



**ROAD
MAINTENANCE
MANAGEMENT PLAN
2008 / 2009
DRAFT**

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1.0 PREAMBLE

This road management plan provides guidelines by which Council undertakes routine maintenance on urban, rural roads and regional roads within the Gwydir Shire Council.

Council is the road authority for an extensive road network. Most of these roads are public roads as defined by the Roads Act 1993; however there are roads that are maintained by Council that are not public roads. The roads which are not public roads provide public access to properties and public roads, which Council does not maintain.

This plan provides guidelines for determining whether a road is eligible for inclusion in the Council maintained road network. If a road is eligible then it will be classified and managed by Council.

The foundation of the road maintenance management plan is based on a road hierarchy where roads have been classified in accordance with a number of clearly defined and measurable criteria.

The importance of determining where each road falls within the road hierarchy cannot be over emphasized. The class of a road will determine:

- Standard of road
- Level of service (maintenance effort)
- Extent of upgrading
- Priority for upgrading
- Design standards when upgraded

It is anticipated that the most difficult decisions and the ones which will give rise to the most disputes will be about road classification. For this reason it is very important to have a way of determining a road's classification which is based on measurable criteria. These criteria must then be applied consistently throughout the shire. This will ensure that the process can be presented to the community as fair and equitable.

All roads have been classified using best estimates of the criteria. As more measurement takes place with time, classifications may change.

Due to Council's limited resources there is insufficient funding to maintain all the roads at the highest level. The current funding gaps for the current levels of service for maintenance and operating capital (bitumen resealing and gravel resheeting) are;

Funding Gap 2007/2008	
• Local Roads	\$5,879,594
• Regional Roads	\$189,964

Therefore, it is important to ensure that what funds are available are spent in the most effective way through the adoption of a road hierarchy that identifies the relative importance of roads within the network. The most noticeable activities which have the highest funding gap are maintenance grading estimated at \$835,172 and gravel resheeting at \$4,645,141. This funding gap has been determined from the target (funded) levels of service and the desirable levels of service. The expectation of the targeted and desired levels of service from within the community needs to be addressed. The community needs to communicate to the council at the levels of service that they consider sustainable.

Like all management plans, this document is 'live' and subject to continuing review and change when required. It is proposed to review the document at least once every year during the management plan planning stages for the following year. Any changes required in the interim will be noted and updated at the yearly review.

2.0 ROADS ELIGIBLE FOR CLASSIFICATION

2.1 Introduction

The following matters will be considered when determining whether a road is eligible for classification in accordance with Council's road hierarchy system.

- Is the road a public road as defined by the Roads Act 1993?
- How many properties does the road serve?
- Has the road been maintained by Council in the past?

A road which is found ineligible for classification under this section shall not be eligible for Council funding.

2.2 Public Road

Under the Roads Act 1993 "...council of a local government area is the roads authority for all public roads within the area, other than;

- a) Roads owned by other authorities e.g. Crown and State Forests; and
- b) Roads or sections of roads where the physical road is not contained within the legal road reserve.

Council is slowly working progressively towards the dedication of all roads maintained by Council however, where existing roads have minor deviation outside the public road reserve, no action is taken to correct the situation unless reconstruction of that section is undertaken or adjoining landholders request such action. As this process can be very costly, the progress of this work will be limited by available funds. If demand for dedication exceeds funds available then priorities will need to be established and a program determined.

2.3 Properties Served

It should be noted that public roads which provide access to two or less properties with different ownership will only be eligible for the lowest classification under Council's road hierarchy system and therefore will only be eligible for minor and infrequent funding under Council's maintenance and enhancement programmes, irrespective of whether the road is a public road or has been maintained by Council in the past.

Council shall only maintain roads to the last property boundary and will not maintain internal access roads, unless otherwise resolved by Council.

Council is under no legal obligation to maintain a road just because it is a dedicated public road.

In determining whether a public road only accesses one property, consideration must be given to the situation where there may only be one abutting property but access is made through that abutting property to another property some distance from the public road. In other words, if more than one property owner has need to use a public road to access their own property then the road provides access to more than one property.

2.4 Roads Maintained by Council

The existing road network which Council maintained at the time of adopting this plan owes its existence to the historical demand of the community. Although there are a number of anomalies and inconsistencies with the network, importance should be placed on the fact that the road has, at some time in the past, been maintained by Council.

It is for this reason that as a starting point for this plan, all roads maintained by Council have been considered eligible for inclusion in the road hierarchy.

2.5 Roads Ineligible for Classification

Roads that are not being maintained by Council when this plan is adopted will not be considered eligible for classification, unless otherwise resolved by Council and include;

- Crown roads providing access to at least two properties in different ownership.
- Private roads providing access to at least two properties in different ownership.
- Dedicated public roads or part thereof which Council has chosen not to maintain.

These roads will become eligible for classification by Council and hence eligible for funding provided;

- The road serves at least two properties in different ownership
- The road is opened as a public road in accordance with the Roads Act 1993

- The road is constructed to the standard applicable to the class of road, the road will become after it is classified by Council.

All costs associated with achieving the above requirements shall be borne by the applicants seeking inclusion of the road in Councils road hierarchy.

Similar requirements must also be met for roads where the number of accessed properties of different ownership changes from one to more than one.

3.0 ROAD CLASSIFICATION

3.1 Introduction

For a road to be eligible for funding by Council it must be classified in accordance with this section.

3.2 Criteria

The criteria used in this classification system are;

- The location of the road, whether it is located in the rural or village areas.
- The nature of the traffic using the road, whether a road is being used to access a property or as a means of passing through an area.
- Traffic counts.
- Whether the road is part of a recognized school bus route.
- The number of properties served by the road.
- The class and number of other roads which are accessed from the road.
- Through road classification met or exceed majority of the time.

3.3 Road Classes

Class	Road Description
A	Regional
B	Primary Through
C	Secondary Through
D	Primary Access
E	Secondary Access
F	Other Rural Roads
U	Urban and Village

Class A Regional Roads

Regional roads provide transport links between major towns and cities. The national highway network does not pass through the Gwydir Shire Council and will not be considered as part of the management plan. The State roads include the Gwydir Highway and MR63 to which Council has a single maintenance contract and does not form part of this road maintenance management plan. The regional road network includes Bruxner Highway, Warialda Road (Warialda to Yetman), North Star Road, Macintyre Road, Gulf Creek Road, Killarney Gap Road and Delungra Road which is funded from the block grant annually through the New South Wales State Government.

Class B – Primary Through

Primary Through roads are those roads of a highest priority which provide for through traffic and local through traffic in the Shire and meets at least two (2) of the criteria below.

