

ITEM 8.2.3

ATTACHMENT C

ROAD NETWORK ASSET MANAGEMENT PLAN

Shire of Boddington

Road Network Asset
Management Plan

Revision 0.1

Contents

Executive Summary.....	4
Background and Objectives.....	5
Purpose of this Asset Management Plan	5
Focus of this Asset Management Plan.....	5
Corporate Document Relationships	5
Time Period of the AMP and Next Review Date	5
Service Levels	6
Introduction	6
Service Level Performance	6
Stakeholder Key Service Attributes.....	6
Service Level Attributes	7
Demand.....	8
Historic Demand.....	8
Future Demand	8
Demand Management.....	9
Risk Management.....	9
Lifecycle Management Plan	10
Roads' Condition.....	13
Data Confidence and Reliability	17
Inventory & Valuation	17
Lifecycle Management Strategies	25
Financial	26
Projected Expenditure Requirements.....	26
Plan Improvement and Monitoring.....	27
Performance Measures	27
Asset Consumption Ratio.....	27
Asset Sustainability Ratio.....	29
Asset Renewal Funding Ratio.....	30
Improvement Plan.....	30
Monitoring and Review Procedures	30

Executive Summary

The Shire of Boddington owns and maintains 266kms of the road network within its boundary. The network comprises of sealed roads in the urban area and unsealed and sealed roads in the rural area.

This document is the Shire's Asset Management Plan (AMP) for its road network. It outlines the activities that will be carried out over the next ten years to provide and maintain the portfolio. It also details the service levels (standard) the Shire will provide and the resources required to deliver them.

While the document is comprehensive, it is also evolving with the Shire's practice maturity. As such there are a number of actions that have been identified that will improve the AMP's accuracy over time. All readers of this AMP must understand its limitations and applied assumptions before acting on any information contained within it.

Overall, the Shire's road network portfolio is worth approximately \$44.2m. Evidence suggests that the general condition the Shire's roads are very good, and that there is no significant backlog of renewal works. This position is supported with a road portfolio asset consumption ratio of 79% (target band is 50-75%). This aside, there are a lack of other key metrics that would allow the performance of roads to be fully understood (e.g. accessibility, functionality, safety etc.). This, combined with changing service demand needs, may mean that roads may not entirely meet the future needs of the Shire's community.

Looking forward, a number of key improvement actions have been identified that would enable the Shire to better manage its road network portfolio. These have been listed within the Improvement Plan for future implementation.

Background and Objectives

Purpose of this Asset Management Plan

This document is an Asset Management Plan (AMP) for the Shire's road network. These are typically defined as either sealed or unsealed roads. The AMP documents shows how the Shire plans to manage these assets, to deliver services of a specified quality (service levels) and what the associated long term costs are.

Focus of this Asset Management Plan

The AMP focuses on the following road network portfolio.

Asset Type	Length km	Current Replacement Cost
Sealed Road	113	\$28,107,060
Unsealed Road	153	\$16,071,480
TOTAL		\$44,178,540

Table 1: Assets covered by Road Network AMP

Corporate Document Relationships

This AMP integrates with the other following Shire documents:

- = Strategic Community Plan
- = Corporate Business Plan
- = Long Term Financial Plan
- = Annual Budget.

Time Period of the AMP and Next Review Date

The AMP covers a 10 year period and will be next reviewed by 1 July 2019.

Service Levels

Introduction

Service Levels describe the standard (e.g. quality) that the Shire provides from its road assets. These have been developed through the consideration of strategic and policy inputs and perceived customer needs and wants.

Service Level Performance

Table 2 details the service level performance that the Shire provides.

RPI	Performance	Tactic
Accessibility	Unknown	Monitoring performance
Exclusivity	Unknown	Monitoring performance
Financial Sustainability	Unknown	Monitoring performance
Functionality	Unknown	Monitoring performance
Safety	Unknown	Monitoring performance
Water Sustainability	Unknown	Monitoring performance

Table 2: Service Level Performance

Stakeholder Key Service Attributes

Each of the key stakeholders were considered as to what they value and expect from road assets. These needs and wants were captured and have been presented in the table below. Those considered of high importance (frequently occurring) and those which are needed, were then considered to form the basis of the AMP's Service Levels.

Stakeholder	Specific Needs/Wants	Need or Want?	Service Attribute
Shire (Council & Staff)	Roads are managed in a financially sustainable manner	Want	Financial Sustainability
	Roads are maintained in a safe condition so as to minimise the Shire's and users' risk exposure	Need	Safety
	Roads are accessible to all legal users other than Heavy Haulage	Need	Accessibility
	Roads are fit for purpose	Want	Functionality
	Roads enable smooth safe travelling.	Need	Aesthetics
Ratepayers	Roads are provided in an affordable manner	Want	Affordability
Tourists & Visitors	Roads are accessible	Need	Accessibility
	Roads are provided in an affordable manner	Want	Affordability
	Roads are available in all seasons	Want	Availability
	Roads enable smooth safe travelling.	Want	Aesthetics
	Roads are safe.	Need	Safety
Emergency Services	Roads are accessible	Need	Accessibility
	Roads are fit for purpose	Need	Functionality
	Roads enable smooth safe travelling.	Need	Safety
Local Business	Roads are accessible	Need	Accessibility
	Roads are smooth and safe	Need	Safety
	Roads have good aesthetics	Want	Aesthetics
	Roads are provided in an affordable manner	Want	Affordability
	Shire provides a responsive maintenance service	Want	Responsiveness

Table 3: Service Levels

Service Level Attributes

The following service attributes are either frequently occurring and/or needed. As such, they are considered for potential Service Levels.

- = Accessibility – Frequency: 4 and Needed
- = Functionality – Frequency: 2 and Needed
- = Safety – Frequency: 4 and Needed
- = Aesthetics - Frequency: 3 and Want

Service Level Targets and Performance

By considering the potential service attributes from the SCP and stakeholder key service attributes, a total of six KPIs have been selected. The following table outlines the KPIs used to monitor performance delivery.

KPI	Driver	Level of Service	Performance Measure	Target	Current	Data Confidence
Accessibility	Stakeholder attributes	Roads are accessible to all users	Percentage of roads that are accessible throughout all seasons.	TBC	TBC	-
Financial Sustainability	SCP	Roads are financially sustainable.	Percentage of road asset performance ratios that are within the target bands.	100%	TBC	-
Functionality	Stakeholder attributes	Roads are fit for purpose.	Percentage of users that are at least satisfied with the roads that they use.	TBC	TBC	-
Safety	Stakeholder attributes and SCP	Roads are managed and maintained to be safe.	Percentage of planned/recurrent maintenance tasks that occur as per their schedule(s) timeframe.	TBC	TBC	-

Table 4: Service Level Targets and Performance

Demand

This section summarises likely factors that may affect the demand for road based services over the life of the AMP. Full details of past and future demand factors are recorded in the General Guidance Notes.

Historic Demand

A range of historical sources of service demand change have been considered. Their overall effect has been summarised as follows.

Driver Type	Effect	Demand Change
Population	Shire population up by 441 people (+31%) from 1,401 (2001) to 1,844 (2016).	Increase
Demographic	Population increase in all demographic age bands (2001 – 2016) except 30-39. Median age has increased from 35 to 39 years (2001 – 2016).	Increase
Recreation Participation	Participation rates continue to fall slightly year on year across the general population. Walking remains the most popular activity for recreation, followed by fitness/gym, jogging & running, swimming/diving and cycling/BMXing.	Possible Decrease in demand.
Tourism	Tourist numbers in the 'golden outback' region grew from 1.5m (2012) to 2.1m (2017). This growth may have increased demand on the road network.	Increase
Climate	Annual rainfall has fallen from approximately 730mm to 580mm per annum (1916 to 2017). Annual monthly mean maximum temperatures up from 29.2°C to 31.8°C (1935 to 2017). As a result, asset lives may be shorter due to heat exposure. There is no doubt that the change in the environment has an effect on the longevity of our road network.	Increase

Table 5: Historic Demand Drivers

Future Demand

Consideration was given to six possible future demand drivers (political, economic, social, technological, legal and environmental) that may influence demand on the provision of road based services.

Driver Type	Service Demand Change
Political	Negligible
Economic	Increase from higher energy costs, and potential catastrophic funding constraints if a local mine closes.
Social	Increase due to tourism and vandalism. Changing needs due to demographic and recreation trend changes.
Technological	Opportunity to decrease maintenance costs through implementation of emerging technologies. Increase in visitation due to driverless vehicles.
Legal	Increase in compliance obligations.
Environmental	Increase in costs due to climate change and implementation of appropriate asset management strategies.

Table 6: Future Demand Drivers

Demand Management

A review of past and future demand factors shows that road service demand change has occurred, and will also likely occur into the future. Looking forward, the following initiatives/improvements are proposed to meet demand changes.

- = Improving asset knowledge so that the data accurately records the asset inventory
- = Monitor how assets are performing and when assets are not able to provide the required service levels.
- = Consult with the mines to predict future demand for active and passive services.
- = Improving our efficiency in operating, maintaining, replacing existing and constructing new assets to optimise life cycle costs.
- = Consider future strategy for the provision of roads if a local mine site were to close.

