant ^	\$346,227	\$346,227	\$346,227	\$346,227	\$346,227	\$346,227
MRWA State Blackspot Funding	Project basis only	Project basis only	Project basis only	Project basis only	Project basis only	Project basis only
MRWA Federal Blackspot Funding	Project basis only	Project basis only	Project basis only	Project basis only	Project basis only	Project basis only
Disaster Recovery Funding Arrangements (flood damage)	AGRN 1044 4,000,000	AGRN 1044 5,900,000	Project basis only	Project basis only	Project basis only	Project basis only
Total Expenditure	\$6,776,328	\$8,356,227	\$2,456,227	\$2,456,227	\$2,456,227	\$2,456,227

+ Current 5 year Roads to Recovery Funding Arrangements expire 30 June 2024. New funding program expected with increase in funds estimated between 20-40%. Shire will have to increase allocation of FAG's and Council funds to offset increase.

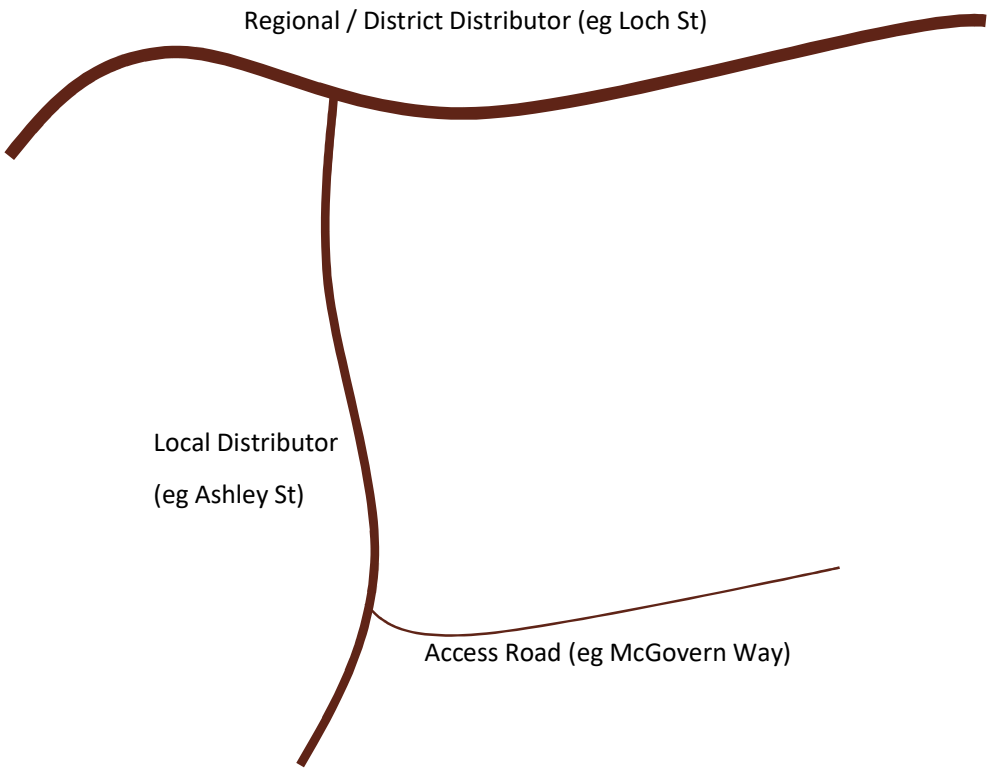
# Restricted to roads (sealed and unsealed) classified as significant in the Main Roads WA "Roads 2030 Regional Strategies for Significant Local Government Roads" document.

\* Shire Funded Works includes allocation of \$184,000 for Flood Damage contribution (mandatory expenditure prior to claiming reimbursement from Disaster Recovery Funding Arrangements).

^ Funding amounts subject to change on an annual basis.

**NB All figures in the above table are based on current funding. The funding in the above table also funds the capital projects on the Shire's unsealed road network.**

**APPENDIX 2 – ROAD HIERARCHY**



**These tables give an overall inspection ranking of the road according to data and statistics.**

RAV Route	
No	0
Yes / Used	5

RAMM Classification	
1	Access road
2	Local Distributor
3	Regional / District Distributor

Roads 2030 Significant Road	
0	No
2	Yes

N° of Businesses	
1	1
2	2
3	3
4	4
>4	5
Rec Facility	5

Visitor Accommodation	
No	0
Yes	1

Zoning	
Rural	0
R5	1
R10 / R12.5	2
R15	4
R20 / R25	7
R30 / R35	10
Industrial	3

Traffic Volume AADT	
0-20	0
20-100	1
100-200	2
200-500	3
500-1000	4
>1000	5

Score Table	
Score	Hierarchy
1	Very Low
2	Very Low
3	Very Low
4	Very Low
5	Very Low
6	Low
7	Low
8	Low
9	Low
10	Low
11	Medium
12	Medium
13	Medium
14	Medium
15	Medium
16	High
17	High
18	High
19	High
20	High
21+	Very High

Hierarchy Number	
Very High	1
High	2
Medium	3
Low	4
Very Low	5

Road #	Road	Number of Businesses	Zoning (R Code)	Roads 2030 Significant Road	Visitor Accommodation	Traffic Volume (peak)	RAV Route	School	RAMM Classification	Total	Hierarchy	Hierarchy Number	Asset Mgmt Ranking	Safety Ranking	Total Score	Priority
0134	ADCOCK ROAD	0	0	0	0	1	5	0	1	7	Low	4	3	4	11	4
0067	ALEXANDER STREET	0	4	0	0	2	0	0	1	7	Low	4	3	3	10	3
0063	ALFONSAS STREET	1	4	0	0	4	0	0	1	10	Low	4	4	3	11	4
0034	ANDERSON STREET	0	7	0	0	4	0	1	2	14	Medium	3	5	2	10	3
0058	ARCHER STREET	0	4	0	0	2	0	0	1	7	Low	4	4	4	13	5
0056	ASHLEY STREET (Panton to Loch)	5	1	2	0	3	5	0	2	18	High	2	5	2	9	3
0056	ASHLEY STREET (Loch to Alfonsas)	1	4	2	0	5	5	0	2	19	High	2	4	2	8	2
0056	ASHLEY STREET (Alfonsas to Guildford)	5	2	2	1	5	5	0	2	22	Very High	1	5	2	8	2
0056	ASHLEY STREET (south of Guildford)	0	2	2	0	4	5	0	2	15	Medium	3	3	2	8	2
0223	BALANINJANGARRI ROAD	1	3	0	0	2	0	1	1	8	Low	4	5	2	11	4
0220	BANKSIA STREET	0	4	0	0	2	0	0	1	7	Low	4	5	5	14	5
0089	BAOBAB STREET	0	4	0	0	3	0	0	1	8	Low	4	3	3	10	3
0104	BARNETT WAY	0	2	0	0	2	0	0	1	5	Very Low	5	3	3	11	4
0127	BAUHINIA PLACE	0	2	0	0	2	0	0	1	5	Very Low	5	3	3	11	4
0059	BEAVEN STREET	0	4	0	0	2	0	0	1	7	Low	4	1	3	8	2
0086	BELL CREEK WAY	1	0	0	0	2	0	0	1	4	Very Low	5	2	3	10	3
0137	BELL ROAD	5	3	0	0	2	5	0	1	16	High	2	4	2	8	2
0148	BENNING PLACE	0	1	0	0	0	0	0	1	2	Very Low	5	5	5	15	5
0152	BLOODWOOD CRESCENT	0	7	0	0	3	0	0	1	11	Medium	3	5	5	13	5
0052	BLYTHE STREET	0	4	0	0	3	0	0	1	8	Low	4	3	5	12	4
0130	BRAND STREET	1	3	0	1	3	0	0	1	9	Low	4	1	3	8	2
0122	BREARLEY STREET	5	3	0	0	3	5	0	1	17	High	2	3	3	8	2
0226	BROLGA DRIVE (Boab Estate)	0	4	0	0	0	0	0	1	5	Very Low	5	4	3	12	4
0157	BROOME STREET	2	3	0	0	2	5	0	2	14	Medium	3	3	2	8	2
0232	BROWN STREET	0	4	0	0	2	0	0	1	7	Low	4	4	4	12	4
0014	CALWYN YARDAH-NOONKANBAH ROAD (SLK 0.00-0.03)	5	0	2	0	1	5	1	1	15	Medium	3	3	2	8	2
0158	CAMBALLIN RD (GNH –Camballin turnoff)	5	0	2	1	3	5	1	3	19	High	2	3	2	7	2
0158	CAMBALLIN RD (Camballin turnoff to Camballin)	2	0	2	1	3	5	0	3	16	High	2	3	2	7	2
0022	CAMBALLIN-MYROODAH ROAD	0	0	2	0	3	5	1	2	13	Medium	3	3	2	8	2
0005	CAMBALLIN-NOONKANBAH ROAD (SLK 0.00-0.46)	0	0	0	0	2	5	0	1	8	Low	4	4	2	10	3
0057	CARNARVON STREET	1	1	0	0	2	5	0	1	10	Low	4	4	2	10	3
0173	CASSIA CLOSE	0	10	0	0	1	0	0	1	12	Medium	3	4	4	11	4
0020	CHERRABUN ROAD (SLK 0.00 – 0.03)	3	0	2	0	2	5	0	1	13	Medium	3	3	3	9	3
0019	CHRISTMAS CREEK ROAD (SLK 0.00-0.03, 1.20-2.00)	5	0	2	0	2	5	1	1	16	High	2	2	1	5	1
0035	CLARENDON STREET (Loch to Hensman)	5	5	2	1	5	0	0	2	20	High	2	3	2	7	2
0035	CLARENDON STREET (Elder to Hardman - west bound)	5	5	2	1	5	0	0	2	20	High	2	2	3	7	2
0035	CLARENDON STREET (Elder to Hardman - east bound)	5	5	2	1	5	0	0	2	20	High	2	2	3	7	2
0075	COLEMAN STREET (CAMBALLIN T/S)	0	0	0	0	1	5	0	1	7	Low	4	5	2	11	4
0069	COLEMAN STREET (DERBY T/S)	0	5	0	0	2	0	0	1	8	Low	4	3	4	11	4
0125	CONWAY STREET	5	3	0	0	1	5	0	1	15	Medium	3	3	4	10	3
0171	COOLIBAH WAY	0	2	0	0	2	0	0	1	5	Very Low	5	4	4	13	5
0180	CORKWOOD COURT	0	2	0	0	1	0	0	1	4	Very Low	5	5	5	15	5
0217	CURTIN ROAD	1	3	0	0	0	5	0	3	12	Medium	4	1	2	7	2
0153	CYCAD COVE	0	2	0	0	1	0	0	1	4	Very Low	5	2	3	10	3
0233	CYPRESS COURT	0	2	0	0	1	0	0	1	4	Very Low	5	4	5	14	5
0065	DELEWARR STREET	1	2	0	0	3	0	0	1	7	Low	4	5	5	14	5