CRITERIA	MEASURE
Nature of Traffic	More than 50% of traffic travel the road to pass through Shire or to gain access to other roads within the Shire.
Volume of Traffic	Exceeds 75 vehicles per day
Heavy Vehicles	25 percent or more per day.
Bus Route	Yes
Properties Served	Not relevant

Class C – Secondary Through

Secondary Though roads are those roads which provide for local through traffic and access to abutting properties. Meets at least 2 criteria noted below.

CRITERIA	MEASURE
Nature of Traffic	More than 25% of traffic travel the road to pass through Shire or to gain access to other roads within the Shire.
Volume of Traffic	Exceeds 50 vehicles per day
Heavy Vehicles	25 percent or more per day.
Bus Route	Not applicable
Properties Served	Not applicable

Class D – Primary Access

Access roads are those roads whose main function is to provide access to abutting properties. Typically they are non-through roads and meets at least two (2) of the criteria noted below.

CRITERIA	MEASURE
Nature of Traffic	More than 75% of traffic travel the road to gain access to abutting properties.
Volume of Traffic	Exceeds 50 vehicles per day
Heavy Vehicles	25 percent or more per day.
Bus Route	Yes
Properties Served	More than ten properties are accessed from the road.

Class E – Secondary Access

Access roads are those roads whose main function is to provide access to properties. Typically they are non-through roads and meets at least two (2) of the criteria noted below.

CRITERIA	MEASURE
Nature of Traffic	More than 75% of traffic travel the road to gain access to properties.
Volume of Traffic	Exceeds 25 vehicles per day
Heavy Vehicles	25 percent or more per day.
Bus Route	Yes
Properties Served	More than ten properties are accessed from the road.

Class F – Other Rural Roads

Access roads are those roads whose main function is to provide access to properties. Typically they are non-through roads and meets at least two (2) of the criteria noted below.

CRITERIA	MEASURE
Nature of Traffic	More than 75% of traffic travel the road to gain access to properties.
Volume of Traffic	Exceeds 10 vehicles per day
Heavy Vehicles	25 percent or more per day.
Bus Route	Yes
Properties Served	More than one property are accessed from the road, in different ownership.

Class U – Urban/Village

Urban and village roads are classified as Class AU (regional urban roads) and Class LU (local urban roads).

4.0 SAFETY

The safety of road users shall be of the highest priority in the implementation of this management plan for Council's road network with Council's current resources.

All maintenance work necessary to ensure the safety of road users shall be carried out as and when required irrespective of the class of road or the maintenance strategy for that class of road.

Priority shall also be given to enhancement work which is required to rectify road safety problems.

5.0 MAINTENANCE

The following section detail specific maintenance activities applicable to all sealed and unsealed roads. Other maintenance activities which are not detailed will continue to be done for all road classes on an 'as required' basis.

The standard of maintenance for different classes of road and the deterioration that is allowed to occur before appropriate maintenance is carried out is based in part on the visual condition rating system.

The levels of service determined for each road may vary from year to year to allow for a change in conditions including weather and those circumstances which are outside the control of Council. The level of service will also vary to those activities that are on more than a one year cycle such as bitumen resealing and gravel resheeting which is programmed as determined by the level of service.

5.1 Inspections

In order to ensure that the various classes are maintained at the required standard it is necessary for the network to be inspected at regular intervals.

The frequency of inspections will need to reflect the road standard to be maintained for each class of road.

Areas to be inspected include safety, pavement condition, drainage and roadside.

5.2 Maintenance Grading

Maintenance grading will occur on a road when the visual rating of greater than fifty percent of the length of the road of any one of the distress modes drops below the condition in relation to the remainder of the road network of that road class.

Condition rather than frequency should dictate when maintenance is required. However, the frequency stated has been used as the basis for estimating the quantity of maintenance grading to be carried out each year.

5.3 Gravel Resheeting

The desirable gravel resheeting frequency is every 5 years. One of the aims of this management plan is to ensure that the surface of all roads as per the road classification and the levels of service are maintained in a condition that provides all weather access. Gravel surfacing of roads is an essential part of achieving this aim.

The wear rate of gravel is a function of traffic volume and climate and the actual frequency of resheeting will vary from year to year and with each class of road.

When the roads are resheeted with gravel, the minimum thickness of gravel used is 100mm (compacted). This is for practical reasons as anything less is difficult to work and compact. Therefore all roads irrespective of their classification will be resheeted using a minimum thickness of 100mm of gravel.

The gravel resheet programme has a substantial funding gap with a frequency of 18 years and only the most needed roads will be included in the gravel resheet programme.

5.4 Bitumen Resealing

The desirable resealing frequency is every 10 years. This is determined primarily by the rate of oxidation of the bitumen which will be the same for all classes of road. However, traffic volumes will affect the rate of deterioration of the pavement after a seal has begun to crack.

It is neither affordable nor necessarily good management practice to carry out a full reseal of all sealed roads at a frequency of 10 years. The reseal frequencies have been programmed for a fifteen year cycle.

5.5 Heavy Patching

Heavy patching will take place on sections of road where it has been assessed by visual inspection as the highest priority.

5.6 Drainage

The maintenance of the road drainage system includes such work as cleaning out and repairing culverts, excavating inlet and outlet drains, grading shoulders, table drains, mitre drains, batter drains and flushing subsoil drains.

Some of this work is carried out on gravel roads as part of the normal maintenance grading activity. However, there needs to be a regular cycle where the drainage system of all roads is methodically maintained and repaired.

5.7 Urban Roads

All urban and village roads will be maintained in a similar manner to Class B. That is, inspections, grading, resheeting, resealing and drainage will be maintained at a similar frequency levels as indicated for Class B roads.

6.0 ENHANCEMENT

6.1 Introduction

Enhancement work is any work which increases the value of the road network. These works include:

- Road rehabilitation;
- Road reconstruction;
- Road realignment;
- Road widening;
- Sealing;
- Drainage improvements;
- Upgrading of black soil roads to gravel roads; and
- Upgrading or replacing bridges.

This section details the standards that will be used when enhancement work is carried out on the road network.

6.2 Standards for Enhancement Work

Road Design Standards

Road enhancement work will be carried to the following standards:

Class	Description	Formation Width (m)	Pavement Width Surface (m)	Shoulders Width Surface (m)	Design Speed (km/hr)
A	Regional	9	8.0	1	≥80
B	Local – Primary	9	8.0	1	≥70
C	Local – Secondary	7.0	6.0	0.5	≥50-70
D	Local Rural – Primary	7.0	6.0	0.5	≥70
E	Other Rural	6.0	4.0	0.0	≥40-60
F	Other Rural	5.0	4.0	0.0	≥40-60

Notes
Where enhancement works are carried out on B Double routes regardless of road class the road design standards will be at least equivalent to class B.

Drainage Structures

Drainage improvement work will be carried out to the following standards.