Risk Management

A risk analysis of the current road network asset management deficiencies identified by the AMP has been undertaken. Table 7 outlines the top identified risks.

Ref.	Risk	Level of Risk	Further Action
1	The Shire has no 'live' road network AMP.	Moderate	Develop AMP
2	A planned maintenance schedule with associated budgets does not exist.	Moderate	Implement the Synergy Soft AM module.
4	Shire has no long-term capital works programme.	High	Develop a 10 year works programme.
7	Shire has no monitored AMP service levels.	Low	Monitor the service levels recorded within this AMP.

Table 7: Major Road Network Asset Management Risks

Lifecycle Management Plan

The lifecycle management plan details how the Shire intends to manage and operate its road network portfolio at the agreed service levels.

Road Network Physical Parameters

Road Name	Asset Type	Length m	Current Replacement Cost	Fair Value	Annual Depreciation
ADAM STREET	Sealed Road	1030	\$174,000	\$140,895	\$2,703
ASSAY TERRACE	Sealed Road	550	\$156,800	\$126,791	\$2,466
BANKSIA CRESCENT	Sealed Road	270	\$64,500	\$52,943	\$894
BLUE GUM WAY	Sealed Road	190	\$42,750	\$34,935	\$613
BOSSE LINK	Sealed Road	91	\$20,240	\$16,615	\$288
CHALK BROOK ROAD	Sealed Road	110	\$19,020	\$15,516	\$282
CHRISTIE STREET	Sealed Road	350	\$85,300	\$70,164	\$1,167
CLUB DRIVE	Sealed Road	700	\$168,200	\$137,930	\$2,331
COLIN STREET	Sealed Road	180	\$47,330	\$39,253	\$614
CRANE RISE	Sealed Road	560	\$143,400	\$119,033	\$1,877
CROSSMAN DWARDA ROAD	Sealed Road	6150	\$1,633,000	\$1,353,280	\$21,337
CROSSMAN ROAD	Sealed Road	11850	\$3,331,700	\$2,686,413	\$47,890
DAYS ROAD	Sealed Road	40	\$8,420	\$6,917	\$124
DAYS ROAD B	Sealed Road	140	\$30,170	\$24,777	\$428
EUCALYPT ST	Sealed Road	250	\$59,300	\$47,937	\$934
FAIRWAY PLACE	Sealed Road	1570	\$382,000	\$315,320	\$5,170
FARMERS AVENUE	Sealed Road	3320	\$830,000	\$683,520	\$11,516
FAWCETT WAY	Sealed Road	150	\$39,640	\$32,833	\$522
FIRNS COURT	Sealed Road	80	\$15,600	\$12,635	\$242
FLETCHER ROAD	Sealed Road	20	\$4,670	\$3,859	\$60
FORREST STREET	Sealed Road	360	\$103,800	\$83,990	\$1,625
FRASER RD	Sealed Road	650	\$171,900	\$142,374	\$2,262
GEORGE STREET	Sealed Road	350	\$124,400	\$101,307	\$1,840
GOLD MINE ROAD	Sealed Road	9600	\$2,638,000	\$2,118,000	\$36,381
GRASSDALE VIEW	Sealed Road	140	\$26,640	\$21,923	\$372
GREENSTONE WAY	Sealed Road	530	\$127,600	\$103,535	\$1,977
HAKA ROAD	Sealed Road	1150	\$290,800	\$239,650	\$3,963
HARVEY - QUINDANNING ROAD	Sealed Road	25100	\$5,820,000	\$4,602,400	\$87,720
HILL STREET	Sealed Road	450	\$120,200	\$97,495	\$1,864
HOTHAM AVENUE	Sealed Road	1315	\$371,550	\$300,764	\$6,239
ILLYARRIE CRESCENT	Sealed Road	660	\$146,600	\$119,294	\$2,183
JARRAH TERRACE	Sealed Road	150	\$33,780	\$27,604	\$484
JOHNSTONE STREET	Sealed Road	705	\$313,600	\$219,128	\$8,630
KALIMNA WAY	Sealed Road	1260	\$319,900	\$265,550	\$4,191
KING STREET	Sealed Road	160	\$35,180	\$28,711	\$511
LITTLETON RISE	Sealed Road	490	\$93,100	\$75,289	\$1,463
LOWER HOTHAM ROAD	Sealed Road	15360	\$3,784,600	\$3,094,293	\$52,567
MAHOGANY COURT	Sealed Road	100	\$23,410	\$18,931	\$368
MARRADONG ROAD	Sealed Road	450	\$125,500	\$102,468	\$1,887
MISTLETOE VIEW	Sealed Road	1260	\$275,800	\$226,590	\$4,031
MITCHELL CRESCENT	Sealed Road	3290	\$867,000	\$718,630	\$11,316
MORTS ROAD	Sealed Road	125	\$24,630	\$20,085	\$373
NEWMARKET ROAD	Sealed Road	4100	\$939,000	\$768,120	\$14,537
NICHOLS PLACE	Sealed Road	130	\$25,480	\$20,609	\$400

Road Name	Asset Type	Length m	Current Replacement Cost	Fair Value	Annual Depreciation
PALMER ROAD	Sealed Road	750	\$136,300	\$112,253	\$1,893
PARDALOTE HEIGHTS	Sealed Road	520	\$114,000	\$93,648	\$1,667
PECAN PL	Sealed Road	110	\$20,920	\$16,915	\$329
POLLARD ROAD	Sealed Road	1280	\$334,240	\$266,595	\$5,246
PRUSSIAN WAY	Sealed Road	250	\$56,300	\$46,013	\$807
PYKE GARDENS	Sealed Road	120	\$26,630	\$21,861	\$379
QUINDANNING-DARKAN ROAD	Sealed Road	4340	\$925,000	\$759,680	\$13,344
RANFORD RETREAT	Sealed Road	300	\$70,700	\$57,998	\$1,043
RIVER ROAD	Sealed Road	1550	\$400,900	\$330,710	\$5,367
ROBERTS RD	Sealed Road	160	\$42,250	\$33,619	\$669
ROBINS ROAD	Sealed Road	2424	\$573,000	\$469,310	\$8,196
SANDALWOOD PL	Sealed Road	300	\$57,000	\$46,084	\$897
SHEOAK CT	Sealed Road	100	\$19,000	\$15,364	\$299
SHEPHERDS TURN	Sealed Road	310	\$78,600	\$64,406	\$1,132
SHERRY CLOSE	Sealed Road	830	\$157,700	\$127,516	\$2,481
SOUTH CROSSMAN ROAD	Sealed Road	150	\$41,820	\$34,141	\$630
SOUTH CROSSMAN ROAD BYPASS	Sealed Road	1250	\$337,100	\$279,710	\$4,399
STAGBOUER TRAIL	Sealed Road	450	\$91,800	\$75,286	\$1,307
TAYLORS COURT	Sealed Road	120	\$31,200	\$25,804	\$410
TWIN BRIDGES PLACE	Sealed Road	1400	\$366,400	\$304,910	\$4,710
WATTLE LINK	Sealed Road	80	\$15,200	\$12,290	\$239
WILLIAM STREET	Sealed Road	180	\$46,850	\$38,376	\$676
WURAMING AVENUE	Sealed Road	350	\$97,700	\$78,995	\$1,538
ZILKO ROAD	Sealed Road	30	\$7,940	\$6,576	\$105
TOTAL	Sealed Roads		\$28,107,060	\$22,756,365	\$406,404