Road #	Road	Number of Businesses	Zoning (R Code)	Roads 2030 Significant Road	Visitor Accommodation	Traffic Volume (peak)	RAV Route	School	RAMM Classification	Total	Hierarchy	Hierarchy Number	Asset Mgmt Ranking	Safety Ranking	Total Score	Priority
0244	DELEWARR STREET SERVICE ROAD	0	10	0	0	1	0	0	1	12	Medium	3	4	5	12	4
0218	DERBY AIRPORT ROAD	5	3	0	0	1	5	0	2	16	High	2	1	2	5	1
0237	DOLLARBIRD STREET (Boab Estate)	0	2	0	0	0	0	0	1	3	Very Low	5	1	5	11	4
0077	DURACK ROAD (CAMBALLIN T/S) SLK 0.00 – 0.56	2	0	0	1	1	5	0	1	10	Low	4	5	5	14	5
0077	DURACK ROAD (CAMBALLIN T/S) SLK 0.56 – 0.98	0	0	0	0	0	0	0	1	1	Very Low	5	1	4	10	3
0172	EDGAR STREET	0	2	0	0	1	0	0	1	4	Very Low	5	2	4	11	4
0043	ELDER STREET	5	5	0	0	2	5	0	1	18	High	2	2	2	6	2
0136	EMANUEL WAY	5	3	0	1	4	5	0	1	19	High	2	3	2	7	2
0066	FAIRBAIRN STREET	0	2	0	0	3	0	1	1	7	Low	4	1	2	7	2
0114	FALLON ROAD	5	3	0	0	4	0	1	2	15	Medium	3	3	2	8	2
0143	FIELD STREET	0	1	0	0	1	0	0	1	3	Very Low	5	1	3	9	3
0113	FITZROY STREET (east of Derby Hwy)	2	0	2	0	3	0	0	2	9	Low	4	4	4	12	4
0113	FITZROY STREET (Derby Hwy to Steel St)	5	3	2	0	4	5	0	2	21	Very High	1	2	2	5	1
0113	FITZROY STREET (west of Steel St)	1	2	2	0	4	5	0	2	16	High	2	4	3	9	3
	FITZROY RIVER LOW LEVEL CROSSING	0	0	0	0	2	0	0	1	3	Very Low	5	1	3	9	3
0155	FLYNN DRIVE	2	2	0	0	4	0	1	1	10	Medium	3	2	4	9	3
0119	FORREST ROAD (GNH to Fallon Rd)	4	3	2	1	5	5	0	2	22	Very High	1	2	2	5	1
0119	FORREST ROAD (Fallon Rd to Russ Rd)	1	1	2	0	3	5	0	2	14	Medium	3	4	2	9	3
0119	FORREST ROAD (Russ Rd to Buruwa)	1	1	2	0	3	5	0	2	14	Medium	3	2	2	7	2
0105	FORREST STREET (Derby)	0	3	0	0	1	0	0	1	5	Very Low	5	4	3	12	4
0135	GALVANS WAY	0	0	0	0	1	5	0	1	7	Low	4	4	5	13	5
0016	GEIKIE GORGE ROAD SLK 0.00 to SLK 0.25	0	0	2	0	3	5	0	3	13	Medium	3	1	1	5	1
0016	GEIKIE GORGE ROAD SLK 0.25 to SLK 0.55	0	0	2	0	3	5	0	3	13	Medium	3	1	1	5	1
0016	GEIKIE GORGE ROAD SLK 0.55 to SLK 1.72	0	0	2	0	3	5	0	3	13	Medium	3	1	1	5	1
0016	GEIKIE GORGE ROAD SLK 1.72 to SLK 15.78	0	0	2	0	3	5	0	3	13	Medium	3	1	1	5	1
0082	GEIKIE PLACE	0	2	0	0	1	0	0	1	4	Very Low	5	3	5	13	5
0109	GRANVILLE STREET	1	1	0	0	0	0	0	1	3	Very Low	5	1	3	9	3
0112	GUILDFORD STREET (east of Derby Hwy)	2	0	0	0	2	5	0	2	11	Medium	3	3	2	8	2
0112	GUILDFORD STREET (Derby Hwy to Millard St)	3	3	0	0	4	5	0	2	17	High	2	2	2	6	2
0112	GUILDFORD STREET (Millard St to Ashley St)	0	2	0	0	4	5	0	2	14	Medium	3	2	2	7	2
0151	HAKEA PLACE	0	2	0	0	1	0	0	1	4	Very Low	5	4	4	13	5
0062	HANSON STREET	0	3	0	0	1	0	0	1	5	Very Low	5	4	5	14	5
0044	HARDMAN STREET (Villiers to Loch)	2	5	0	1	4	0	0	1	13	Medium	3	4	5	12	4
0044	HARDMAN STREET (Loch to Clarendon)	1	5	0	0	4	0	0	1	11	Medium	3	1	4	8	2
0044	HARDMAN STREET (Clarendon to Rowan)	4	5	0	0	4	0	0	1	14	Medium	3	2	4	9	3
0046	HENSMAN STREET (Villiers St to Loch St)	1	5	0	0	4	0	1	1	12	Medium	3	3	2	8	2
0046	HENSMAN STREET (Loch St to Clarendon St)	0	5	0	0	3	0	0	1	9	Low	4	4	2	10	3
0156	HENWOOD CLOSE	0	2	0	0	1	0	0	1	4	Very Low	5	3	5	13	5
0147	HESELTINE COURT	0	1	0	0	0	0	0	1	2	Very Low	5	4	4	13	5
0064	HEYTESBURY STREET	0	3	0	0	3	0	0	1	7	Low	4	4	4	12	4
0133	HOLMAN STREET	0	4	0	0	3	0	0	1	8	Low	4	2	3	9	3
0070	HOWELL STREET	0	3	0	0	1	0	0	1	5	Very Low	5	3	4	12	5
0239	IBIS WAY (Boab Estate)	0	2	0	0	0	0	0	1	3	Very Low	5	4	4	13	5
0073	JETTY ROAD	5	3	2	0	4	5	0	3	22	Very High	1	1	2	4	1
0240	JETTY BOAT RAMP ROAD	5	3	0	0	4	5	0	1	18	High	2	1	2	5	1
0042	JOHNSTON STREET (Loch St to Clarendon St)	1	5	0	0	2	5	0	1	14	Medium	3	4	2	9	3