Class	Description	Width of Road over Drainage Structures (m)	Minimum Frequency of Drainage Structures Overtopping (yrs)
A	Regional	9.0	10
B	Local – Primary	9.0	10
C	Local – Secondary	7.0	2
D	Local Rural – Primary	7.0	2
E	Local Rural - Secondary	6.0	2
F	Other Rural	6.0	1

The priority given to the upgrading of existing timber bridges shall also reflect the relative importance of the road on which the bridge is located. In other words, bridge upgrading work on Class B or D roads shall take priority over work on Class C, E, & F roads unless there are significant safety problems.

Class U – Urban/Village Roads

Enhancement of Class U roads will be similar to that of Class B roads as shown in the above tables. Further, depending on location, kerb and gutter, drainage and traffic matters will have a bearing on final design standards.

7.0 FUNDING AND WORKS PROGRAMMES

Refer to the appendices for the following determined levels of service and works programmes. The level of service detailed reflects the current funding available and indicate the cost related to frequency of various maintenance activities.

It is to be noted that the required funding is significantly more than what is currently feasible to bring road network up to what could be considered as a “desirable level of service”.

The works programmed is only a guide and is currently changing to reflect a change in priorities and environmental conditions.

APPENDIX A MAINTENANCE ACTIVITY DESCRIPTIONS

Activity Number	Activity Name	Description
100	Asset Inspection	This Activity covers daytime and night time inspections of road assets.
120	Repair Pothole	This activity covers the repair of road pavements containing isolated holes, using either base course gravels or bituminous materials.
121	Correct Surface Shape/Edge Repair	This Activity covers the application of a levelling course using bituminous materials to badly distorted areas of pavement and the repair of pavement edge to restore the edges to line and level.
131	Control Tree/Bush	This activity includes the trimming of growth on trees and shrubs and minor lopping and removal to ensure the maintenance of legal clearances and appropriate sight distances for road users and pedestrians.
132	Control Ground Vegetation	This activity covers slashing, mowing, trimming and herbicide spraying to roadsides, verges or medians.
140	Maintenance Grade – Unsealed Roads	This activity covers the grading of unsealed road formations to provide a suitable running course, remove any build-up of vegetation, pavement material that may impede drainage and encourage scouring and also reshape and clean table and mitre drains.
141	Remove Detritus and Litter	This activity covers the removal of loose materials, dead animals and general rubbish from the road pavement and shoulders.
142	Service Rest Areas	This activity covers the maintenance of road rest areas including removal of rubbish, repair of tables, shelters and other facilities, mowing and pavement repair.
144	Graffiti and Poster Removal	This activity covers the removal of unsightly graffiti and/or posters on roadside furniture and signage.
150	Clean Drainage Structure	This activity covers the clearing of rural roads, stormwater drainage structures.
151	Repair Drainage Structures	This activity covers the repair of damaged rural roads stormwater drainage structures.
157	Maintain Table Drains	This activity is undertaken to ensure the face flow of drainage from sealed road pavements, and includes maintenance of unsealed road shoulders.
161	Signs Maintenance	This activity covers the general care and maintenance of existing signs including straightening posts, tightening bolts and clearing sign faces.
162	Signs Replace	This activity covers the replacement of all types of road signs.
163	Maintain Guideposts and Delineators	This activity covers the replacement, straightening and cleaning of guide posts and guard rail delineation.
164	Repair Guard Rail/Roadside Furniture	This activity covers the repair and maintenance of guard rail and chain wire fences.
170	Heavy Patch – Sealed Road	This activity covers “dig-out” and replacement with base course gravels of failed areas of road pavement, including sealing of the patch.
171	Gravel Resheet – Unsealed Road	This activity covers the resurfacing of unsealed roads with suitable gravel materials.
172	Bitumen Reseal – Sealed Road	This activity covers the resurfacing, with bituminous materials and aggregate, of sealed roads.
173	Dust Seal (Prime) – Unsealed Road	This Activity covers the sealing, with bituminous materials, of sections of unsealed road pavements generally in front of rural housing.
175	Shoulder Restoration (Sealed)	This activity covers the “dig-out” and replacement with base course gravels of damaged/eroded gravel shoulders on sealed roads.

Activity Number	Activity Name	Description
199	Other Road Items (Emergencies)	This activity covers any emergency works such as storm damage (trees over roads) and traffic accidents or any works not covered by other activity numbers.

APPENDIX B ROAD CLASSIFICATION

Road Number	Road Name	Road Class	School Bus Route	ADT1	ADT2	Percentage Commercial Vehicles	Natural Surface Roads	Seal (km)	Unsealed (km)	Total (km)
								590	1,584	2,174
500	Warialda	LU						17.00	1.00	18.00
600	Bingara	LU						25.02	4.39	29.41
700	Gravesend	LU						5.50	0.50	6.00
750	North Star	LU						3.00	1.00	4.00
800	Croppa Creek	LU						1.50	0.50	2.00
850	Coolatai	LU						1.00	1.00	2.00
900	Warialda Rail	LU						4.00	1.00	5.00
950	Upper Horton	LU						1.80	3.10	4.90
HW 16	Bruxner Highway	A		145	99	21		24.88		24.88
MR 132	McIntyre / Gulf Creek Road	A		122	66	16		15.80	1.80	17.60
MR 133	Killarney Gap Road	A		112				48.70	17.35	66.05
MR 134	Delungra Road	A		455				20.25	0.00	20.25
RR 63 N	Warialda - Yetman Road	A		652	148	17		49.36		49.36
RR 7705	North Star Road	A		263		18		82.25		82.25
-	Urban Regional & State Roads	AU						7.20		7.20
SR1	Copeton Dam Road	B	Y	189	69			52.34		52.34
SR10	Yallaroi Road	B	Y	39				0.12	31.38	31.50
SR11	Horton Road	B	Y	122	120	29		19.84	15.90	35.74
SR13	Oregon Road	B	Y	115	88	14		9.60	37.77	47.37
SR14	Mosquito Creek Road	B	Y	140	109	24		16.78	27.21	43.99
SR15	Gulf Creek Road	B	Y	75	43	18		6.35	11.14	17.49
SR16	Trevallyn Road	B	Y	32				4.89	24.68	29.57
SR18	Gineroi Road	B	Y	41				6.93	24.60	31.53