Table 8: Sealed Road Network Portfolio Physical Parameters

Road Name	Asset Type	Length m	CRC (Current Replacement Cost)	DRV (Fair Value)	Annual Depreciation
ANDERSON ROAD	Unsealed Road	1040	\$93,300	\$65,010	\$2,255
ASHCROFT ROAD	Unsealed Road	4500	\$472,000	\$375,475	\$10,056
BOUNDARY ROAD	Unsealed Road	1440	\$134,200	\$100,576	\$3,020
CASTLEROCK ROAD	Unsealed Road	1440	\$186,900	\$139,796	\$4,231
CHALK BROOK ROAD	Unsealed Road	8060	\$912,000	\$686,356	\$20,269
DAYS ROAD B	Unsealed Road	535	\$56,800	\$44,260	\$1,306
DAYS ROAD	Unsealed Road	4370	\$484,000	\$379,225	\$10,916
ENGLISH ROAD	Unsealed Road	3700	\$157,000	\$157,000	\$0
ENGLISH ROAD	Unsealed Road		\$175,000	\$102,813	\$7,521
FARMERS AVENUE	Unsealed Road	700	\$43,000	\$21,769	\$1,907
FARMERS AVENUE	Unsealed Road		\$42,000	\$42,000	\$0
FLETCHER ROAD	Unsealed Road	12200	\$450,000	\$227,813	\$19,958
FLETCHER ROAD	Unsealed Road		\$437,000	\$437,000	\$0
GREYS ROAD	Unsealed Road	1100	\$62,400	\$31,590	\$2,768
GREYS ROAD	Unsealed Road		\$62,100	\$62,100	\$0
HAKA ROAD	Unsealed Road	350	\$8,900	\$8,900	\$0
HAKA ROAD	Unsealed Road		\$8,510	\$5,000	\$366
HARVEY - QUINDANNING ROAD	Unsealed Road	16820	\$1,290,000	\$1,290,000	\$0
HARVEY - QUINDANNING ROAD	Unsealed Road		\$996,000	\$504,225	\$44,174
LUCEV ROAD	Unsealed Road	6300	\$387,000	\$195,919	\$17,164
LUCEV ROAD	Unsealed Road		\$378,000	\$378,000	\$0
MARRADONG ROAD	Unsealed Road	11150	\$669,000	\$669,000	\$0
MARRADONG ROAD	Unsealed Road		\$686,000	\$347,288	\$30,425
MOORAPULLING LANE	Unsealed Road	6440	\$244,000	\$123,525	\$10,822
MOORAPULLING LANE	Unsealed Road		\$182,000	\$182,000	\$0
MORTS ROAD	Unsealed Road	7075	\$325,000	\$325,000	\$0
MORTS ROAD	Unsealed Road		\$349,000	\$176,681	\$15,479
NEWMARKET ROAD	Unsealed Road	13000	\$738,000	\$373,613	\$32,732
NEWMARKET ROAD	Unsealed Road		\$734,000	\$734,000	\$0
OLD SOLDIERS ROAD	Unsealed Road	6350	\$278,000	\$140,738	\$12,330
OLD SOLDIERS ROAD	Unsealed Road		\$264,000	\$264,000	\$0
PAGE ROAD	Unsealed Road	3300	\$133,000	\$133,000	\$0
PAGE ROAD	Unsealed Road		\$143,000	\$72,394	\$6,342
PALMER ROAD	Unsealed Road	850	\$36,200	\$18,326	\$1,606
PALMER ROAD	Unsealed Road		\$33,000	\$33,000	\$0
PARROT BUSH ROAD	Unsealed Road	510	\$18,300	\$9,264	\$812
PARROT BUSH ROAD	Unsealed Road		\$18,000	\$18,000	\$0
RED HILL ROAD	Unsealed Road	2100	\$119,000	\$60,244	\$5,278
RED HILL ROAD	Unsealed Road		\$89,000	\$89,000	\$0
RESERVE ROAD	Unsealed Road	1030	\$36,400	\$36,400	\$0
RESERVE ROAD	Unsealed Road		\$39,000	\$19,744	\$1,730
RIVER ROAD	Unsealed Road	1050	\$115,200	\$85,773	\$2,643
ROBINS ROAD - 1	Unsealed Road	300	\$37,000	\$28,517	\$636
ROBINS ROAD - 2	Unsealed Road	690	\$31,300	\$13,303	\$1,435
ROBINS ROAD - 2	Unsealed Road		\$10,200	\$10,200	\$0
ROGERS BEND	Unsealed Road	360	\$17,000	\$8,606	\$754
ROGERS BEND	Unsealed Road		\$15,300	\$15,300	\$0
SANDS ROAD	Unsealed Road	400	\$14,100	\$14,100	\$0
SANDS ROAD	Unsealed Road		\$15,100	\$7,644	\$670
SIDING ROAD	Unsealed Road	5060	\$204,000	\$204,000	\$0
SIDING ROAD	Unsealed Road		\$209,000	\$105,806	\$9,270
SLAVINS ROAD	Unsealed Road	1100	\$49,900	\$25,262	\$2,213
SLAVINS ROAD	Unsealed Road		\$42,700	\$42,700	\$0
SOUTH CROSSMAN ROAD	Unsealed Road	14180	\$805,000	\$407,531	\$35,703
SOUTH CROSSMAN ROAD	Unsealed Road		\$801,000	\$801,000	\$0
STAGBOUER TRAIL	Unsealed Road	590	\$27,900	\$16,391	\$1,199
STAGBOUER TRAIL	Unsealed Road		\$25,000	\$25,000	\$0
TANNIN PLACE	Unsealed Road	330	\$9,370	\$4,744	\$416
TANNIN PLACE	Unsealed Road		\$11,600	\$11,600	\$0
TYLERS ROAD	Unsealed Road	10200	\$675,000	\$341,719	\$29,938
TYLERS ROAD	Unsealed Road		\$618,000	\$618,000	\$0
WILLIAM STREET	Unsealed Road	1620	\$69,300	\$69,300	\$0
WILLIAM STREET	Unsealed Road		\$75,300	\$38,121	\$3,340
WITHNELL LANE	Unsealed Road	1750	\$74,500	\$37,716	\$3,304
WITHNELL LANE	Unsealed Road		\$74,200	\$74,200	\$0
ZILKO ROAD	Unsealed Road	800	\$36,700	\$36,700	\$0
ZILKO ROAD	Unsealed Road		\$37,800	\$19,136	\$1,677
TOTAL	Unsealed Roads		\$16,071,480	\$12,142,409	\$356,663

Table 9: Unsealed Road Network Portfolio Physical Parameters

Roads' Condition

As at 30 June 2018, the Shire holds condition ratings for some road components, derived from the last road valuation. While the condition ratings provide some indication as to where renewal works may be required, the ratings are not sufficiently robust to produce a long term works programme. An improvement action to implement a programme of inspections across the portfolio has been listed.

Road Name	Location	Asset Type	Components		
			Formation	Pavement	Surface
ADAM STREET	Urban	Sealed	0	3	3
ASSAY TERRACE	Urban	Sealed	0	3	3
BANKSIA CRESCENT	Urban	Sealed	0	3	3
BLUE GUM WAY	Urban	Sealed	0	3	3
BOSSE LINK	Urban	Sealed	0	3	3
CHALK BROOK ROAD	Rural	Sealed	0	3	3
CHRISTIE STREET	Urban	Sealed	0	3	3
CLUB DRIVE	Urban	Sealed	0	3	3
COLIN STREET	Urban	Sealed	0	3	3
CRANE RISE	Rural	Sealed	0	3	3
CROSSMAN DWARDA ROAD	Rural	Sealed	0	3	3
CROSSMAN ROAD - 1	Rural	Sealed	0	3	4
CROSSMAN ROAD - 2	Rural	Sealed	0	3	3
CROSSMAN ROAD - 3	Rural	Sealed	0	3	5
CROSSMAN ROAD - 4	Rural	Sealed	0	3	5
CROSSMAN ROAD - 5	Rural	Sealed	0	3	4
DAYS ROAD	Rural	Sealed	0	3	3
DAYS ROAD B	Rural	Sealed	0	3	3
EUCALYPT ST	Urban	Sealed	0	3	3
FAIRWAY PLACE	Rural	Sealed	0	3	3
FARMERS AVENUE	Urban	Sealed	0	3	3
FAWCETT WAY	Rural	Sealed	0	3	3
FIRNS COURT	Urban	Sealed	0	3	3
FLETCHER ROAD	Rural	Sealed	0	3	3
FORREST STREET	Urban	Sealed	0	3	3
FRASER RD	Rural	Sealed	0	3	3
GEORGE STREET	Urban	Sealed	0	3	3
GOLD MINE ROAD	Rural	Sealed	0	3	5
GRASSDALE VIEW	Urban	Sealed	0	3	3
GREENSTONE WAY	Urban	Sealed	0	3	3
HAKEA ROAD	Urban	Sealed	0	3	3
HARVEY - QUINDANNING ROAD	Rural	Sealed	0	3	5
HILL STREET	Urban	Sealed	0	3	3