Road #	Road	Number of Businesses	Zoning (R Code)	Roads 2030 Significant Road	Visitor Accommodation	Traffic Volume (peak)	RAV Route	School	RAMM Classification	Total	Hierarchy	Hierarchy Number	Asset Mgmt Ranking	Safety Ranking	Total Score	Priority
0042	JOHNSTON STREET (Clarendon St to Rowan St)	5	5	0	1	3	5	0	1	20	High	2	2	2	6	2
0083	JONES PLACE	0	2	0	0	1	0	0	1	4	Very Low	5	3	5	13	5
0041	JULD STREET	1	2	0	0	2	5	0	1	11	Medium	3	2	3	8	2
0188	KINGFISHER LOOP (Boab Estate)	0	2	0	0	0	0	0	1	3	Very Low	5	1	3	9	3
0061	KNOPP STREET	0	3	0	0	1	0	0	1	5	Very Low	5	5	5	15	5
0053	KNOWSLEY STREET EAST (east of Derby Hwy)	1	1	0	0	3	0	0	2	7	Low	4	2	3	9	3
0053	KNOWSLEY STREET EAST (Derby Hwy to Carnarvon St)	1	1	0	0	3	5	0	2	12	Medium	3	2	2	7	2
0053	KNOWSLEY STREET EAST (west of Carnarvon St)	1	2	0	0	3	0	0	2	8	Low	4	3	3	10	3
0145	KNOWSLEY STREET WEST	0	3	2	0	4	0	1	2	12	Medium	3	5	4	12	4
0054	KUNAMARRA STREET	0	3	0	0	2	0	0	1	6	Low	4	2	4	10	3
0162	KURRAJONG LOOP	1	2	0	0	3	0	0	1	7	Low	4	3	4	11	4
0120	LE LIEVRE STREET	4	3	0	0	2	5	0	1	15	Medium	3	1	2	6	2
0090	LENNARD ROAD (SLK 0.00-0.91)	1	0	0	0	2	5	0	1	9	Low	4	1	2	7	2
0243	LINCOLN STREET (CAMBALLIN T/S)	0	0	0	0	0	0	0	1	1	Very Low	5	4	4	13	5
0221	LIVISTONA STREET	0	2	0	0	2	0	0	1	5	Very Low	5	4	5	14	5
0079	LOVEGROVE STREET	0	1	0	1	2	0	0	2	6	Low	4	2	3	9	3
0051	MacDONALD STREET	0	3	0	0	1	0	0	1	5	Very Low	5	1	4	10	3
0118	MacDONALD WAY	0	2	0	0	3	0	0	1	6	Low	4	4	4	12	4
0036	MARMION STREET	3	3	0	0	4	0	1	2	13	Medium	3	4	4	11	4
0078	MAXTED ST	1	0	0	0	0	0	0	1	2	Very Low	5	3	3	11	4
0091	MAY STREET	0	2	0	0	1	0	0	1	4	Very Low	5	3	3	11	4
0108	MC GOVERN WAY	0	2	0	0	2	0	0	1	5	Very Low	5	1	3	9	3
0116	MC LARTY ROAD	3	2	0	0	2	0	0	1	8	Low	4	1	3	8	2
0060	MC LARTY STREET	0	3	0	0	1	0	0	1	5	Very Low	5	3	5	13	5
0117	MILLARD ROAD	0	2	0	0	2	0	0	1	5	Very Low	5	2	5	12	4
0123	MILLARD STREET	5	3	0	0	2	5	0	1	16	High	2	2	2	6	2
0154	MIMOSA STREET	0	2	0	0	3	0	0	2	7	Low	4	4	4	12	4
0150	MINIRITCHIE PLACE	0	2	0	0	1	0	0	1	4	Very Low	5	4	4	13	5
0228	MONGER STREET	0	3	0	0	3	0	0	1	7	Low	4	4	4	12	4
0045	NEVILL STREET	5	5	0	0	5	0	0	2	17	High	2	1	3	6	2
0076	NORDELL STREET (CAMBALLIN T/S)	1	0	0	0	2	5	0	1	19	Low	4	5	5	14	5
0149	NUYTSIA WAY	0	2	0	0	1	0	0	1	4	Very Low	5	4	4	13	5
0163	ORD STREET	0	1	0	0	1	0	0	1	3	Very Low	5	4	3	12	4
0047	OWEN AH CHEE STREET	0	3	0	0	2	0	0	1	6	Low	4	3	4	11	4
0227	PANDANAS WAY	0	2	0	0	1	0	0	1	4	Very Low	5	3	4	12	4
0140	PANTON STREET	1	2	0	0	3	0	0	1	7	Low	4	2	1	7	2
0160	POOLE PLACE	0	2	0	0	1	0	0	1	4	Very Low	5	3	5	13	5
0129	RICHARDSON TERRACE	0	3	0	0	1	0	0	1	5	Very Low	5	2	3	10	3
0126	RODGERS STREET	5	3	0	0	2	5	0	2	17	High	2	2	2	6	2
0049	ROSE STREET	0	3	0	0	1	0	0	1	5	Very Low	5	2	5	12	4
0037	ROWAN STREET (Johnston St to Nevill St)	5	5	0	1	5	5	0	2	23	Very High	1	1	2	4	1
0037	ROWAN STREET (Nevill St to Monger St)	1	3	0	0	5	0	0	2	11	Medium	3	3	3	9	3
0037	ROWAN STREET (Baobab St to Dinner Tree)	0	2	0	0	3	0	0	2	7	Low	4	3	3	10	3
0068	ROWELL STREET	0	3	0	0	1	0	0	1	5	Very Low	5	1	3	9	3
0102	RUSS RD	2	1	0	0	3	5	0	2	13	Medium	3	1	2	6	2
0124	RUSS STREET	4	0	0	0	1	5	0	2	12	Medium	3	3	2	8	2



Road #	Road	Number of Businesses	Zoning (R Code)	Roads 2030 Significant Road	Visitor Accommodation	Traffic Volume (peak)	RAV Route	School	RAMM Classification	Total	Hierarchy	Hierarchy Number	Asset Mgmt Ranking	Safety Ranking	Total Score	Priority
0159	SADLER PLACE	0	2	0	0	1	0	0	1	4	Very Low	5	3	5	13	5
0107	SANDFORD ROAD	0	0	0	1	2	5	0	2	10	Low	4	1	1	6	2
0101	SCRIVENER ROAD	1	2	0	0	2	0	0	2	7	Low	4	3	4	11	4
0132	SHORT STREET	0	3	0	0	2	0	0	1	6	Low	4	2	4	10	3
0103	SKUTHORP ROAD	2	0	0	1	1	5	0	2	11	Medium	3	3	1	7	2
0183	SPINIFEX PLACE	0	2	0	0	1	0	0	1	4	Very Low	5	3	5	13	5
0146	STANLEY STREET (Loch St to Ashley St)	4	1	0	0	3	0	0	2	10	Low	4	2	3	9	3
0146	STANLEY STREET (Ashley St to Juld St)	1	1	0	0	2	0	0	2	6	Low	4	3	4	11	4
0146	STANLEY STREET (Juld St to Waycott St)	0	1	0	0	2	5	0	2	10	Low	4	3	4	11	4
0146	STANLEY STREET (Waycott St to Stanwell St)	6	1	0	0	2	5	0	2	16	High	2	5	2	9	3
0072	STANWELL STREET	3	1	0	1	2	5	0	1	13	Medium	3	4	2	9	3
0085	STEEL STREET (south of Fitzroy St)	1	3	0	0	1	5	0	1	11	Medium	3	4	2	9	3
0085	STEEL STREET (north of Fitzroy St)	1	2	0	0	2	5	0	1	11	Medium	3	3	4	10	3
0144	SUTHERLAND STREET (Loch St to Stanwell St)	3	1	0	0	3	5	0	2	14	Medium	3	4	4	11	4
0144	SUTHERLAND STREET (east of Stanwell St)	2	1	0	1	2	0	0	2	8	Low	4	3	1	8	2
0142	SWAIN STREET	1	2	0	0	3	0	0	1	7	Low	4	3	1	8	2
0219	TEATREE MEWS	0	2	0	0	1	0	0	1	4	Very Low	5	5	5	15	5
0131	TOWER PLACE	0	2	0	0	1	0	0	1	4	Very Low	5	1	4	10	3
0048	VAN EMMERIK STREET	0	3	0	0	2	0	0	1	6	Low	4	2	5	11	4
0038	VILLIERS STREET (Elder to Johnston)	3	5	0	0	3	5	1	1	18	High	2	3	1	6	2
0038	VILLIERS STREET (Johnston to Hardman)	2	5	0	1	3	0	1	1	13	Medium	3	4	4	11	4
0038	VILLIERS STREET(Hardman to Nevill)	0	5	0	0	3	0	1	1	10	Low	4	2	4	9	3
0038	VILLIERS STREET(Nevill to Hensman)	0	5	0	0	3	0	1	1	10	Low	4	3	2	9	3
0038	VILLIERS STREET (Hensman to Swain)	1	5	0	1	3	0	1	1	12	Medium	3	4	1	8	2
0071	WATT STREET	0	3	0	0	1	0	0	1	5	Very Low	5	4	5	14	5
0182	WATTLE STREET	0	2	0	0	0	0	0	1	3	Very Low	5	5	5	15	5
0141	WAYCOTT STREET	3	1	0	0	5	5	0	1	15	Medium	3	2	2	7	2
0121	WELLS STREET	5	3	0	0	3	5	0	1	17	High	2	1	2	5	1
0040	WINDJANA ROAD	1	0	0	1	3	5	0	1	11	Medium	3	1	2	6	2
0055	WODEHOUSE STREET (Ashley St to Gladstone St)	1	1	0	0	4	5	0	2	13	Medium	3	3	3	9	3
0055	WODEHOUSE STREET (Gladstone St to Derby Hwy)	4	2	0	0	3	5	0	2	16	High	2	1	2	5	1
0161	WOOLLYBUTT CORNER	0	2	0	0	2	0	0	1	5	Low	4	4	4	12	4
0128	YEEDA CLOSE	0	2	0	0	1	0	0	1	4	Very Low	5	3	4	12	4
0165	YURABI ROAD (SLK 0.00 – 0.50)	3	0	0	1	2	5	0	2	13	Medium	3	2	3	7	2