Road Number	Road Name	Road Class	School Bus Route	ADT1	ADT2	Percentage Commercial Vehicles	Natural Surface Roads	Seal (km)	Unsealed (km)	Total (km)
								590	1,584	2,174
SR19	Whitlow Road	B	Y	83				11.67	11.71	23.38
SR2	Bundarra Road	B	Y	294				13.75		13.75
SR20	Terry Hie Hie Road	B	Y	63		18		2.10	13.59	15.69
SR21	Peri Road	B		50				3.65	2.40	6.05
SR22	Upper Bingara Road	B	Y	25	21	17		9.96	13.45	23.41
SR23	Wearnes Road	B	Y					3.03	16.87	19.90
SR275	Gragin Boundary Road	B	Y					0.07	6.30	6.37
SR3	Elcombe Road	B	Y	154	123	11		32.99	12.23	45.22
SR32	Pallal Road	B	Y	6				1.37	11.06	12.43
SR36	Baroma Road	B		80				0.03	15.12	15.15
SR37	Oakey Creek Road	B	Y	16				0.03	8.60	8.63
SR4	Baroma Downs Road	B	Y	141	63	24		10.16	10.40	20.56
SR43	Buckie Road	B	Y	130				2.44	7.63	10.07
SR45	Bereen Road	B	Y	28				0.50	14.87	15.37
SR5	Croppa Moree Road	B	Y	156	145	24		12.32		12.32
SR56	McCuskers Road	B	Y					0.03	3.47	3.50
SR57	Currangangi Road	B	Y	30				0.00	12.40	12.40
SR6	Getta Getta Road	B	Y	130				0.31	23.29	23.60
SR68	Goat Road	B	Y					0.05	17.51	17.56
SR69	Tucka Tucka Road	B		117				0.24	21.09	21.33
SR7	Croppa Creek Road	B	Y	137	123	32		23.15		23.15
SR70	Ashton Road	B	Y					0.00	13.55	13.55
SR8	Gragin Road	B	Y	26	67	20		11.29	13.70	24.99
SR81	Langley Road	B	Y	54				0.07	8.76	8.83
SR89	Glenarthur Road	B	Y	28				0.00	9.80	9.80

Road Number	Road Name	Road Class	School Bus Route	ADT1	ADT2	Percentage Commercial Vehicles	Natural Surface Roads	Seal (km)	Unsealed (km)	Total (km)
								590	1,584	2,174
SR9	I.B. Bore Road	B	Y	63				2.14	19.93	22.07
SR17	Back Creek Road	C		24				1.98	15.21	17.19
SR216	Toolimbah Road	C		7				0.00	3.70	3.70
SR255	Crooble Road	C		90			Y	0.14	12.20	12.34
SR282	Rubbish Depot Road	C						0.00	0.53	0.53
SR285	Cranky Rock Road	C						0.37	2.79	3.16
SR30	Caroda Road	C	Y (part)	30				1.30	37.23	38.53
SR31	Eulourie Road	C	Y (part)	20				0.29	35.03	35.32
SR35	Wallangra Road	C						0.46		0.46
SR40	Blue Nobby Road	C		51				0.30	22.63	22.93
SR41	County Boundary Road	C	Y (part)	65				0.96	25.14	26.10
SR51	Towarra Road	C	Y (part)	41				0.15	26.90	27.05
SR52	Bora Link Road	C						1.39	5.87	7.26
SR58	Bingara Cemetary Road	C						0.35	0.35	0.70
SR100	Kellys Access Road	D						0.00	3.95	3.95
SR102	Noumea Road	D						1.90	7.55	9.45
SR103	Ravenscraig Road	D						0.25	8.15	8.40
SR104	Appex Lookout Road	D						1.56		1.56
SR106	Flemings Road	D						0.00	2.12	2.12
SR107	Rhynie Road	D	Y (part)					0.00	1.12	1.12
SR108	Spring Gully Road	D						0.00	0.73	0.73
SR109	Saleyards Access Road	D						0.00	0.25	0.25
SR115	Riverstone Road	D						0.00	4.40	4.40
SR116	The Forest Road	D		196?				0.00	9.35	9.35
SR117	Bundaleer Road	D		52				0.00	6.50	6.50
SR119	Woodburn Emelio Road	D	Y (part)	33				0.00	16.90	16.90

Road Number	Road Name	Road Class	School Bus Route	ADT1	ADT2	Percentage Commercial Vehicles	Natural Surface Roads	Seal (km)	Unsealed (km)	Total (km)
								590	1,584	2,174
SR12	Upper Whitlow Road	D		14				2.94	4.91	7.85
SR259	Hybla Lane	D		79				0.05	8.50	8.55
SR281	Racecourse Road	D		50				0.00	1.28	1.28
SR291	Pump Station Road	D		72				0.05	1.56	1.61
SR33	Forest Creek Road	D		28				0.05	19.09	19.14
SR34	River Road	D		21				0.24	22.54	22.78
SR38	Adams Scrub Road	D	Y (part)	29				0.21	22.70	22.91
SR39	Allandale Road	D		24				0.04	7.87	7.91
SR42	Mungle Road	D		39	35			0.00	15.36	15.36
SR44	Boundary Creek Road	D		19				1.01	11.78	12.79
SR46	Yagobe Crossing Road	D		41				0.08	0.60	0.68
SR47	Graman Road	D	Y (part)	24				0.00	11.83	11.83
SR48	New Mt Rodd Road	D		27	16			0.52	5.06	5.58
SR49	Ironbark Creek Road	D		14				0.92	10.00	10.92
SR50	Thornleigh Road	D		25				0.00	17.41	17.41
SR53	Eden Forest Road	D		42				0.12	12.11	12.23
SR54	Pinecliff Road	D		5				0.67	6.33	7.00
SR55	Moreena Mail Road	D		3				0.07	11.80	11.87
SR61	Peates Road	D		29				0.32	28.44	28.76
SR62	Hibernia Road	D						0.03	12.33	12.36
SR63	Gil Gil Creek Road	D		145				0.12	25.68	25.80
SR64	Gournama Road	D		22				0.87	16.55	17.42
SR65	Munsies Road	D		51			Y 60%	0.02	12.53	12.55
SR66	Reserve Creek Road	D	Y	45				0.06	10.26	10.32
SR67	Agincourt Road	D		27				0.00	15.46	15.46
SR71	Mt Jerrybang Road	D	Y (part)	17				0.02	12.43	12.45

Road Number	Road Name	Road Class	School Bus Route	ADT1	ADT2	Percentage Commercial Vehicles	Natural Surface Roads	Seal (km)	Unsealed (km)	Total (km)
								590	1,584	2,174
SR72	Scotts Road	D						0.00	6.77	6.77
SR73	Keetah Road	D		51				0.06	0.32	0.38
SR75	Fairford Road	D		21				1.20	12.67	13.87
SR76	Bristol Lane	D		76	73			0.02	8.33	8.35
SR78	Dewrang Road	D						0.01	4.12	4.13
SR80	Ottley Road	D						0.00	10.38	10.38
SR82	Kirewa Road	D						0.05	10.69	10.74
SR84	Bingara Airstrip Road	D						0.00	2.03	2.03
SR90	Old Bora Road	D	Y (part)					1.20	5.30	6.50
SR91	Cracknells Road	D						0.00	3.67	3.67
SR93	Sheepstation Creek Road	D		10				0.00	10.90	10.90
SR94	Rockvale Road	D						0.00	1.53	1.53
SR99	Riverview Road	D						0.00	13.58	13.58
SR101	Gap Road	E						0.00	9.47	9.47
SR105	Fairweather Road	E						0.00	2.70	2.70
SR110	Wyanbah Road	E						0.00	0.44	0.44
SR111	Kiora Road	E						0.00	4.62	4.62
SR112	Kings Road	E						0.00	2.08	2.08
SR113	Royal Oak Road	E						0.00	2.20	2.20
SR114	Lewis Road	E						0.00	1.20	1.20
SR118	Carisbrook Road	E		12				0.00	1.70	1.70
SR200	Birralee Road	E						0.00	4.92	4.92
SR201	Minilya Road	E					Y	0.00	5.96	5.96
SR202	Mistake Road	E					Y	0.00	8.58	8.58
SR203	Glenroy Road	E					Y	0.00	1.67	1.67
SR204	Dunrobyn Road	E		15				0.16	2.42	2.58
SR205	Singapore Road	E						0.03	3.14	3.17