Road Name	Location	Asset Type	Components		
			Formation	Pavement	Surface
HOTHAM AVENUE - 1	Urban	Sealed	0	1	4
HOTHAM AVENUE - 2	Urban	Sealed	0	3	3
HOTHAM AVENUE - 3	Urban	Sealed	0	3	3
HOTHAM AVENUE - 4	Urban	Sealed	0	3	3
HOTHAM AVENUE - 5	Urban	Sealed	0	3	3
HOTHAM AVENUE - 6	Urban	Sealed	0	3	4
HOTHAM AVENUE - 7	Urban	Sealed	0	3	4
HOTHAM AVENUE - 8	Urban	Sealed	0	1	2
HOTHAM AVENUE - 9	Urban	Sealed	0	1	2
HOTHAM AVENUE - 7	Urban	Sealed	0	3	4
HOTHAM AVENUE - 8	Urban	Sealed	0	1	2
HOTHAM AVENUE - 9	Urban	Sealed	0	1	2
ILLYARRIE CRESCENT	Urban	Sealed	0	3	3
JARRAH TERRACE	Urban	Sealed	0	3	3
JOHNSTONE STREET - 1	Urban	Sealed	0	3	3
JOHNSTONE STREET - 2	Urban	Sealed	0	3	4
JOHNSTONE STREET - 3	Urban	Sealed	0	3	5
KALIMNA WAY	Rural	Sealed	0	3	3
KING STREET	Urban	Sealed	0	3	3
LITTLETON RISE	Rural	Sealed	0	3	3
LOWER HOTHAM ROAD - 1	Rural	Sealed	0	3	4
LOWER HOTHAM ROAD - 2	Rural	Sealed	0	3	3
LOWER HOTHAM ROAD - 3	Rural	Sealed	0	3	3
LOWER HOTHAM ROAD - 4	Rural	Sealed	0	3	5
LOWER HOTHAM ROAD - 5	Rural	Sealed	0	3	3
LOWER HOTHAM ROAD - 6	Rural	Sealed	0	3	5
LOWER HOTHAM ROAD - 7	Rural	Sealed	0	3	3
LOWER HOTHAM ROAD - 8	Rural	Sealed	0	3	5
MAHOGANY COURT	Urban	Sealed	0	3	3
MARRADONG ROAD	Rural	Sealed	0	3	3
MISTLETOE VIEW	Rural	Sealed	0	3	3
MITCHELL CRESCENT	Rural	Sealed	0	3	3
MORTS ROAD	Rural	Sealed	0	3	3
NEWMARKET ROAD	Rural	Sealed	0	3	3
NICHOLS PLACE	Urban	Sealed	0	3	3
PALMER ROAD	Rural	Sealed	0	3	3
PARDALOTTE HEIGHTS	Rural	Sealed	0	3	3
PECAN PL	Urban	Sealed	0	3	3
POLLARD ROAD - 1	Urban	Sealed	0	3	4
POLLARD ROAD - 2	Urban	Sealed	0	3	4
POLLARD ROAD - 3	Urban	Sealed	0	3	4
POLLARD ROAD - 4	Urban	Sealed	0	3	4
POLLARD ROAD - 5	Urban	Sealed	0	3	4
PRUSSIAN WAY	Urban	Sealed	0	3	3

Road Name	Location	Asset Type	Components		
			Formation	Pavement	Surface
PYKE GARDENS	Urban	Sealed	0	3	3
QUINDANNING-DARKAN ROAD	Rural	Sealed	0	3	3
RANFORD RETREAT	Urban	Sealed	0	3	3
RIVER ROAD	Rural	Sealed	0	3	3
ROBERTS RD	Urban	Sealed	0	3	4
ROBINS ROAD	Rural	Sealed	0	3	3
SANDALWOOD PL	Urban	Sealed	0	3	3
SHEOAK CT	Urban	Sealed	0	3	3
SHEPHERDS TURN	Urban	Sealed	0	3	3
SHERRY CLOSE	Rural	Sealed	0	3	3
SOUTH CROSSMAN ROAD	Rural	Sealed	0	3	3
SOUTH CROSSMAN ROAD BYPASS	Rural	Sealed	0	3	3
STAGBOUER TRAIL	Rural	Sealed	0	3	3
TAYLORS COURT	Rural	Sealed	0	3	3
TWIN BRIDGES PLACE	Rural	Sealed	0	3	3
WATTLE LINK	Urban	Sealed	0	3	3
WILLIAM STREET	Urban	Sealed	0	3	3
WURAMING AVENUE	Urban	Sealed	0	3	3
ZILKO ROAD	Rural	Sealed	0	3	3

Table 10: Sealed Roads Condition

Road Name	Location	Asset Type	Components		
			Formation	Pavement	Surface
ANDERSON ROAD	Urban	Unsealed	0	5	
ASHCROFT ROAD	Rural	Unsealed	0	3	
BOUNDARY ROAD	Rural	Unsealed	0	4	
CASTLEROCK ROAD	Rural	Unsealed	0	4	
CHALK BROOK ROAD	Rural	Unsealed	0	4	
DAYS ROAD	Rural	Unsealed	0	3	
DAYS ROAD B	Rural	Unsealed	0	3	
ENGLISH ROAD	Rural	Unsealed	0	3	
FARMERS AVENUE	Urban	Unsealed	0	4	
FLETCHER ROAD	Rural	Unsealed	0	4	
GREYS ROAD	Rural	Unsealed	0	4	
HAKA ROAD	Urban	Unsealed	0	3	
HARVEY - QUINDANNING ROAD	Rural	Unsealed	0	4	
LUCEV ROAD	Rural	Unsealed	0	4	
MARRADONG ROAD	Rural	Unsealed	0	4	
MOORAPULLING LANE	Rural	Unsealed	0	4	
MORTS ROAD	Rural	Unsealed	0	4	
NEWMARKET ROAD	Rural	Unsealed	0	4	
OLD SOLDIERS ROAD	Rural	Unsealed	0	4	
PAGE ROAD	Rural	Unsealed	0	4	
PALMER ROAD	Rural	Unsealed	0	4	
PARROT BUSH ROAD	Rural	Unsealed	0	4	
RED HILL ROAD	Rural	Unsealed	0	4	
RESERVE ROAD	Rural	Unsealed	0	4	
RIVER ROAD	Rural	Unsealed	0	4	
ROBINS ROAD - 1	Rural	Unsealed	0	6	
ROBINS ROAD -2	Rural	Unsealed	0	5	
ROGERS BEND	Rural	Unsealed	0	4	
SANDS ROAD	Rural	Unsealed	0	4	
SIDING ROAD	Rural	Unsealed	0	4	
SLAVINS ROAD	Rural	Unsealed	0	4	
SOUTH CROSSMAN ROAD	Rural	Unsealed	0	4	
STAGBOUER TRAIL	Rural	Unsealed	0	3	
TANNIN PLACE	Rural	Unsealed	0	4	
TYLERS ROAD	Rural	Unsealed	0	4	
WILLIAM STREET	Rural	Unsealed	0	4	
WITHNELL LANE	Rural	Unsealed	0	4	
ZILKO ROAD	Rural	Unsealed	0	4	

Table 11: Unsealed Roads Condition

Average Condition (Sealed and Unsealed) for Pavement	3.2
Average Condition (Sealed and Unsealed) for Surface	3.3

Data Confidence and Reliability

Table 13 details the reliability and confidence levels of the current asset data the Shire holds. It is the Shire's intention to progress towards a position whereby data confidence levels for all areas are classified as either a 1 or 2.

Confidence Grade	Description	Accuracy
1 - Excellent	Accurate	100%
2 - Good	Minor inaccuracies	± 5%
3 - Average	50% estimated	± 20%
4 - Poor	Significant data estimated	± 30%
5 - Very Poor	All data estimated	± 40%

Table 12: Data Confidence Measures

Asset Type	Inventory	Condition	Valuation
Sealed	1	2	1
Unsealed	1	2	1

Table 13: Road Data Confidence Levels

Inventory & Valuation

The following section outlines the Shire's road assets as of 30 June 2018.

Sealed Roads

Asset Code	Group Code	Asset Name
RSRFXXX030	Sealed	ADAM STREET SR Form
RSRPXXX030	Sealed	ADAM STREET SR Pave
RSRSXXX030	Sealed	ADAM STREET SR Surface
RSRFXXX103	Sealed	ANDERSON RD Form
RSRPXXX103	Sealed	ANDERSON ROAD SR Pave
RSRSXXX103	Sealed	ANDERSON ROAD SR Surface
RSRFXXX077	Sealed	ASSAY TERRACE SR Form
RSRPXXX077	Sealed	ASSAY TERRACE SR Pave
RSRSXXX077	Sealed	ASSAY TERRACE SR Surface
RSRFXXX051	Sealed	BANKSIA CRESCENT SR Form
RSRPXXX051	Sealed	BANKSIA CRESCENT SR Pave
RSRSXXX051	Sealed	BANKSIA CRESCENT SR Surface
RSRFXXX054	Sealed	BLUE GUM WAY SR Form
RSRPXXX054	Sealed	BLUE GUM WAY SR Pave
RSRSXXX054	Sealed	BLUE GUM WAY SR Surface
RSRFXXX037	Sealed	BOSSE LINK SR Form
RSRPXXX037	Sealed	BOSSE LINK SR Pave
RSRSXXX037	Sealed	BOSSE LINK SR Surface
RSRFXXX022	Sealed	CHALK BROOK ROAD SR Form
RSRPXXX022	Sealed	CHALK BROOK ROAD SR Pave
RSRSXXX022	Sealed	CHALK BROOK ROAD SR Surface
RSRFXXX019	Sealed	CHRISTIE STREET SR Form
RSRPXXX019	Sealed	CHRISTIE STREET SR Pave
RSRSXXX019	Sealed	CHRISTIE STREET SR Surface
RSRFXXX063	Sealed	CLUB DRIVE SR Form
RSRPXXX063	Sealed	CLUB DRIVE SR Pave
RSRSXXX063	Sealed	CLUB DRIVE SR Surface
RSRFXXX081	Sealed	COLIN STREET SR Form
RSRPXXX081	Sealed	COLIN STREET SR Pave
RSRSXXX081	Sealed	COLIN STREET SR Surface
RSRFXXX102	Sealed	CRANE RISE SR Form
RSRPXXX102	Sealed	CRANE RISE SR Pave
RSRSXXX102	Sealed	CRANE RISE SR Surface
RSRFXXX002	Sealed	CROSSMAN DWARDA ROAD SR
RSRPXXX002	Sealed	CROSSMAN DWARDA ROAD SR Pave
RSRSXXX002	Sealed	CROSSMAN DWARDA ROAD SR
RSRFXXX001	Sealed	CROSSMAN ROAD SR Form
RSRPXXX001	Sealed	CROSSMAN ROAD SR Pave
RSRSXXX001	Sealed	CROSSMAN ROAD SR Surface
RSRFXXX012	Sealed	DAYS ROAD SR Form
RSRPXXX012	Sealed	DAYS ROAD SR Pave
RSRSXXX012	Sealed	DAYS ROAD SR Surface
RSRFXXX038	Sealed	EUCALYPT ST SR Form
RSRPXXX038	Sealed	EUCALYPT ST SR Pave
RSRSXXX038	Sealed	EUCALYPT ST SR Surface