TOTAL SCORE	PRIORITY
3 – 5	1
6 – 8	2
9 – 10	3
11 – 12	4
13 - 15	5

## **APPENDIX 3 – FORWARD WORKS PROGRAMME**

Road N <sup>o</sup> .	Road Name	SLK From	SLK To	Width	Area m <sup>2</sup>	Priority	Description	Roads 2030 # Yes / No	Treatment	Comments	2024/25	2025/26	2026/27	2027/28	2028/29
218	Derby Airport Rd	0.44	1.50	6.00	6,960	1	Access Road	No	Reconstruct	Halfway down hill to end around carpark	\$550,000				
016	Geikie Gorge Rd	2.14	2.30	6.30	1,008	1	Local Distributor	Yes	Construct Concrete Floodway	Bungardi Creek	\$915,000				
037	Rowan St	0.00	0.51	8.20	4,182	1	Access Road	No	Reconstruct	Johnston St to west end of island	\$85,632				
044	Hardman St	0.35	0.48	11.20	1,456	3	Access Road	No	Reconstruct	Clarendon St to Rowan St	\$145,600				
	Elder St	0.00				2	Access Road	No	Recon and reseal	Clarendon to Rowan connection	\$300,000				
055	Wodehouse St	0.57	1.01	7.40	3,256	1	Access Road	No	Shoulder Recon and Reseal	Broome St to Derby Hwy	\$400,000				
045	Nevill St	0.00	0.13	8.20	1,066	2	Access Road	No	Reconstruct – dependant on treatment in 23/24	Villiers St to Loch St		\$160,000			
042	Johnston St	0.18	0.30	20-27	2,820	3	Access Road	No	reseal	Loch St to Clarendon St		\$40,000			
042	Johnston St	0.33	0.49	8.20	1,312	2	Access Road	No	Shoulder reconstruction and reseal	Clarendon St to Rowan St		\$118,080			
	Various Roads					1		Yes/No	Reseal, kerbing and footpath			\$509,600			
035	Clarendon St	1.09	1.38	11.4	3,366	2	Local Distributor	Yes	Reconstruct	Hensman St to Loch St		\$40,000			
016	Geikie Gorge Rd	0.00	2.14	6.30	13,482	1	Local Distributor	Yes	Reconstruct	Russ Rd intersection to Bungardi Creek			\$674,100		
016	Geikie Gorge Rd	8.63	9.40	6.30	4,851	1	Local Distributor	Yes	Reconstruct	West of National Park boundary grid			\$242,550		
120	Le Lievre St	0.00	0.10	7.40	740	2	Access Road	No	Reconstruct	Derby Hwy to Wells St, widen intersection Wells St, improve drainage runoff			\$250,000		
037	Rowan St	0.00	0.51	7.40	4,278	1	Access Road	No	Stormwater management	Reworking intersection with Johsnton st to deal stormwater and control water flow down the road			\$256,680		
	Various Roads					1		Yes/No	Reseal, kerbing and footpath				\$368,960		
016	Geikie Gorge Rd	2.30	4.33	6.30	16,128	1	Local Distributor	Yes	Reseal	Northeast of Bungardi Creek				\$650,000	
044	Hardman St	0.18	0.28	8.60	860	2	Access Road	No	Reseal	Loch St to Clarendon St				\$50,000	

[illegible]

**# Roads 2030 Significant roads eligible for Main Roads WA Regional Road Group Road project funding, usually 2:1 Main Roads WA : Shire of Derby/West Kimberley**

Single coat reseal	Approximately \$15.00/m <sup>2</sup>
Asphalt overlay (excluding mob/demob)	Approximately \$80.00/m <sup>2</sup>
Rehabilitation	Approximately \$40.00-\$50.00/m <sup>2</sup>
Reconstruction	Approximately \$80.00-\$100.00/m <sup>2</sup>

## **APPENDIX 4 – SERVICE LEVELS**

Key Performance Measure	Level of Service	Current Performance		Desired Performance		Actions Required to meet desired level of service	Resources Required	Responsibility
		Community Performance Measure	Technical Performance Measure	Community Performance Measure	Technical Performance Measure			
<b>Condition</b>	Sealed roads are well maintained, clean and have the right quality to serve their purpose	Customer maintenance requests	<p>Reactive repairs as reported by customers or as sighted by SDWK personnel</p> <p>Renewed based on anecdotal condition and age</p>	<p>Majority of customers satisfied with overall condition of the road network, in terms of smooth ride</p> <p>Defects Register Created and Maintained</p> <p>Number of defects logged reducing</p> <p>Majority of customers satisfied with the response time to repair seals e.g. Potholes</p>	<p>Sealed network renewal intervention at condition 4 for all components</p> <p>Sealed network inspected and maintained within Maintenance Intervention Levels as per Sealed Road Management Plan</p> <p>Meeting target response times for repairs when implemented</p>	<p>Inspection, log and repair to specifications in Sealed Road Management Plan</p> <p>Analysis of logs to engineer solutions in problem areas.</p> <p>Include target response times for repairs in the Forward Works Programme.</p>	Operational	Works Supervisors / Engineering Technical Officer / Manager Infrastructure Services
	Car parking well maintained, clean and to required standards of compliance	Customer maintenance requests	Maintain and renew to planning requirements and safety audits.	<p>Majority of customers satisfied with the overall condition of the car parking provided</p> <p>Defects Register Created and Maintained</p> <p>Number of defects logged reducing</p> <p>Majority of customers satisfied with the response time to repairs to carpark defects e.g. Potholes</p>	<p>Carpark network renewal intervention at condition 4 for all components with &lt;5% asset outside intervention point</p> <p>Carpark network inspected and maintained within Maintenance Intervention Levels contained within the Sealed Road Management Plan</p> <p>Meeting target response times for repairs</p>	<p>Asset register verified and responsibility for capital and maintenance works resolved with adjacent land owners.</p> <p>Inspection, log and repair to specifications in Sealed Road Management Plan</p> <p>Analysis of logs to engineer solutions in problem areas.</p> <p>Initiate target response times for repairs in the Civil Maintenance Program.</p>	Operational	Works Supervisors / Engineering Technical Officer / Manager Infrastructure Services