Road Number	Road Name	Road Class	School Bus Route	ADT1	ADT2	Percentage Commercial Vehicles	Natural Surface Roads	Seal (km)	Unsealed (km)	Total (km)
								590	1,584	2,174
SR206	Warragundi Road	E						0.00	6.16	6.16
SR207	Yammacoona Estate Road	E		12				0.00	3.83	3.83
SR208	University Road	E		16				0.00	1.97	1.97
SR209	Campbell Lane	E		24				0.00	4.35	4.35
SR210	Taroon Road	E						0.00	3.94	3.94
SR211	Fish Ponds Road	E						0.00	0.97	0.97
SR212	Clifton Hill Road	E						0.00	2.03	2.03
SR213	Glencoe Road	E						0.00	2.29	2.29
SR214	Hadleigh Siding Road	E		5				0.00	4.28	4.28
SR215	Mt Rodd Road	E						0.00	3.55	3.55
SR217	Strathilsa Lane	E						0.02	4.06	4.08
SR218	Bardin Road	E						0.02	1.55	1.57
SR219	Spring Valley Road	E		20			Y	0.00	2.53	2.53
SR220	Mt View Road	E		10			Y	0.00	1.30	1.30
SR221	Bundilla Road	E		5			Y	0.00	4.29	4.29
SR222	Myall Downs Road	E					Y	0.00	15.10	15.10
SR223	Dunollie Road	E						0.00	1.60	1.60
SR224	Inverness Road	E						0.00	1.97	1.97
SR225	Girrawheen Road	E						0.00	1.29	1.29
SR226	Wydidya Road	E					Y	0.00	2.50	2.50
SR227	The Glen Road	E					Y	0.00	1.50	1.50
SR228	Narragundi Road	E						0.00	1.37	1.37
SR229	Halls Road	E		8				0.00	0.82	0.82
SR230	Glen Wood Road	E						0.00	0.78	0.78
SR231	Tolga Road	E						0.00	1.28	1.28
SR232	The Ranch Road	E					Y	0.00	4.20	4.20
SR233	Ryelands Road	E						0.00	1.56	1.56

Road Number	Road Name	Road Class	School Bus Route	ADT1	ADT2	Percentage Commercial Vehicles	Natural Surface Roads	Seal (km)	Unsealed (km)	Total (km)
								590	1,584	2,174
SR234	Bonanza Road	E						0.00	3.41	3.41
SR235	Wyellen Park Road	E					Y	0.01	1.48	1.49
SR236	High Haven Road	E					Y	0.00	4.83	4.83
SR237	Killara Road	E						0.00	2.59	2.59
SR238	Talula Road	E		17				0.00	2.16	2.16
SR239	Gournama Access Road	E					Y	0.00	2.55	2.55
SR240	Myalla Road	E						0.00	0.10	0.10
SR241	Wirra Road	E						0.00	0.10	0.10
SR242	Melrose Estate Road	E		93?				0.18	3.42	3.60
SR243	Bells Creek Road	E		9				0.00	1.65	1.65
SR244	Davis Lane	E		17			Y	0.00	1.50	1.50
SR245	Gineroi Access Road	E		19			Y	0.00	0.49	0.49
SR246	Oaklands Road	E					Y	0.00	2.09	2.09
SR247	Fairview Road	E		1			Y	0.00	1.88	1.88
SR248	Lachallan Road	E		3				0.00	1.55	1.55
SR249	Myall Park Road	E					Y	0.00	2.30	2.30
SR250	Derna Road	E		21				0.00	2.49	2.49
SR251	Braemar Road	E					Y	0.00	0.10	0.10
SR252	Brooklyn Road (North)	E		8			Y	0.00	1.16	1.16
SR253	Springdale Road	E					Y	0.00	1.56	1.56
SR254	Waverly Downs Road	E					Y	0.00	1.80	1.80
SR256	Lockharts Road	E		6				0.02	0.26	0.28
SR257	Kirkton Road	E		34				0.00	6.69	6.69
SR258	Alma Lane	E						0.00	7.18	7.18
SR260	Yarran Lane	E		20			Y	0.02	1.78	1.80
SR261	Strathallan Road	E		9				0.00	1.07	1.07
SR262	Nunga Road	E		4				0.00	7.59	7.59

Road Number	Road Name	Road Class	School Bus Route	ADT1	ADT2	Percentage Commercial Vehicles	Natural Surface Roads	Seal (km)	Unsealed (km)	Total (km)
								590	1,584	2,174
SR263	Floods Tank Road	E		16				0.02	5.97	5.99
SR264	Carlington Road	E						0.01	2.41	2.42
SR265	Innesvale Road	E		12				0.00	5.82	5.82
SR266	Kellys Gully Road	E		42				0.42	6.19	6.61
SR267	Cumle Road	E		18				0.00	4.96	4.96
SR268	Wygello Road	E		20				0.00	0.56	0.56
SR269	Kemps Road	E						0.00	5.87	5.87
SR270	Rocky Springs Road	E		6				0.00	11.20	11.20
SR271	Plevna Road	E		14			Y	0.00	2.68	2.68
SR272	Tumba Road	E		34			Y	0.00	7.08	7.08
SR273	Wilson's Road	E		11				0.00	3.50	3.50
SR274	Avon Downs Road	E		3				0.00	1.95	1.95
SR276	Twin Creek Road	E						0.00	1.88	1.88
SR277	Swifts Road	E					Y	0.06	13.78	13.84
SR278	Michaels Lane	E		25				0.00	1.52	1.52
SR279	Peach Tree Road	E					Y	0.00	0.85	0.85
SR280	Redbank Road	E					Y	0.00	1.60	1.60
SR283	Airstrip Road	E		14				0.23	1.63	1.86
SR284	Alma Access Road	E						0.05	0.25	0.30
SR286	Sonoma Road	E		1			Y	0.00	2.25	2.25
SR287	Frazer Road	E						0.00	0.43	0.43
SR288	Pondorosa Access Road	E					Y	0.00	4.10	4.10
SR289	Bushes Access	E						0.00	1.97	1.97
SR290	Kerrabee Road	E						0.00	2.00	2.00
SR292	Wilga Road	E					Y	0.00	2.13	2.13
SR294	Mindah Road	E		3				0.00	1.50	1.50
SR295	Weebah Road	E						0.00	2.00	2.00