Asset Code	Group Code	Asset Name
RSRFXXX094	Sealed	FAIRWAY PLACE SR Form
RSRPXXX094	Sealed	FAIRWAY PLACE SR Pave
RSRSXXX094	Sealed	FAIRWAY PLACE SR Surface
RSRFXXX015	Sealed	FARMERS AVENUE SR Form
RSRPXXX015	Sealed	FARMERS AVENUE SR Pave
RSRSXXX015	Sealed	FARMERS AVENUE SR Surface
RSRSXXX114	Sealed	FAWCETT ROAD B SR Surface
RSRFXXX114	Sealed	FAWCETT ROAD SR Formation
RSRPXXX114	Sealed	FAWCETT ROAD SR Pave
RSRFXXX052	Sealed	FIRNS COURT SR Form
RSRPXXX052	Sealed	FIRNS COURT SR Pave
RSRSXXX052	Sealed	FIRNS COURT SR Surface
RSRFXXX014	Sealed	FLETCHER ROAD SR Form
RSRPXXX014	Sealed	FLETCHER ROAD SR Pave
RSRSXXX014	Sealed	FLETCHER ROAD SR Surface
RSRFXXX025	Sealed	FORREST STREET SR Form
RSRPXXX025	Sealed	FORREST STREET SR Pave
RSRWXXX025	Sealed	FORREST STREET SR RANFORD
RSRSXXX025	Sealed	FORREST STREET SR Surface
RSRFXXX113	Sealed	FRASER RD SR Form
RSRPXXX110	Sealed	FRASER RD SR Pave
RSRSXXX113	Sealed	FRASER RD SR Surface
RSRFXXX026	Sealed	GEORGE STREET SR Form
RSRPXXX026	Sealed	GEORGE STREET SR Pave
RSRSXXX026	Sealed	GEORGE STREET SR Surface
RSRFXXX093	Sealed	GOLD MINE ROAD SR Form
RSRPXXX093	Sealed	GOLD MINE ROAD SR Pave
RSRSXXX093	Sealed	GOLD MINE ROAD SR Surface
RSRFXXX117	Sealed	GRASSDALE VIEW SR Form
RSRPXXX117	Sealed	GRASSDALE VIEW SR Pave
RSRSXXX117	Sealed	GRASSDALE VIEW SR Surface
RSRFXXX057	Sealed	GREENSTONE WAY SR Form
RSRPXXX057	Sealed	GREENSTONE WAY SR Pave
RSRSXXX057	Sealed	GREENSTONE WAY SR Surface
RSRFXXX040	Sealed	HAKA ROAD SR Form
RSRPXXX040	Sealed	HAKA ROAD SR Pave
RSRSXXX040	Sealed	HAKA ROAD SR Surface
RSRFXXX003	Sealed	HARVEY - QUINDANNING ROAD SR
RSRPXXX003	Sealed	HARVEY - QUINDANNING ROAD SR
RSRSXXX003	Sealed	HARVEY - QUINDANNING ROAD SR
RSRFXXX027	Sealed	HILL STREET SR Form
RSRPXXX027	Sealed	HILL STREET SR Pave
RSRSXXX027	Sealed	HILL STREET SR Surface
RSRFXXX024	Sealed	HOTHAM AVENUE SR Form
RSRPXXX024	Sealed	HOTHAM AVENUE SR Pave
RSRSXXX024	Sealed	HOTHAM AVENUE SR Surface
RSRFXXX066	Sealed	ILLYARRIE CRESCENT SR Form
RSRPXXX066	Sealed	ILLYARRIE CRESCENT SR Pave
RSRSXXX066	Sealed	ILLYARRIE CRESCENT SR Surface

Asset Code	Group Code	Asset Name
RSRFXXX053	Sealed	JARRAH TERRACE SR Form
RSRPXXX053	Sealed	JARRAH TERRACE SR Pave
RSRSXXX053	Sealed	JARRAH TERRACE SR Surface
RSRFXXX029	Sealed	JOHNSTONE STREET SR Form
RSRPXXX029	Sealed	JOHNSTONE STREET SR Pave
RSRSXXX029	Sealed	JOHNSTONE STREET SR Surface
RSRFXXX097	Sealed	KALIMNA WAY SR Form
RSRPXXX097	Sealed	KALIMNA WAY SR Pave
RSRSXXX097	Sealed	KALIMNA WAY SR Surface
RSRFXXX032	Sealed	KING STREET SR Form
RSRPXXX032	Sealed	KING STREET SR Pave
RSRSXXX032	Sealed	KING STREET SR Surface
RSRFXXX115	Sealed	LITTLETON RISE SR Form
RSRPXXX115	Sealed	LITTLETON RISE SR Pave
RSRSXXX115	Sealed	LITTLETON RISE SR Surface
RSRFXXX004	Sealed	LOWER HOTHAM ROAD SR Form
RSRPXXX004	Sealed	LOWER HOTHAM ROAD SR Pave
RSRSXXX004	Sealed	LOWER HOTHAM ROAD SR Surface
RSRFXXX076	Sealed	MAHOGANY COURT SR Form
RSRPXXX076	Sealed	MAHOGANY COURT SR Pave
RSRSXXX076	Sealed	MAHOGANY COURT SR Surface
RSRFXXX005	Sealed	MARRADONG ROAD SR Form
RSRPXXX005	Sealed	MARRADONG ROAD SR Pave
RSRSXXX005	Sealed	MARRADONG ROAD SR Surface
RSRFXXX101	Sealed	MISTLETOE VIEW SR Form
RSRPXXX101	Sealed	MISTLETOE VIEW SR Pave
RSRSXXX101	Sealed	MISTLETOE VIEW SR Surface
RSRFXXX107	Sealed	MITCHELL CRESCENT SR Form
RSRPXXX107	Sealed	MITCHELL CRESCENT SR Pave
RSRSXXX107	Sealed	MITCHELL CRESCENT SR Surface
RSRFXXX016	Sealed	MORTS ROAD SR Form
RSRPXXX016	Sealed	MORTS ROAD SR Pave
RSRSXXX016	Sealed	MORTS ROAD SR Surface
RSRFXXX006	Sealed	NEWMARKET ROAD SR Form
RSRPXXX006	Sealed	NEWMARKET ROAD SR Pave
RSRSXXX006	Sealed	NEWMARKET ROAD SR Surface
RSRFXXX048	Sealed	NICHOLS PLACE SR Form
RSRPXXX048	Sealed	NICHOLS PLACE SR Pave
RSRSXXX048	Sealed	NICHOLS PLACE SR Surface
RSRFXXX021	Sealed	PALMER ROAD SR Form
RSRPXXX021	Sealed	PALMER ROAD SR Pave
RSRSXXX021	Sealed	PALMER ROAD SR Surface
RSRFXXX112	Sealed	PARDALOTE HIEGHTS SR Form
RSRPXXX112	Sealed	PARDALOTE HIEGHTS SR Pave
RSRSXXX112	Sealed	PARDALOTE HIEGHTS SR Surface