	Shared paths are multi use, well maintained, clean and to required standards of compliance	Customer maintenance requests	Maintain and renew to planning requirements and safety audits.	Majority of customers are satisfied with the overall quality and comfort of paths  Defects Register Created and Maintained	Path network renewal intervention at condition 4  Path network is inspected and maintained within Maintenance Intervention Levels contained within the Sealed Road Management Plan	Inspection, log and repair to specifications in Sealed Road Management Plan  Analysis of logs to engineer solutions in problem areas.  Initiate target response times for repairs in the Sealed Road Management Plan.	Operational	Works Supervisors / Engineering Technical Officer / Manager Infrastructure Services
	Unsealed roads managed to minimise disruption to users while maintaining safe road condition	Customer maintenance requests	Grading and drainage chute maintenance as per Unsealed Road Management Plan	Majority of unsealed road users satisfied with road condition.  Defects Register Created and Maintained  Decrease in customer maintenance requests.	Unsealed network inspected and maintained within Maintenance Intervention Levels contained within the Sealed Road Management Plan	Inspection, log and repair to specifications in Sealed Road Management Plan  Analysis of logs to engineer solutions in problem areas  Include target response times for repairs in the Sealed Road Management Plan	Operational	Engineering Technical Officer / Manager Infrastructure Services
	Roadside drainage pits well maintained, intact and clear of debris	Customer maintenance requests	Not included in the Sealed Road Management Plan	Decrease in number of reported blockages  Defects Register Created and Maintained	Roadside drainage pits maintained with Maintenance Intervention Levels contained within the Sealed Road Management Plan when implemented	Create specification for maintenance of drainage pits. Inspection, log and repair to this specification.	Operational	Works Supervisors / Engineering Technical Officer / Manager Infrastructure Services
<b>Function</b>	Efficient & reliably traversable network, with well distributed traffic throughout municipality	Customer Feedback	Reactive improvements as issues occur such as Blackspot.  Road safety audit completed to support Blackspot application.	Majority of residents and businesses believe the network to be efficient and reliable.  Monitor complaints received regarding traffic disruption due to road works.	Monitor traffic counts in RAMM using MetroCount. Implement specific improvements as traffic flows increase  Record and Monitor MRWA data on Blackspot locations, and review RAV network routes	Create a program for traffic flow monitoring inclusive of recording into RAMM and using MetroCount.  MetroCount training through RAMM II (WALGA)	Developer Contributions around new subdivisions for upgrade to surrounding road network.	Engineering Technical Officer / Manager Infrastructure Services

	Traffic control systems are designed to improve traffic flow and community safety	Customer Feedback	MRWA Blackspot locations related to intersections	Majority of residents are satisfied that wait times at intersections are acceptable.  Monitor complaints received regarding traffic disruption due to road works.	Implement specific improvements in next budget year at intersections where;  Increase in traffic flow exceeds capacity of intersection design, Named as MRWA Blackspot or where Safety Audit indicates improvement is required.	Check criteria contained within 3 year capital works programme and annual budget when updated	Operational	Engineering Technical Officer / Manager Infrastructure Services
	Paths designed and managed for all users	Customer Feedback	All new paths are concrete and minimum 1.5m wide	Customer Satisfaction Survey	Increase width of paths to minimum 1.5m at renewal or earlier if funds allow. Add tactile tiles at intersections		Capital	Engineering Technical Officer / Manager Infrastructure Services
	Path connectivity to centres, schools, public transport stops and points of interest	Customer Feedback	Path 5 year future capital plan as budget allows	Integrate paths into the road and open space networks to increase connectivity	Increase new path network outside of new sub divisions as per Path Plan  Construct paths within 12 months of majority of houses being constructed in new sub divisions.	Update future path plan to a 10 year projection and add to the GIS  Review tender specifications for Shared Path Construction	Capacity of annual Shared path Construction Contractor be sufficient for increasing workload	Engineering Technical Officer / Manager Infrastructure Services
	Parking spaces are managed to ensure maximum access to CBD and Shire Facilities for all vehicle types.	Customer Feedback	Maintain planning requirements and safety audits.	Customer Satisfaction Survey	Increase public transport opportunities to reduce pressure on existing parking.  Initiate other non-asset solutions to parking	Minimum size of standard parking bay to be 6.0 x 3.0m		Engineering Technical Officer / Manager Infrastructure Services
<b>Cost/Affordability</b>	To provide and manage the services in the most cost effective manner to the required level of service	Annual report to community on completed projects	Operational expenses within annual budget threshold  Capital works delivered within budget threshold	Majority of community are satisfied that the transport network represent good value for money  Capital projects in annual budget are completed on time and on budget	Record and analyse results of Resealing Programme  Record and analyse results from Asphalt surfacing  All capital works projects are selected based on defined prioritisation and economic criteria  Operating expenditure managed in accordance with adopted budget	Investigate alternative bitumen options (Polymer Modified Bitumen etc) on renewal to improve surface life  Investigate IT solution for road asset inspections including mobile application		Engineering Technical Officer / Manager Infrastructure Services



<b>Safety</b>	The transport network feels safe to users relative to other similar networks	Customer feedback	Annual safety audits  Blackspot program	Majority of the community are satisfied that the road environment is predictable and road	Include safety inspections annually in maintenance inspections	Add safety inspection to the Forward Works Programme	Operational	Engineering Technical Officer / Manager Infrastructure Services
	The path network feels safe to users relative to other similar networks	Customer feedback	Annual safety audits  Insurance claims	Majority of the community are satisfied that the path network is well designed and safe	Access and Inclusion review of all standard designs  Monitor insurance claims for cause of incident	Redesign of crossover and pram ramps  Document, implement and review process for new designs  Process for insurance information	Operational  Budget allocation for training and Road Safety Audits	Engineering Technical Officer / Manager Infrastructure Services
	Blue & White (B&W) Directional Signs are clear, concise and easy to read by drivers	Customer feedback	Limit of 21 characters on signs  Max of 6 B&W signs per intersection  No B&W signs permitted at intersections in CBD	Majority of businesses are satisfied with the blue and white directional sign policy and its implementation	Limit of 21 characters on signs  Max of 6 B&W signs per at intersection  No B&W signs permitted in CBD	No Action	Operational	Engineering Technical Officer / Manager Infrastructure Services
	Traffic management at road works is best practice	Customer feedback		Majority of road users consider work sites to be safe to pass through	No crashes occur at work sites  Traffic Management Plans are documented and implemented  Traffic Management plans on contractor sites are assessed by qualified Shire Officer	Monitor incidents at work sites through OSH process	Operational	Engineering Technical Officer / Manager Infrastructure Services
	Safe driving education programs are well supported by the Shire		Publicity & promotion campaigns	Majority of community agree that road safety is promoted	Support a RoadWise project annually	Continued involvement on Derby RoadWise Committee	Funding grant	Director Technical & Development Services
	Adequate street lighting to enhance safety for road users and pedestrians through visibility and security	Customer feedback	Liveable Neighbourhoods standards being met in new subdivisions  No improvement plan for older areas	Increase in perception of safety through customer survey  Improved visibility on urban roads to Australian Standards	Staged improvement of residential lighting to Liveable Neighbourhoods standards	Audit and implementation plan for retrospective improvement of street lighting	Funding of joint project with Horizon Power	Director Technical & Development Services / Manager Infrastructure Services

## **APPENDIX 5 – DEFECT INTERVENTION LEVEL & RECTIFICATION TIME**



Defect And Intervention Level	Rectification Action	Maintenance Category / Response Time
<b>Potholes</b> Pothole $\geq 300\text{mm}$ diameter & $\geq 100\text{mm}$ depth	Patch potholes $< 1\text{ m}^2$ , in travelled path using bituminous and other appropriate materials to restore the riding surface to a smooth condition	Within 2 business days of customer complaint / report / notification
<b>Depression / Wheel Rut / Dig-out / Crocodile Cracks</b> Ruts or depression $> 50\text{mm}$ below the surrounding pavement surface; Area affected $< 5\text{ m}^2$	Apply a regulating / levelling course of bituminous materials to depressed or rutted areas.	Within 5 business days of report / notification
<b>Cracking</b> All Cracks $> 20\text{mm}$ width	Seal and fill cracks and joints using liquid bituminous sealants	Within 5 business days of report / notification
<b>Tree Root Damage –</b> When pavement is raised $> 150\text{mm}$ (as measured 2m from base of tree).	Ramping out displacement  Permanent repair	Within 2 business days of notification Within 6 months of initial repair