Road Number	Road Name	Road Class	School Bus Route	ADT1	ADT2	Percentage Commercial Vehicles	Natural Surface Roads	Seal (km)	Unsealed (km)	Total (km)
								590	1,584	2,174
SR296	Windella Road	E					Y	0.00	1.00	1.00
SR297	Yarran Road	E		28				0.00	5.75	5.75
SR298	Glen Erin Road	E					Y	0.00	0.50	0.50
SR299	Upper Bingara Side Road	E						0.00	0.50	0.50
SR300	Wades Access Road	E						0.00	1.00	1.00
SR60	Pound Creek Road	E						0.00	3.80	3.80
SR74	Kurrajong Hills Road	E		33				0.01	12.26	12.27
SR77	Boonery Park Road	E		10				0.00	5.09	5.09
SR79	Girraween Road	E							9.66	9.66
SR83	South Brooklyn Road	E						0.00	0.90	0.90
SR85	Butlers Road	E						0.00	1.00	1.00
SR86	Peidmont Road	E		6				0.00	5.00	5.00
SR87	Horseshoe Bend Road	E		16				0.00	4.24	4.24
SR88	Kywarra Road	E		10				0.86	7.18	8.04
SR92	Killarney Road	E		11				0.00	6.75	6.75
SR95	Bangheet Road	E						0.00	2.00	2.00
SR96	Dufty's Road	E						0.00	1.50	1.50
SR97	Sadowa Road	E						0.00	0.88	0.88
SR98	Terreege Road	E						0.00	4.00	4.00
SR400	Access off SR13 to "Fernbank"	F					Y	0.00	1.50	1.50
SR401	SH12 to Kelly's Gully-Pine Hill	F					Y	0.00	3.25	3.25
SR500	Betts Access Road	F						0.00	2.34	2.34
SR501	Bobby Link Road	F						0.00	1.46	1.46
SR502	Hilliers Road	F						0.00	2.00	2.00
SR503	Little Plain Access Road	F						0.00	5.73	5.73
SR504	Lovers Lane	F						0.00	0.62	0.62
SR505	Mitiamo Road	F						0.00	1.00	1.00

Road Number	Road Name	Road Class	School Bus Route	ADT1	ADT2	Percentage Commercial Vehicles	Natural Surface Roads	Seal (km)	Unsealed (km)	Total (km)
								590	1,584	2,174
SR506	Power Station Access Road	F						0.00	0.68	0.68
SR507	Talorang Access	F						0.00	4.02	4.02
SR508	Wendouree Access Road	F						0.00	0.60	0.60
SR509	Yarrowonga Road	F						0.00	0.50	0.50
SR510	Dunnee Road	F						0.00	2.90	2.90
SR511	Ennisdale Road	F						0.00	1.00	1.00
SR512	Otranto Road	F						0.00	1.00	1.00
SR513	Lagoona Road	F						0.00	1.00	1.00
SR514	Rodelle Road	F						0.00	1.00	1.00
SR550	Allambie Access Road	F						0.00	14.00	14.00
SR551	Beaufort Access Road	F						0.00	1.02	1.02
SR552	Burima Road	F						0.00	3.00	3.00
SR553	Eulagong Access Road	F						0.00	7.00	7.00
SR554	Hazeldean Access Road	F						0.00	1.40	1.40
SR555	Mardon Road	F						0.00	1.00	1.00
SR556	Molroy West Access	F						0.00	1.85	1.85
SR557	Mt Royal Road	F						0.00	1.00	1.00
SR558	The Grove Road	F						0.00	1.00	1.00
SR559	Willow View Road	F						0.00	0.50	0.50
SR560	Yarrowonga Access Road	F						0.00	0.40	0.40
SR561	Cluny Access Road	F						0.00	0.50	0.50

APPENDIX C LEVELS OF SERVICE

MAINTENANCE AND OPERATING CAPITAL ACTIVITIES

100 Asset Inspections (Sealed / Unsealed Roads)

Class	Road Description	Inspections per Year	Desired Levels of Service
			Inspections per Year
A	Regional Rural Roads	6	6
AU	Regional Urban Roads	6	6
B	Major Through Roads	3	3
C	Minor Through Roads	3	3
D	Primary Access Roads	2	2
E	Secondary Access Roads	2	2
F	Other Rural Roads	1	1
LU	Urban Roads	3	3

119 Traffic Facilities - Pavement & line marking (Sealed Roads)

Class	Road Description	Frequency (Yrs)	Frequency/Yr	% / km	Desired Levels of Service		
					Frequency (Yrs)	Frequency/Yr	% / km
A	Regional Rural Roads	4	0.25	30.0%	4	0.25	30.0%
AU	Regional Urban Roads	4	0.25	15.0%	4	0.25	25.0%
B	Major Through Roads	4	0.25	13.2%	4	0.25	25.0%
C	Minor Through Roads				4	0.25	25.0%
D	Primary Access Roads				4	0.25	25.0%
E	Secondary Access Roads				4	0.25	25.0%
F	Other Rural Roads				4	0.25	25.0%
LU	Urban Roads	1	1.00	20.00%	4	0.25	25.0%

120 Repair Pothole (Sealed / Unsealed Roads)

Class	Road Description	Average Road Area / KM	Patch %	Area (m2)	Desired Levels of Service		
					Average Road Area / KM	Patch %	Area (m2)
A	Regional Rural Roads	7000	0.15%	10.5	7000	0.15%	10.5
AU	Regional Urban Roads	7000	0.15%	10.5	7000	0.15%	10.5
B	Major Through Roads	6000	0.10%	6	6000	0.15%	9
C	Minor Through Roads	6000	0.05%	3	6000	0.10%	6
D	Primary Access Roads	6000	0.05%	3	6000	0.10%	6
E	Secondary Access Roads				6000	0.10%	6
F	Other Rural Roads				6000	0.10%	6
LU	Urban Roads	6000	0.20%	12	6000	0.20%	12

121 Correct Surface / Edge Patch (Sealed Roads)

Class	Road Description	Average Road Area / KM	Patch %	Area (m2)	Desired Levels of Service		
					Average Road Area / KM	Patch %	Area (m2)
A	Regional Rural Roads	7000	0.15%	10.5	7000	0.15%	10.5
AU	Regional Urban Roads	7000	0.15%	10.5	7000	0.15%	10.5
B	Major Through Roads	6000	0.15%	9	6000	0.15%	9
C	Minor Through Roads	6000	0.10%	6	6000	0.10%	6
D	Primary Access Roads				6000	0.10%	6
E	Secondary Access Roads				6000	0.10%	6
F	Other Rural Roads				6000	0.10%	6
LU	Urban Roads	6000	0.10%	6	6000	0.10%	6