Asset Code	Group Code	Asset Name
RSRFXXX045	Sealed	PECAN PL SR Form
RSRPXXX045	Sealed	PECAN PL SR Pave
RSRSXXX045	Sealed	PECAN PL SR Surface
RSRFXXX028	Sealed	POLLARD ROAD SR Form
RSRPXXX028	Sealed	POLLARD ROAD SR Pave
RSRSXXX028	Sealed	POLLARD ROAD SR Surface
RSRFXXX050	Sealed	PRUSSIAN WAY SR Form
RSRPXXX050	Sealed	PRUSSIAN WAY SR Pave
RSRSXXX050	Sealed	PRUSSIAN WAY SR Surface
RSRFXXX049	Sealed	PYKE GARDENS SR Form
RSRPXXX049	Sealed	PYKE GARDENS SR Pave
RSRSXXX049	Sealed	PYKE GARDENS SR Surface
RSRFXXX010	Sealed	QUINDANNING-DARKAN ROAD SR
RSRPXXX010	Sealed	QUINDANNING-DARKAN ROAD SR
RSRSXXX010	Sealed	QUINDANNING-DARKAN ROAD SR
RSRFXXX084	Sealed	RANFORD RETREAT SR Form
RSRPXXX084	Sealed	RANFORD RETREAT SR Pave
RSRSXXX084	Sealed	RANFORD RETREAT SR Surface
RSRFXXX043	Sealed	RIVER ROAD SR Form
RSRPXXX043	Sealed	RIVER ROAD SR Pave
RSRSXXX043	Sealed	RIVER ROAD SR Surface
RSRFXXX111	Sealed	ROBERTS RD SR Form
RSRPXXX111	Sealed	ROBERTS RD. SR Pave
RSRSXXX111	Sealed	ROBERTS RD. SR Surface
RSRFXXX013	Sealed	ROBINS ROAD SR Form
RSRPXXX013	Sealed	ROBINS ROAD SR Pave
RSRSXXX013	Sealed	ROBINS ROAD SR Surface
RSRFXXX059	Sealed	SANDALWOOD PL SR Form
RSRPXXX059	Sealed	SANDALWOOD PL SR Pave
RSRSXXX059	Sealed	SANDALWOOD PL SR Surface
RSRFXXX062	Sealed	SHEOAK CT SR Form
RSRPXXX062	Sealed	SHEOAK CT SR Pave
RSRSXXX062	Sealed	SHEOAK CT SR Surface
RSRFXXX069	Sealed	SHEPHERDS TURN SR Form
RSRPXXX069	Sealed	SHEPHERDS TURN SR Pave
RSRSXXX069	Sealed	SHEPHERDS TURN SR Surface
RSRFXXX116	Sealed	SHERRY CLOSE SR Form
RSRPXXX116	Sealed	SHERRY CLOSE SR Pave
RSRSXXX116	Sealed	SHERRY CLOSE SR Surface
RSRFXXX082	Sealed	SOUTH CROSSMAN ROAD BYPASS
RSRPXXX082	Sealed	SOUTH CROSSMAN ROAD BYPASS
RSRSXXX082	Sealed	SOUTH CROSSMAN ROAD BYPASS
RSRFXXX007	Sealed	SOUTH CROSSMAN ROAD SR Form
RSRPXXX007	Sealed	SOUTH CROSSMAN ROAD SR Pave
RSRSXXX007	Sealed	SOUTH CROSSMAN ROAD SR
RSRFXXX071	Sealed	STAGBOUER TRAIL SR Form
RSRPXXX071	Sealed	STAGBOUER TRAIL SR Pave
RSRSXXX071	Sealed	STAGBOUER TRAIL SR Surface

Asset Code	Group Code	Asset Name
RSRFXXX064	Sealed	TAYLORS COURT SR Form
RSRPXXX064	Sealed	TAYLORS COURT SR Pave
RSRSXXX064	Sealed	TAYLORS COURT SR Surface
RSRFXXX091	Sealed	TWIN BRIDGES PLACE SR Form
RSRPXXX091	Sealed	TWIN BRIDGES PLACE SR Pave
RSRSXXX091	Sealed	TWIN BRIDGES PLACE SR Surface
RSRFXXX065	Sealed	WATTLE LINK SR Form
RSRPXXX065	Sealed	WATTLE LINK SR Pave
RSRSXXX065	Sealed	WATTLE LINK SR Surface
RSRFXXX031	Sealed	WILLIAM STREET SR Form
RSRPXXX031	Sealed	WILLIAM STREET SR Pave
RSRSXXX031	Sealed	WILLIAM STREET SR Surface
RSRFXXX100	Sealed	WITHNELL LANE SR Form
RSRPXXX100	Sealed	WITHNELL LANE SR Pave
RSRSXXX100	Sealed	WITHNELL LANE SR Surface
RSRFXXX039	Sealed	WURAMING AVENUE SR Form
RSRPXXX039	Sealed	WURAMING AVENUE SR Pave
RSRSXXX039	Sealed	WURAMING AVENUE SR Surface
RSRFXXX067	Sealed	ZILKO ROAD SR Form
RSRPXXX067	Sealed	ZILKO ROAD SR Pave
RSRSXXX067	Sealed	ZILKO ROAD SR Surface

Table 14: Sealed Road Inventory

Unsealed Roads

Asset Code	Group Code	Asset Name
RURFXXX103	Unsealed	ANDERSON ROAD UR Formation
RURPXXX103	Unsealed	ANDERSON ROAD UR Pavement
RURPXXX058	Unsealed	ASHCROFT ROAD UR Pavement
RURPXXX033	Unsealed	BATT WAY UR Pavement
RURFXXX035	Unsealed	BOBO COURT FORMATION
RURPXXX035	Unsealed	BOBO COURT UR Pavement
RURFXXX086	Unsealed	BOUNDARY ROAD UR Form
RURPXXX086	Unsealed	BOUNDARY ROAD UR Pave
RURFXXX092	Unsealed	CASTLEROCK ROAD UR Form
RURPXXX092	Unsealed	CASTLEROCK ROAD UR Pave
RURFXXX022	Unsealed	CHALK BROOK ROAD UR Form
RURPXXX022	Unsealed	CHALK BROOK ROAD UR Pave
RURFXXX012	Unsealed	DAYS ROAD UR Form
RURPXXX012	Unsealed	DAYS ROAD UR Pave
RURFXXX015	Unsealed	FARMERS AVENUE UR Form
RURPXXX015	Unsealed	FARMERS AVENUE UR Pave
RURFXXX114	Unsealed	FAWCETT ROAD B UR Form
RURPXXX114	Unsealed	FAWCETT ROAD B UR Pave
RURFXXX014	Unsealed	FLETCHER ROAD UR Form
RURPXXX014	Unsealed	FLETCHER ROAD UR Pave

Asset Code	Group Code	Asset Name
RURFXXX099	Unsealed	FORTY HOLLOW ROAD RU Formation
RURPXXX099	Unsealed	FORTY HOLLOW ROAD RU Pavement
RURFXXX057	Unsealed	GREYS ROAD UR Form
RURPXXX057	Unsealed	GREYS ROAD UR Pave
RURFXXX040	Unsealed	HAKA ROAD UR Form
RURPXXX040	Unsealed	HAKA ROAD UR Pave
RURFXXX003	Unsealed	HARVEY - QUINDANNING ROAD UR Form
RURPXXX003	Unsealed	HARVEY - QUINDANNING ROAD UR Pave
RURFXXX041	Unsealed	LONG GULLY ROAD RU Formation
RURPXXX041	Unsealed	LONG GULLY ROAD UR Pavement
RURFXXX008	Unsealed	LUCEV ROAD UR Form
RURPXXX008	Unsealed	LUCEV ROAD UR Pave
RURFXXX005	Unsealed	MARRADONG ROAD UR Form
RURPXXX005	Unsealed	MARRADONG ROAD UR Pave
RURFXXX018	Unsealed	MOORAPULLING LANE UR Form
RURPXXX018	Unsealed	MOORAPULLING LANE UR Pave
RURFXXX016	Unsealed	MORTS ROAD UR Form
RURPXXX016	Unsealed	MORTS ROAD UR Pave
RURFXXX006	Unsealed	NEWMARKET ROAD UR Form
RURPXXX006	Unsealed	NEWMARKET ROAD UR Pave
RURFXXX020	Unsealed	OLD SOLDIERS ROAD UR Form
RURPXXX020	Unsealed	OLD SOLDIERS ROAD UR Pave
RURFXXX017	Unsealed	PAGE ROAD UR Form
RURPXXX017	Unsealed	PAGE ROAD UR Pave
RURFXXX021	Unsealed	PALMER ROAD UR Form
RURPXXX021	Unsealed	PALMER ROAD UR Pave
RURFXXX088	Unsealed	PARROT BUSH ROAD UR Form
RURPXXX088	Unsealed	PARROT BUSH ROAD UR Pave
RURFXXX113	Unsealed	PEPPERCORN LANE RU Formation
RURPXXX113	Unsealed	PEPPERCORN LANE RU Pavement
RURFXXX047	Unsealed	RED HILL ROAD UR Form
RURPXXX047	Unsealed	RED HILL ROAD UR Pave
RURFXXX096	Unsealed	RESERVE ROAD UR Form
RURPXXX096	Unsealed	RESERVE ROAD UR Pave
RURFXXX043	Unsealed	RIVER ROAD UR Form
RURPXXX043	Unsealed	RIVER ROAD UR Pave
RURFXXX013	Unsealed	ROBINS ROAD UR Form
RURPXXX013	Unsealed	ROBINS ROAD UR Pave
RURFXXX106	Unsealed	ROGERS BEND RU Formation
RURPXXX106	Unsealed	ROGERS BEND RU Pavement
RURFXXX074	Unsealed	SANDS ROAD UR Form
RURPXXX074	Unsealed	SANDS ROAD UR Pave
RURFXXX095	Unsealed	SIDING ROAD UR Form
RURPXXX062	Unsealed	SIDING ROAD UR Pave
RURFXXX046	Unsealed	SLAVINS ROAD UR Form
RURPXXX046	Unsealed	SLAVINS ROAD UR Pave
RURFXXX119	Unsealed	SOUTH CROSSMAN ROAD By-PASS RU Formation
RURPXXX119	Unsealed	SOUTH CROSSMAN ROAD BY-PASS RU Pavement

Asset Code	Group Code	Asset Name
RURXXXX007	Unsealed	SOUTH CROSSMAN ROAD UR Form
RURXXXX007	Unsealed	SOUTH CROSSMAN ROAD UR Pave
RURXXXX089	Unsealed	TANNIN PLACE UR Form
RURXXXX089	Unsealed	TANNIN PLACE UR Pave
RURXXXX009	Unsealed	TYLERS ROAD UR Form
RURXXXX009	Unsealed	TYLERS ROAD UR Pave
RURXXXX031	Unsealed	WILLIAM STREET UR Form
RURXXXX031	Unsealed	WILLIAM STREET UR Pave
RURXXXX100	Unsealed	WITHNELL LANE UR Formation
RURXXXX100	Unsealed	WITHNELL LANE UR Pavement
RURXXXX067	Unsealed	ZILKO ROAD UR Form
RURXXXX067	Unsealed	ZILKO ROAD UR Pave

Table 15: Unsealed Road Inventory

Lifecycle Management Strategies

Maintenance Strategy

The Shire currently employs a mixture of reactive and ad-hoc planned maintenance practices. Typically, annual budgets are based on historical levels of expenditure with an applied inflation factor. The available level of budget determines the level of planned maintenance that occurs.