## **APPENDIX 6 – MAPS SHOWING LOCATION OF SHIRE OF DERBY/WEST KIMBERLEY SEALED ROAD NETWORK**





**Shire Sealed Roads – Map 1, Derby Townsite**





**Shire Sealed Roads – Map 2, Derby Jetty**





Shire Sealed Roads – Map 3, Derby Airport & Hamlet Grove





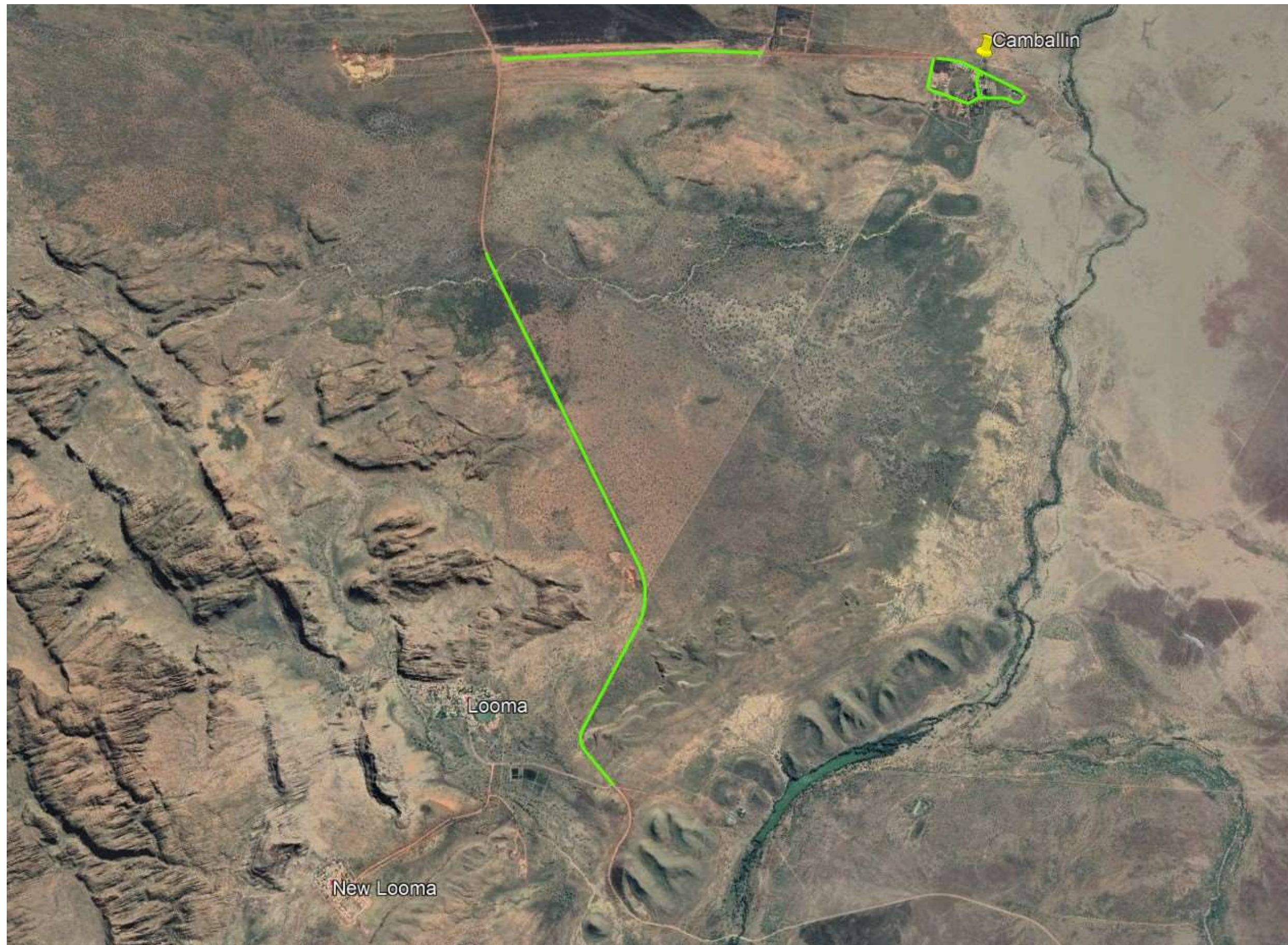
Shire Sealed Roads – Map 4, Fitzroy Crossing Townsite