127 Shoulder Grade (Sealed Roads)

Class	Road Description	Frequency (Yrs)	Frequency/Yr	Rate/Km	Desired Levels of Service		
					Frequency (Yrs)	Frequency/Yr	Rate/Km
A	Regional Rural Roads	10	0.10		10	0.10	
AU	Regional Urban Roads	10	0.10		10	0.10	
B	Major Through Roads	15	0.07		15	0.07	
C	Minor Through Roads	15	0.07		15	0.07	
D	Primary Access Roads				15	0.07	
E	Secondary Access Roads				15	0.07	
F	Other Rural Roads				15	0.07	
LU	Urban Roads	10	0.10		10	0.10	

131 Control Trees / Bush (Sealed / Unsealed Roads)

Class	Road Description	Frequency (Yrs)	Frequency/Yr	% / km	Desired Levels of Service		
					Frequency (Yrs)	Frequency/Yr	% / km
A	Regional Rural Roads	1	1.00	7%	1	1.00	7%
AU	Regional Urban Roads	1	1.00	7%	1	1.00	7%
B	Major Through Roads	3	0.33	5%	3	0.33	5%
C	Minor Through Roads	10	0.10	5%	10	0.10	5%
D	Primary Access Roads	10	0.10	2%	10	0.10	5%
E	Secondary Access Roads				10	0.10	5%
F	Other Rural Roads				10	0.10	5%
LU	Urban Roads	1	1.00	5%	1	1.00	5%

132 Mowing / Slashing (Sealed Roads)

Class	Road Description	Average Road Area / KM	Number/Yr	Yearly Ha/km	Desired Levels of Service		
					Average Road Area / KM	Number/Yr	Yearly Ha/km
A	Regional Rural Roads	7200	4	1.44	7200	4	1.44
AU	Regional Urban Roads	7200	4	1.44	7200	4	1.44
B	Major Through Roads	7200	4	1.44	7200	4	1.44
C	Minor Through Roads				7200	4	1.44
D	Primary Access Roads				7200	4	1.44
E	Secondary Access Roads				7200	4	1.44
F	Other Rural Roads				7200	4	1.44
LU	Urban Roads				7200	4	1.44

140 Maintenance Grading (Unsealed Roads)

Class	Road Description	Full Surface Grading / Number / Year	Desired Levels of Service
			Full Surface Grading / Number / Year
A	Regional Rural Roads	6	6
AU	Regional Urban Roads	6	6
B	Major Through Roads	3	6
C	Minor Through Roads	2	4
D	Primary Access Roads	1.5	4
E	Secondary Access Roads	1	4
F	Other Rural Roads	1	2
LU	Urban Roads	1	4

151 Repair Drainage Structure (Sealed / Unsealed Roads)

Class	Road Description	Frequency/Yr	% / km	Desired Levels of Service	
				Frequency/Yr	% / km
A	Regional Rural Roads	1	5%	1	5%
AU	Regional Urban Roads	1	5%	1	5%
B	Major Through Roads	1	5%	1	5%
C	Minor Through Roads	1	5%	1	5%
D	Primary Access Roads	1	5%	1	5%
E	Secondary Access Roads	1	5%	1	5%
F	Other Rural Roads	1	5%	1	5%
LU	Urban Roads				

157 Table Drain Maintenance (Sealed Roads)

Class	Road Description	Maintenance Frequency (Yrs)	Frequency/Yr	Rate/Yr/Km	Desired Levels of Service		
					Maintenance Frequency (Yrs)	Frequency/Yr	Rate/Yr/Km
A	Regional Rural Roads	3	0.33		3	0.33	
AU	Regional Urban Roads	3	0.33		3	0.33	
B	Major Through Roads	4	0.25		4	0.25	
C	Minor Through Roads	6	0.17		6	0.17	
D	Primary Access Roads	8	0.13		6	0.17	
E	Secondary Access Roads				6	0.17	
F	Other Rural Roads				6	0.17	
LU	Urban Roads	1	1.00		1	1.00	

161 Signs Maintenance (Sealed / Unsealed Roads)

Class	Road Description	Average Number / KM	% / yr	Desired Levels of Service	
				Average Number / KM	% / yr
A	Regional Rural Roads	5	30%	5	30%
AU	Regional Urban Roads	5	30%	5	30%
B	Major Through Roads	2	30%	2	30%
C	Minor Through Roads	2	10%	2	10%
D	Primary Access Roads	0.5	5%	0.5	5%
E	Secondary Access Roads	0.5	5%	0.5	5%
F	Other Rural Roads	0.1	5%	0.1	5%
LU	Urban Roads	20	20%	20	20%

162 Signs Replacement (Sealed / Unsealed Roads)

Class	Road Description	Average Number / KM	% / yr	Desired Levels of Service	
				Average Number / KM	% / yr
A	Regional Rural Roads	5	30%	5	30%
AU	Regional Urban Roads	5	30%	5	30%
B	Major Through Roads	2	30%	2	30%
C	Minor Through Roads	2	10%	2	10%
D	Primary Access Roads	0.5	5%	0.5	5%
E	Secondary Access Roads	0.5	5%	0.5	5%
F	Other Rural Roads	0.1	5%	0.1	5%
LU	Urban Roads	20	30%	20	30%

163 Guideposts / Delineators (Sealed / Unsealed Roads)

Class	Road Description	Average Number / KM	% / yr	Desired Levels of Service	
				Average Number / KM	% / yr
A	Regional Rural Roads	20	20%	20	30%
AU	Regional Urban Roads	20	20%	20	30%
B	Major Through Roads	20	15%	20	30%
C	Minor Through Roads	10	5%	10	10%
D	Primary Access Roads	6	5%	6	5%
E	Secondary Access Roads	6	5%	6	5%
F	Other Rural Roads	2	5%	2	5%
LU	Urban Roads	10	5%	10	5%

164 Repair Barrier Fencing (Sealed / Unsealed Roads)

Class	Road Description	Average Metres / KM	% / Yr	Desired Levels of Service	
				Average Metres / KM	% / Yr
A	Regional Rural Roads	25	5%	25	5%
AU	Regional Urban Roads	25	5%	25	5%
B	Major Through Roads	2	2%	5	5%
C	Minor Through Roads	1	2%	5	2%
D	Primary Access Roads	0.5	2%	2	2%
E	Secondary Access Roads	0.5	2%	2	2%
F	Other Rural Roads				
LU	Urban Roads	1	2%	5	2%