Looking forward, the Shire wishes to improve this practice by increasing the level of planned maintenance activity and linking schedules to annual budgets. The development of a formal road maintenance programme has been listed as an improvement action.

Road Network AMP

This document that sets out the Shire's long term management tactics for Road Network assets.

Service Level Agreements

The Shire generally has little by way of formal Service Level Agreements with community groups and road users. The development of a template agreement has been listed as an improvement action.

Renewal Strategy

Road assets are periodically inspected to determine their condition, on a 0 (new/excellent) to 10 (very poor/failed) scale. However, past inspections have not necessarily formally recorded ratings for all components. An improvement action to address this has been listed. Condition results will be used to predict assets' potential year of renewal. Staff then reinspect these assets to determine the timing, scope and budget of any future renewal project. Projects are then listed on a long term works programme and reported within this AMP, items typically considered here would be resealing, replacing line marking, pavement rehabilitation and other costs that would be considered as "preserving the assets life" these items would be regarded as Capital expenditure.

The renewal strategy in this plan is based around predominately a reseal programme providing a base renewal amount of \$285k, this equates to 47,500m² giving on average a life of 18 years for sealed surface. The roads that will be resealed will be evaluated based on priority, traffic volumes, economic and condition factors.

Strategic Goals

A significant high level asset data collection and condition assessment process was conducted in 2018 across all road assets. This provided comprehensive condition information for all roads at component level. It is recommended that Council focuses its capital spending on poor condition road components, graded at level 7 or higher.

Upgrade/New Strategy

The need for new and/or upgraded assets (e.g. to meet a service deficiency) are identified from several potential sources. Each potential asset is investigated by staff and where valid, often prioritised against similar projects. Approved projects are then listed onto the works programme. At present, the Shire does not have a formal prioritisation framework for upgrade/new assets, where their 'strategic fit' against the Strategic Community Plan can be determined. An improvement action to consider this has been listed.

Disposal Strategy

The Shire does not frequently dispose of road assets (this is where the asset is not replaced/renewed). Where a potential need is identified, then this is considered by staff, and in some cases, Council.

Financial

This section contains the financial requirements resulting from all the information presented in this AMP.

Projected Expenditure Requirements

Expense Type	Year 1 2017/18	Year 2 2018/19	Year 3 2019/20	Year 4 2020/21	Year 5 2021/22
Operational	\$ -	\$ -	\$ -	\$ -	\$ -
Maintenance	\$ 324,902	\$ 354,347	\$ 359,985	\$ 367,522	\$ 375,967
Renewal/Upgrade	\$ 283,541	\$ 285,000	\$ 290,000	\$ 295,800	\$ 301,716
New					
Upgrade	\$ 701,595	\$ 300,000	\$ 351,000	\$ 351,000	\$ 351,000
Required Funds	\$ 1,310,038	\$ 939,347	\$ 1,000,985	\$ 1,014,322	\$ 1,028,683

Expense Type	Year 6 2022/23	Year 7 2023/24	Year 8 2024/25	Year 9 2025/26	Year 10 2026/27
Operational	\$ -	\$ -	\$ -	\$ -	\$ -
Maintenance	\$ 385,732	\$ 396,531	\$ 410,017	\$ 424,794	\$ 440,114
Renewal/Upgrade	\$ 309,259	\$ 316,990	\$ 326,500	\$ 336,295	\$ 346,384
New					
Upgrade	\$ 351,000	\$ 351,000	\$ 351,000	\$ 351,000	\$ 351,000
Required Funds	\$ 1,045,991	\$ 1,064,521	\$ 1,087,517	\$ 1,112,090	\$ 1,137,498

Table 16: Road Expenditure Requirements

Plan Improvement and Monitoring

This Section of the AMP outlines the degree to which it is an effective and integrated tool within the Shire. It also details the future tasks required to improve its accuracy and robustness.

Performance Measures

The effectiveness of the AMP will be monitored by the performance of the three statutory ratios that the Shire reports on. The Shire's current performance is recorded in Table

Asset Consumption Ratio

The ratio is a measure of the condition of the Shire's physical assets, by comparing their condition based fair value (what they're currently worth) against their current replacement cost (what their replacement asset is currently worth as new). The ratio highlights the aged condition of the portfolio and has a target band of between 50%-75%. Non-depreciating assets (e.g. land etc.) should be excluded from the calculation.

Depreciated Replacement Cost (Fair Value) of Depreciable Road Assets

Current Replacement Cost of Depreciable Road Assets

Road Name	Asset Type	Length m	Current Replacement Cost	Fair Value	ACR (Asset Consumption Ratio)
ADAM STREET	Sealed Road	1030	\$174,000	\$140,895	81%
ASSAY TERRACE	Sealed Road	550	\$156,800	\$126,791	81%
BANKSIA CRESCENT	Sealed Road	270	\$64,500	\$52,943	82%
BLUE GUM WAY	Sealed Road	190	\$42,750	\$34,935	82%
BOSSE LINK	Sealed Road	91	\$20,240	\$16,615	82%
CHALK BROOK ROAD	Sealed Road	110	\$19,020	\$15,516	82%
CHRISTIE STREET	Sealed Road	350	\$85,300	\$70,164	82%
CLUB DRIVE	Sealed Road	700	\$168,200	\$137,930	82%
COLIN STREET	Sealed Road	180	\$47,330	\$39,253	83%
CRANE RISE	Sealed Road	560	\$143,400	\$119,033	83%
CROSSMAN DWARDA ROAD	Sealed Road	6150	\$1,633,000	\$1,353,280	83%
CROSSMAN ROAD	Sealed Road	11850	\$3,331,700	\$2,686,413	81%
DAYS ROAD	Sealed Road	40	\$8,420	\$6,917	82%
DAYS ROAD B	Sealed Road	140	\$30,170	\$24,777	82%
EUCALYPT ST	Sealed Road	250	\$59,300	\$47,937	81%
FAIRWAY PLACE	Sealed Road	1570	\$382,000	\$315,320	83%
FARMERS AVENUE	Sealed Road	3320	\$830,000	\$683,520	82%
FAWCETT WAY	Sealed Road	150	\$39,640	\$32,833	83%
FIRNS COURT	Sealed Road	80	\$15,600	\$12,635	81%
FLETCHER ROAD	Sealed Road	20	\$4,670	\$3,859	83%
FORREST STREET	Sealed Road	360	\$103,800	\$83,990	81%
FRASER RD	Sealed Road	650	\$171,900	\$142,374	83%
GEORGE STREET	Sealed Road	350	\$124,400	\$101,307	81%
GOLD MINE ROAD	Sealed Road	9600	\$2,638,000	\$2,118,000	80%
GRASSDALE VIEW	Sealed Road	140	\$26,640	\$21,923	82%