**Shire Sealed Roads – Map 5, Geikie Gorge Rd / Russ Rd intersection showing communities' private access roads**

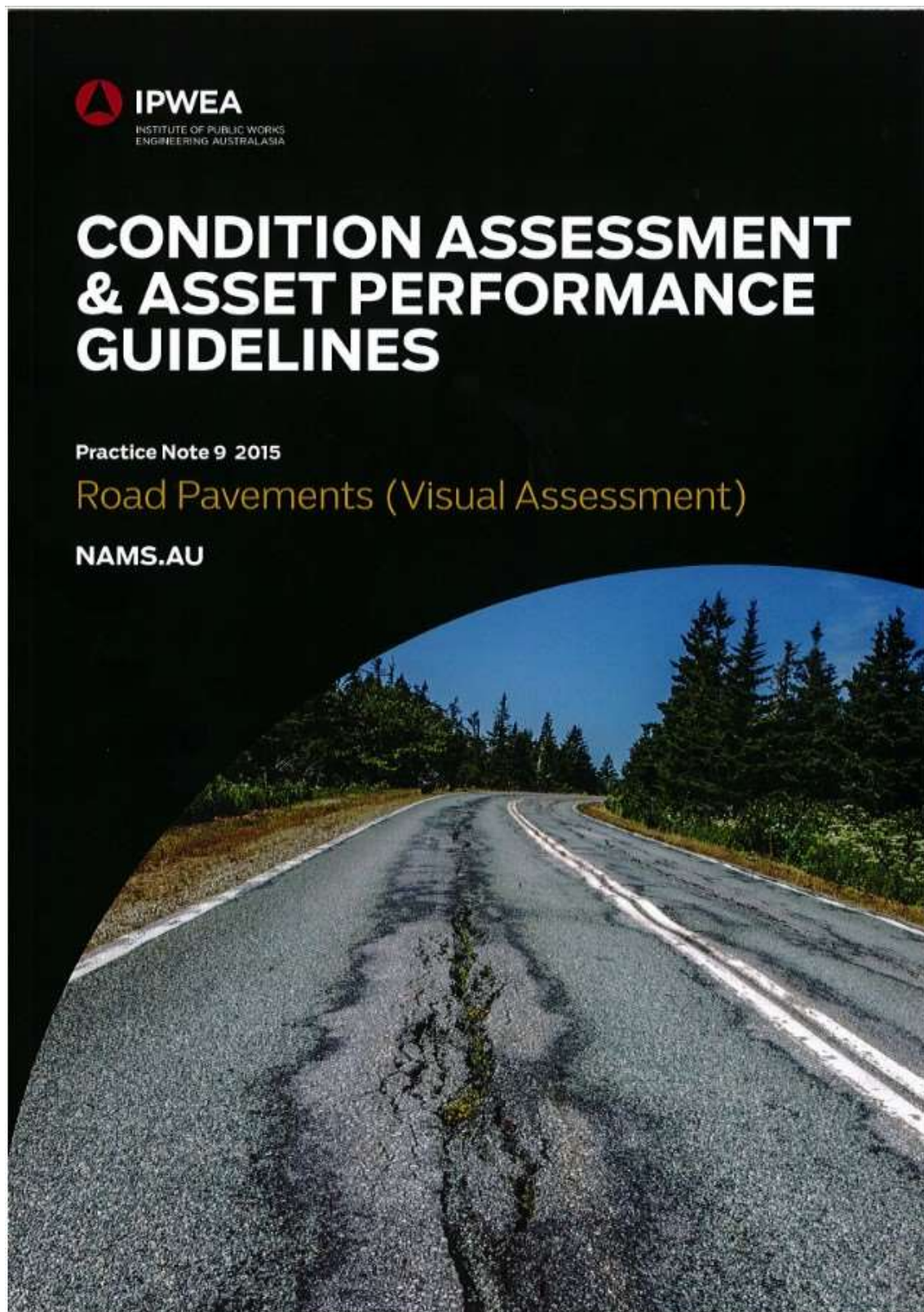




Shire Sealed Roads – Map 6, Camballin Area



## APPENDIX 7 – VISUAL ASSESSMENT OF ROAD PAVEMENT MANUAL



---

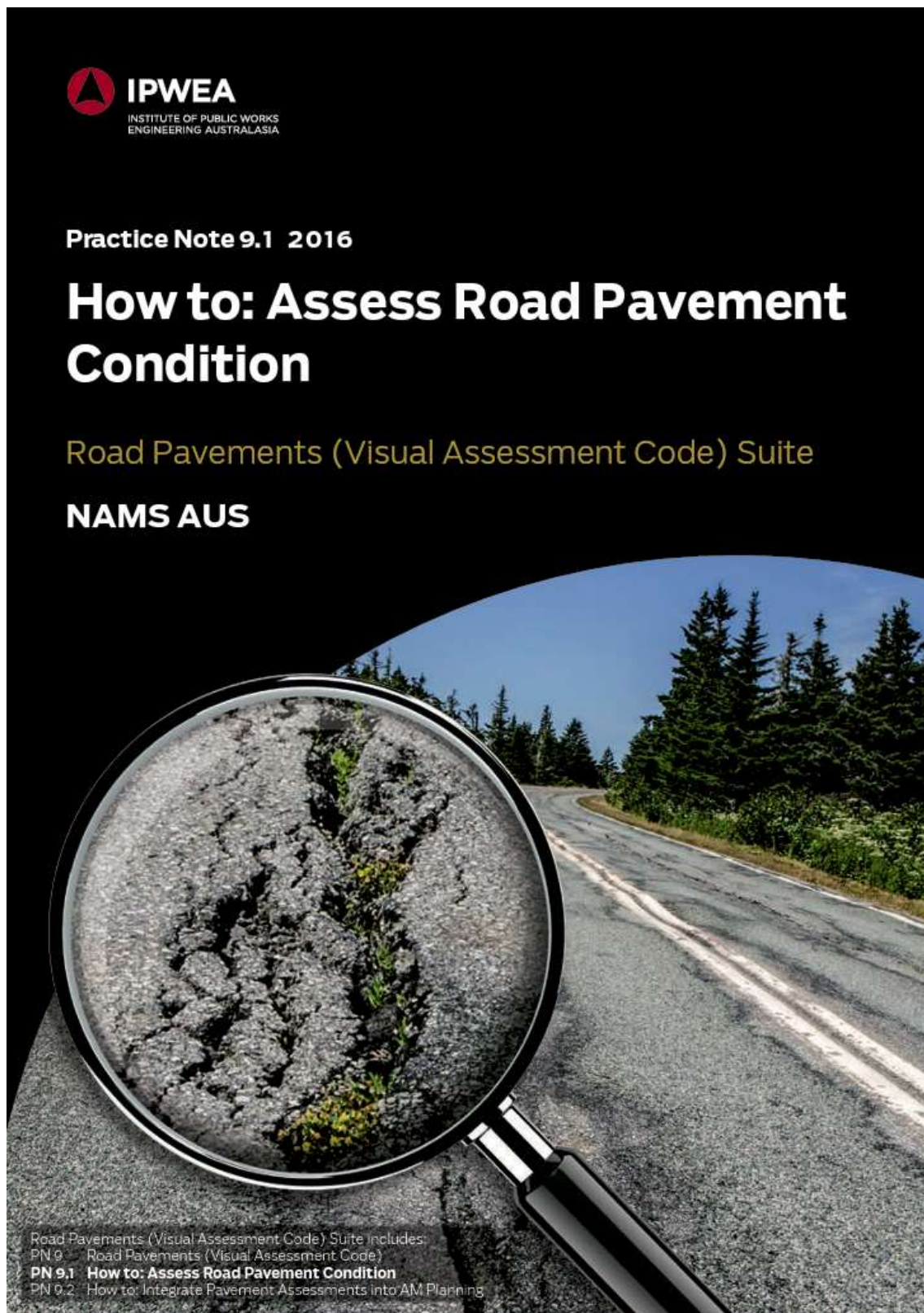
## CONTENTS

<b>ABBREVIATIONS AND ACRONYMS</b>	<b>vii</b>
<b>QUICK GUIDE</b>	<b>viii</b>
<b>1.0 SCOPE OF THESE GUIDELINES</b>	<b>1</b>
<b>2.0 PURPOSE OF THE GUIDELINES</b>	<b>3</b>
<b>3.0 WHAT IS MEANT BY CONDITION ASSESSMENT?</b>	<b>4</b>
<b>4.0 THE FUNCTION OF ROAD ASSETS</b>	<b>5</b>
<b>5.0 LEVEL OF SERVICE</b>	<b>6</b>
<b>6.0 ASSET OWNER'S DUTY OF CARE</b>	<b>8</b>
<b>7.0 RISK MANAGEMENT</b>	<b>10</b>
7.1 Application of Risk Management in Roads Asset Management.....	10
7.2 Core and Advanced Approaches to Risk Management .....	10
7.3 Road Pavement Risk Context .....	10
7.4 Distress Modes.....	10
7.5 Failure Consequences .....	11
7.6 Segment/Component Consequence.....	12
7.7 Likelihood of Failure .....	13
7.8 Risk Analysis .....	13
7.9 Monitoring and Reviewing Risk.....	14
<b>8.0 INFORMATION MANAGEMENT</b>	<b>15</b>
8.1 Define the Organisation's Needs First .....	15
8.2 Information Required.....	15
8.3 Data Capture Options .....	16
8.4 Data Analysis and Reporting.....	16
8.5 Maintaining the Data.....	16
8.6 Implementation of the Strategy Using a Pilot Study.....	17
<b>9.0 RATING SYSTEM FOR ROAD PAVEMENT CONDITION ASSESSMENT</b>	<b>18</b>
9.1 Core Approach .....	18
9.2 Advanced Approach.....	18
<b>10.0 ROAD PAVEMENTS CONDITION DATA SOURCES</b>	<b>22</b>
10.1 Introduction.....	22
10.2 Complaints / Requests Systems .....	22
10.3 Formal Inspection Programs .....	22
10.4 Organisation Staff Knowledge and Reporting of Defects / Needs.....	22
10.5 Other Works Impacts.....	23
10.6 Advanced Data Collection .....	23

<b>11.0</b>	<b>ROAD NETWORK INSPECTION PROCESS</b>	<b>24</b>
11.1	Preliminaries.....	24
11.2	Pre-inspection Process.....	24
11.3	Segmentation.....	25
11.4	Role of Assessor/Inspector.....	25
11.5	Inspection Frequency.....	26
11.6	Workplace Health and Safety.....	26
11.7	Assessing the Segments/Components.....	26
11.8	Condition Survey Data.....	27
11.9	Writing Standard Work Orders.....	27
<b>12.0</b>	<b>DATA ANALYSIS</b>	<b>28</b>
12.1	Introduction.....	28
12.2	Outcomes from Data Analysis.....	28
12.3	Component Level Data Validation.....	28
12.4	Analysis Reporting.....	29
12.5	Future Data Analysis.....	29
<b>13.0</b>	<b>LIFECYCLE ANALYSIS AND LONG TERM FINANCIAL PLANNING</b>	<b>30</b>
13.1	Preliminaries.....	30
<b>14.0</b>	<b>WORK SCHEDULES AND PROGRAMS</b>	<b>32</b>
14.1	Works Orders for Reactive Maintenance Activities.....	32
14.2	Pro-Active Maintenance Planning.....	32
14.3	Capital Expenditure Projects – Renewals and Replacements.....	33
14.4	Capital Expenditure Projects – New Construction and Upgrades.....	33
<b>15.0</b>	<b>IMPROVEMENT PLAN</b>	<b>34</b>
<b>16.0</b>	<b>ISO ASSET MANAGEMENT STANDARDS</b>	<b>35</b>
16.1	The Standards.....	35
16.2	Who will use the Standards.....	36
16.3	Why use the Standards.....	36
16.4	Conformity Assessment.....	36
16.4	Where to access the Standards.....	36
16.5	Applying the Standards as part of Condition Assessment.....	36
16.6	Supplement to the IIMM.....	36
<b>17.0</b>	<b>REFERENCES</b>	<b>37</b>
	<b>APPENDIX 1 – EXAMPLE LEVELS OF SERVICE – ROAD PAVEMENTS</b>	<b>38</b>
	<b>APPENDIX 2 – RISK MANAGEMENT</b>	<b>39</b>
	<b>APPENDIX 3 – VISUAL ASSESSMENT GUIDE</b>	<b>41</b>
	<b>APPENDIX 4 – GAUGING LENGTHS</b>	<b>109</b>



## APPENDIX 8 – HOW TO ASSESS ROAD PAVEMENT CONDITION MANUAL



---

## CONTENTS

<b>1.0</b>	<b>Purpose</b>	<b>1</b>
<b>2.0</b>	<b>Background</b>	<b>1</b>
2.1	The Approach of this Guide.....	1
2.2	Road Asset Condition versus Road Maintenance Defect.....	1
2.3	Core and Advanced Approach.....	2
2.4	Calculation of Condition Scores.....	2
2.5	How to Undertake Condition Surveys Using This Guide.....	2
2.6	Definitions.....	3
<b>3.0</b>	<b>Road Asset Components</b>	<b>3</b>
3.1	Unsealed Road Formation.....	3
3.2	Unsealed Road Pavement.....	3
3.3	Sealed Road Pavement.....	3
3.4	Bitumen Sealed and Asphalt Surfacing.....	4
3.4.1	Cracking of Sealed Surfaces.....	4
3.4.2	Surface Cracking versus Pavement Cracking.....	4
3.5	Rigid Pavements.....	5
<b>4.0</b>	<b>Road Components Condition Assessment</b>	<b>5</b>
<b>5.0</b>	<b>Bitumen Seal Condition Assessment</b>	<b>5</b>
5.1.1	Surface Texture.....	5
5.1.2	Binder Age.....	6
5.1.3	Surface Cracking.....	6
5.1.4	Patching.....	7
5.1.5	Final Bitumen Seal Condition Rating Score.....	7
<b>6.0</b>	<b>Asphalt Seal Condition Assessment</b>	<b>7</b>
6.1.1	Surface Texture.....	7
6.1.2	Asphalt Age.....	8
6.1.3	Surface Cracking.....	8
6.1.4	Patching.....	9
6.1.5	Final Asphalt Seal Condition Rating Score.....	9
<b>7.0</b>	<b>Sealed Pavement Condition Assessment</b>	<b>9</b>
7.1	Roughness.....	9
7.2	Pavement Cracking.....	10
7.3	Rutting.....	11
7.4	Final Sealed Pavement Condition Rating Score.....	12

<b>8.0</b>	<b>Rigid Pavement Condition Assessment</b>	<b>12</b>
8.1	Deformation.....	12
8.2	Cracking.....	12
8.3	Joint Sealant.....	13
8.4	Final Rigid Pavement Condition Rating Score.....	13
<b>9.0</b>	<b>Unsealed Pavement (Gravel) Condition Assessment</b>	<b>13</b>
9.1	Resheet Age.....	13
9.2	Pavement Depth.....	13
9.3	Pavement Material Durability.....	14
9.4	Final Unsealed Pavement Condition Rating Score.....	14
<b>10.0</b>	<b>Unsealed Formation Condition Assessment</b>	<b>14</b>
10.1	Profile and Drainage.....	14
10.2	Driveability after Wet Weather.....	14
10.3	Final Unsealed Formation Condition Rating Score.....	15



**TABLES**

Table 1: Asset Components by Road Type.....	2	Table 50: Asphalt Surface Cracking Severity.....	29
Table 2: Bitumen Surface Texture Defect Rating .....	5	Table 51: Asphalt Patching Defect Rating.....	29
Table 3: Assessment of Binder Age .....	6	Table 52: Manual Roughness Defect Rating.....	30
Table 4: Bitumen Surface Cracking Defect Rating.....	6	Table 53: Pavement Cracking Defect Rating.....	30
Table 5: Bitumen Surface Cracking Extent.....	6	Table 54: Pavement Cracking Extent .....	30
Table 6: Bitumen Surface Cracking Severity.....	6	Table 55: Pavement Cracking Severity .....	31
Table 7: Bitumen Surface Cracking Defect Rating.....	6	Table 56: Sealed Pavement Rutting Defect Rating.....	31
Table 8: Patching Defect Rating .....	7	Table 57: Sealed Pavement Rutting Extent .....	31
Table 9: Asphalt Surface Texture Defect Rating.....	7	Table 58: Sealed Pavement Rutting Severity .....	31
Table 10: Assessment of Asphalt Age .....	8	Table 59: Rigid Pavement Deformation Extent .....	32
Table 11: Asphalt Surface Cracking Defect Rating .....	8	Table 60: Rigid Pavement Deformation Severity .....	32
Table 12: Asphalt Surface Cracking Extent.....	8	Table 61: Rigid Pavement Cracking Extent .....	32
Table 13: Asphalt Surface Cracking Severity.....	9	Table 62: Rigid Pavement Cracking Severity .....	32
Table 14: Asphalt Surface Cracking Defect Rating .....	9	Table 63: Rigid Pavement Joint Sealant Defect Rating.....	32
Table 15: Asphalt Patching Defect Rating.....	9	Table 64: Resheet Age Defect Rating.....	33
Table 16: Manual Roughness Defect Rating .....	10	Table 65: Pavement Depth Defect Rating.....	33
Table 17: Pavement Cracking Defect Rating .....	10	Table 66: Gravel Durability Defect Rating.....	33
Table 18: Pavement Cracking Extent .....	10	Table 67: Unsealed Road Formation Profile and Drainage Defect Rating.....	34
Table 19: Pavement Cracking Severity .....	11	Table 68: Driveability Rating Low Strength Clay Formation .....	34
Table 20: Pavement Cracking Defect Rating.....	11	Table 69: Driveability Rating Medium Strength Loam Formation .....	34
Table 21: Manual Pavement Rutting Defect Rating.....	11	Table 70: Driveability Rating High Strength Gravel Formation .....	34
Table 22: Sealed Pavement Rutting Extent .....	11		
Table 23: Sealed Pavement Rutting Severity .....	11		
Table 24: Sealed Pavement Rutting Defect Rating .....	12		
Table 25: Rigid Pavement Deformation Extent .....	12		
Table 26: Rigid Pavement Deformation Severity .....	12		
Table 27: Rigid Pavement Deformation Defect Rating.....	12		
Table 28: Rigid Pavement Cracking Extent .....	12		
Table 29: Rigid Pavement Cracking Severity .....	13		
Table 30: Rigid Pavement Cracking Defect Rating .....	13		
Table 31: Rigid Pavement Joint Sealant Defect Rating.....	13		
Table 32: Resheet Age Defect Rating.....	13		
Table 33: Pavement Depth Defect Rating.....	13		
Table 34: Gravel Durability Defect Rating.....	14		
Table 35: Unsealed Road Formation Profile and Drainage Defect Rating.....	14		
Table 36: Driveability Rating Low Strength Clay Formation.....	14		
Table 37: Driveability Rating Medium Strength Loam Formation .....	14		
Table 38: Driveability Rating High Strength Gravel Formation .....	15		
Table 39: Roughness Conversion and Rating Guide .....	19		
Table 40: Bitumen Surface Texture Defect Rating .....	26		
Table 41: Assessment of Binder Age .....	26		
Table 42: Bitumen Surface Cracking Defect Rating.....	26		
Table 43: Bitumen Surface Cracking Extent.....	26		
Table 44: Bitumen Surface Cracking Severity .....	27		
Table 45: Patching Defect Rating .....	27		
Table 46: Asphalt Surface Texture Defect Rating.....	28		
Table 47: Assessment of Asphalt Age .....	28		
Table 48: Asphalt Surface Cracking Defect Rating .....	28		
Table 49: Asphalt Surface Cracking Extent.....	28		

**FIGURES**

Figure 1: Condition Assessment Representative Gauging length.....	2
Figure 2: Examples of Bitumen Cracking .....	4
Figure 3: Examples of Stripping Condition.....	5
Figure 4: Examples of Surface Cracking Condition.....	8
Figure 5: Pavement Cross Section Elements .....	16
Figure 6: Measuring Width .....	17
Figure 7: Trafficable Width.....	18

**APPENDICES**

Appendix A – Definitions.....	16
Appendix B – Comparison of Roughness Scales .....	19
Appendix C – Seal Condition Rating Sheet.....	20
Appendix D – Asphalt Surface Condition Rating Sheet.....	21
Appendix E – Sealed Pavement Condition Rating Sheet .....	22
Appendix F – Rigid Pavement Condition Rating Sheet .....	23
Appendix G – Unsealed Pavement Condition Rating Sheet .....	24
Appendix H – Unsealed Formation Condition Rating Sheet .....	25
Appendix I – Field Reference Sealed Bitumen Condition.....	26
Appendix J – Field Reference Sealed Asphalt Condition .....	28
Appendix K – Field Reference Sealed Pavement Condition .....	30
Appendix L – Field Reference Rigid Pavement Condition .....	32
Appendix M – Field Reference Unsealed Pavement Condition .....	33
Appendix N – Field Reference Unsealed Formation Condition .....	34



## APPENDIX 9 – SAMPLE PHOTOS - SEALED ROAD CONDITIONS



Crocodile Cracking, Granville St – Condition 5, Very Poor



Transverse Cracking, Wodehouse St – Condition 5, Very Poor





Block Cracking, Fitzroy St – Condition 3, Fair



Edge Break, Jetty Rd – Condition 4, Poor



Edge Drop Off, Rodgers St – Condition 4, Poor



Deformation (rutting), Jetty Rd – Condition 4, Poor





Ravelling (fretting), Curtin Access Rd – Condition 5, Very Poor



Stripping, Rowell Crt – Condition 5, Very Poor





Potholing, Jetty Boat Ramp Access Road – Condition 5, Very Poor



Polishing, Short St – Condition 5, Very Poor





Flushing (bleeding), Jetty Boat Ramp Access Road – Condition 5, Very Poor



Deformation (shoving), Jetty Access Road – Condition 4, Poor