Road Name	Asset Type	Length m	Current Replacement	Fair Value	ACR (Asset Consumption)
GREENSTONE WAY	Sealed Road	530	\$127,600	\$103,535	81%
HAKEA ROAD	Sealed Road	1150	\$290,800	\$239,650	82%
HARVEY - QUINDANNING ROAD	Sealed Road	25100	\$5,820,000	\$4,602,400	79%
HILL STREET	Sealed Road	450	\$120,200	\$97,495	81%
HOTHAM AVENUE	Sealed Road	1315	\$371,550	\$300,764	81%
ILLYARRIE CRESCENT	Sealed Road	660	\$146,600	\$119,294	81%
JARRAH TERRACE	Sealed Road	150	\$33,780	\$27,604	82%
JOHNSTONE STREET	Sealed Road	705	\$313,600	\$219,128	70%
KALIMNA WAY	Sealed Road	1260	\$319,900	\$265,550	83%
KING STREET	Sealed Road	160	\$35,180	\$28,711	82%
LITTLETON RISE	Sealed Road	490	\$93,100	\$75,289	81%
LOWER HOTHAM ROAD	Sealed Road	15360	\$3,784,600	\$3,094,293	82%
MAHOGANY COURT	Sealed Road	100	\$23,410	\$18,931	81%
MARRADONG ROAD	Sealed Road	450	\$125,500	\$102,468	82%
MISTLETOE VIEW	Sealed Road	1260	\$275,800	\$226,590	82%
MITCHELL CRESCENT	Sealed Road	3290	\$867,000	\$718,630	83%
MORTS ROAD	Sealed Road	125	\$24,630	\$20,085	82%
NEWMARKET ROAD	Sealed Road	4100	\$939,000	\$768,120	82%
NICHOLS PLACE	Sealed Road	130	\$25,480	\$20,609	81%
PALMER ROAD	Sealed Road	750	\$136,300	\$112,253	82%
PARDALOTE HEIGHTS	Sealed Road	520	\$114,000	\$93,648	82%
PECAN PL	Sealed Road	110	\$20,920	\$16,915	81%
POLLARD ROAD	Sealed Road	1280	\$334,240	\$266,595	80%
PRUSSIAN WAY	Sealed Road	250	\$56,300	\$46,013	82%
PYKE GARDENS	Sealed Road	120	\$26,630	\$21,861	82%
QUINDANNING-DARKAN ROAD	Sealed Road	4340	\$925,000	\$759,680	82%
RANFORD RETREAT	Sealed Road	300	\$70,700	\$57,998	82%
RIVER ROAD	Sealed Road	1550	\$400,900	\$330,710	82%
ROBERTS RD	Sealed Road	160	\$42,250	\$33,619	80%
ROBINS ROAD	Sealed Road	2424	\$573,000	\$469,310	82%
SANDALWOOD PL	Sealed Road	300	\$57,000	\$46,084	81%
SHEOAK CT	Sealed Road	100	\$19,000	\$15,364	81%
SHEPHERDS TURN	Sealed Road	310	\$78,600	\$64,406	82%
SHERRY CLOSE	Sealed Road	830	\$157,700	\$127,516	81%
SOUTH CROSSMAN ROAD	Sealed Road	150	\$41,820	\$34,141	82%
SOUTH CROSSMAN ROAD BYPASS	Sealed Road	1250	\$337,100	\$279,710	83%
STAGBOUER TRAIL	Sealed Road	450	\$91,800	\$75,286	82%
TAYLORS COURT	Sealed Road	120	\$31,200	\$25,804	83%
TWIN BRIDGES PLACE	Sealed Road	1400	\$366,400	\$304,910	83%
WATTLE LINK	Sealed Road	80	\$15,200	\$12,290	81%
WILLIAM STREET	Sealed Road	180	\$46,850	\$38,376	82%
WURAMING AVENUE	Sealed Road	350	\$97,700	\$78,995	81%
ZILKO ROAD	Sealed Road	30	\$7,940	\$6,576	83%
TOTAL	Sealed Roads		\$28,107,060	\$22,756,365	82%

Table 17: Sealed Road Assets Consumption Ratios

Road Name	Asset Type	Length m	Current Replacement Cost	Fair Value	ACR (Asset Consumption Ratio)
ANDERSON ROAD	Unsealed Road	1040	\$ 93,300	\$65,010	70%
ASHCROFT ROAD	Unsealed Road	4500	\$ 472,000	\$375,475	80%
BOUNDARY ROAD	Unsealed Road	1440	\$ 134,200	\$100,576	75%
CASTLEROCK ROAD	Unsealed Road	1440	\$ 186,900	\$139,796	75%
CHALK BROOK ROAD	Unsealed Road	8060	\$ 912,000	\$686,356	75%
DAYS ROAD B	Unsealed Road	535	\$ 56,800	\$44,260	78%
DAYS ROAD	Unsealed Road	4370	\$ 484,000	\$379,225	78%
ENGLISH ROAD	Unsealed Road	3700	\$ 332,000	\$259,813	78%
FARMERS AVENUE	Unsealed Road	700	\$ 85,000	\$63,769	75%
FLETCHER ROAD	Unsealed Road	12200	\$ 887,000	\$664,813	75%
GREYS ROAD	Unsealed Road	1100	\$ 124,500	\$93,690	75%
HAKA ROAD	Unsealed Road	350	\$ 17,410	\$13,900	80%
HARVEY - QUINDANNING ROAD	Unsealed Road	16820	\$ 2,286,000	\$1,794,225	78%
LUCEV ROAD	Unsealed Road	6300	\$ 765,000	\$573,919	75%
MARRADONG ROAD	Unsealed Road	11150	\$ 1,355,000	\$1,016,288	75%
TOTAL	Sealed Roads		\$ 14,043,020	\$ 10,751,527	76%

Table 18: Unsealed Road Assets Consumption Ratios

Asset Sustainability Ratio

The ratio is a measure of the extent to which assets managed by the Shire are being replaced as they reach the end of their useful lives. The ratio is essentially past looking, and is based upon dividing the average annual depreciation expense of the road asset portfolio by the average annual renewal expenditure, for a number of past years (e.g. 3).

Road	Renewal & Upgrade Expenditure	Expenditure			Asset Depreciation Expense (ADE)
		2015/16	2016/17	2017/18	
Town Reseals	Reseals	\$ 74,329			
Town Reseals	Prep Leveling For Reseals	\$ 78,288			
Newmarket Rd	Gravel Sheetting 1.7Km	\$ 98,381			
Days Road	Upgrade	\$ 115,209			
Harvey - Quindanning Road	Upgrade	\$ 358,592			
South Crossman Road - Reseal	Reseal		\$ 196,607		
Hotham Avenue - Reseal	Reseal		\$ 17,542		
Pollard Street - Reseal	Reseal		\$ 22,071		
Adam Street - Reseal	Reseal		\$ 19,096		
King Street - Reseal	Reseal		\$ 4,733		
Nichols Place - Reseal	Reseal		\$ 5,210		
Greenstone Way - Reseal	Reseal		\$ 10,624		
Illyarrie Crescent - Reseal	Reseal		\$ 13,441		
Shepherds Turn - Reseal	Reseal		\$ 6,053		
Mahogany Court - Reseal	Reseal		\$ 2,497		
Crossman Road - Upgrade	Upgrade		\$ 55,013		
Harvey-Quindanning Road - Upgrade	Upgrade		\$ 278,036		
Crossman Road - Reseal	Reseal			\$ 101,622	
Quindanning-Darkan Road - Reseal	Reseal			\$ 1,323	
Gold Mine Road - Reseal	Reseal			\$ 1,477	
Reseals - Muni	Reseal			\$ 179,120	
Crossman Road - Upgrade	Upgrade			\$ 345,762	
Crossman Dwarda Road - Upgrade	Upgrade			\$ -	
Harvey-Quindanning Road - Upgrade	Upgrade			\$ 351,610	
Newmarket Road - Upgrade	Upgrade			\$ 2,140	
Sealed					\$ 406,404
Unsealed					\$ 356,663
		\$ 724,799	\$ 630,923	\$ 983,053	\$ 763,067

Table 19: Road Assets Sustainability Ratios

Asset Sustainability Ratio = $\frac{\text{Road Asset Renewal Expenditure}}{\text{Road Asset Depreciation}}$

Asset Sustainability Ratio = $\frac{\$779,592}{\$763,067}$

102%

Asset Renewal Funding Ratio

The ratio is a measure as to whether the Shire has the financial capacity to fund asset renewal as and when it is required over the future 10 year period. The ratio is calculated by dividing the net present value of planned renewal expenditure over the next 10 years in the LTFP, by the net present value of planned renewal expenditure over the next 10 years in the AMP. The same net present value discount must be applied in both calculations.

The ratio will be produce in the next revision of the Shire of Boddington Long Term Financial Plan.

NPV of LTFP Planned Renewal Expenditure over the next 10 years \$ 6,901,080
 NPV of AMP Required Renewal Expenditure over the next 10 years \$10,292,137

Year	Asset Consumption Ratio	Asset Sustainability Ratio	Asset Renewal Funding Ratio
2017/18	80% (Above Target)	102%	67%

Table 20: AMP Performance Measures

Improvement Plan

The asset management improvement plan generated from this AMP is shown in Table 20.

Task No	Task	Responsibility	Timeline
1	Monitor (where appropriate) road traffic volume and usage levels.		
2	Predict future demand for the road network including hierarchy structure		
3	Identify futures technologies that can facilitate more effective and cost efficient road asset preservation practices		
4	Consider future strategy for the provision of roads if a local mine site were to close		
5	Complete the implementation of the Synergy Soft AM module		
6	Develop a 10 year capital works programme		
7	Monitor the services levels recorded within this AMP		
8	Implement an ongoing programme of road conditions inspections		
9	Develop a road maintenance and asset preservation schedule with associated budgets		
10	Develop an upgrade/new project evaluation and prioritisation framework		

Table 21: AMP Improvement Plan

Monitoring and Review Procedures

This AMP will be reviewed during annual budget preparation and amended to recognise any changes in service level and/or resources available to provide those services as a result of the budget decision process.