170 Heavy Patching (Sealed Roads)

Class	Road Description	Average Road Area / KM	Patch %	Desired Levels of Service	
				Average Road Area / KM	Patch %
A	Regional Rural Roads	7000	5.76%	7000	5.76%
AU	Regional Urban Roads	7000	5.76%	7000	5.76%
B	Major Through Roads	6000	4.00%	6000	4.00%
C	Minor Through Roads	6000	4.00%	6000	4.00%
D	Primary Access Roads	6000	4.00%	6000	4.00%
E	Secondary Access Roads	6000	4.00%	6000	4.00%
F	Other Rural Roads	0		0	
LU	Urban Roads	6000	3.00%	6000	3.00%

171 Gravel Resheeting (Unsealed Roads)

Class	Road Description	Average Road Area / KM	Frequency (Yrs)	Frequency/Yr	Desired Levels of Service		
					Average Road Area / KM	Frequency (Yrs)	Frequency/Yr
A	Regional Rural Roads	7000	5	0.20	7000	5	0.20
AU	Regional Urban Roads	7000	5	0.20	7000	5	0.20
B	Major Through Roads	6000	16	0.06	6000	5	0.20
C	Minor Through Roads				6000	5	0.20
D	Primary Access Roads				6000	5	0.20
E	Secondary Access Roads				6000	5	0.20
F	Other Rural Roads				6000	5	0.20
LU	Urban Roads	6000	10	0.10	6000	5	0.20

172 Bitumen Resealing (Sealed Roads)

Class	Road Description	Average Road Area / KM	Frequency (Yrs)	Frequency/Yr	Desired Levels of Service		
					Average Road Area / KM	Frequency (Yrs)	Frequency/Yr
A	Regional Rural Roads	7000	15	0.07	7000	10	0.10
AU	Regional Urban Roads	7000	15	0.07	7000	10	0.10
B	Major Through Roads	7000	15	0.07	6000	10	0.10
C	Minor Through Roads	6000	15	0.07	6000	10	0.10
D	Primary Access Roads	6000	15	0.07	6000	10	0.10
E	Secondary Access Roads	6000	15	0.07	6000	10	0.10
F	Other Rural Roads	6000	15	0.07	6000	10	0.10
LU	Urban Roads	6000	15	0.07	6000	10	0.10

175 Shoulder Restoration (Sealed Roads)

Class	Road Description	Average m2 / Km / Yr	Frequency (Yrs)	Frequency/Yr	Desired Levels of Service		
					Average m2 / Km / Yr	Frequency (Yrs)	Frequency/Yr
A	Regional Rural Roads	100	30	0.03	120	20	0.05
AU	Regional Urban Roads	100	30	0.03	120	20	0.05
B	Major Through Roads	100	30	0.03	120	20	0.05
C	Minor Through Roads	100	30	0.03	120	20	0.05
D	Primary Access Roads				120	20	0.05
E	Secondary Access Roads				120	20	0.05
F	Other Rural Roads				120	20	0.05
LU	Urban Roads				120	20	0.05

199 Other Road Items (Sealed / Unsealed Roads)

Class	Road Description	Item	Desired Levels of Service
			Item
A	Regional Rural Roads	20	20
AU	Regional Urban Roads	20	20
B	Major Through Roads	20	20
C	Minor Through Roads	20	20
D	Primary Access Roads	18.93	20
E	Secondary Access Roads	15	20
F	Other Rural Roads	15	20
LU	Urban Roads	20	20

APPENDIX D FUNDING GAP BY ACTIVITY

Funding Gap By Activity

Activity Description		Levels of Service							
		Regional Roads			Local Roads			Total Funding Gap	
Activity	\$	Targeted	Desirable	Funding Gap	Targeted	Desirable	Funding Gap		
Total		\$872,528	\$1,062,492	-\$189,964	\$2,164,446	\$8,044,041	-\$5,879,594	-\$6,069,559	
100	Asset Inspections	Mtce	\$5,057	\$5,057	\$0	\$14,912	\$14,912	\$0	\$0
119	Traffic Facilities	Mtce	\$27,545	\$27,815	-\$270	\$30,456	\$32,015	-\$1,559	-\$1,829
120	Repair Pothole	Mtce	\$59,004	\$59,004	\$0	\$151,711	\$294,413	-\$142,703	-\$142,703
121	Correct Surface / Edge Patch	Mtce	\$54,781	\$54,781	\$0	\$57,180	\$59,294	-\$2,114	-\$2,114
127	Shoulder Grade (sealed roads)	Mtce	\$9,938	\$9,938	\$0	\$9,443	\$9,891	-\$447	-\$447
131	Control Trees / Bush	Mtce	\$3,746	\$3,746	\$0	\$3,500	\$4,225	-\$725	-\$725
132	Mowing/Slashing (sealed roads)	Mtce	\$45,077	\$45,077	\$0	\$46,848	\$61,960	-\$15,112	-\$15,112
140	Maint. Grading	Mtce	\$34,470	\$34,470	\$0	\$612,383	\$1,447,555	-\$835,172	-\$835,172
151	Repair Drainage Structure	Mtce	\$7,024	\$7,024	\$0	\$48,161	\$48,161	\$0	\$0
157	Table Drain Maint.	Mtce	\$21,697	\$21,697	\$0	\$33,139	\$33,391	-\$253	-\$253
161	Signs Maint.	Mtce	\$2,107	\$2,107	\$0	\$4,080	\$4,080	\$0	\$0
162	Signs Replacement	Mtce	\$4,215	\$4,215	\$0	\$9,658	\$9,658	\$0	\$0
163	Guideposts Delineators	Mtce	\$10,704	\$16,055	-\$5,352	\$25,527	\$48,062	-\$22,535	-\$27,886
164	Repair Barrier Fencing	Mtce	\$66,898	\$66,898	\$0	\$8,530	\$48,122	-\$39,592	-\$39,592
170	Heavy Patching	Mtce	\$73,626	\$73,626	\$0	\$57,645	\$57,645	\$0	\$0
171	Gravel Resheeting	Capital Unsealed	\$80,430	\$80,430	\$0	\$540,443	\$5,185,584	-\$4,645,141	-\$4,645,141
172	Bitumen Resealing	Capital Sealed	\$347,816	\$521,724	-\$173,908	\$461,428	\$614,682	-\$153,254	-\$327,162
175	Shoulder Restoration	Mtce	\$13,043	\$23,478	-\$10,434	\$13,959	\$32,271	-\$18,312	-\$28,746
199	Other Road Items	Mtce	\$5,352	\$5,352	\$0	\$35,443	\$38,120	-\$2,677	-\$2,677

APPENDIX E ENHANCEMENT CAPITAL WORKS PROGRAMME

Road Number	Road Name	Road Class	Enhancement Capital Works Programme						Total
			Project 1		Project 2		Project 3		
MR 133	Killarney Gap Road	A	R2R Strategic	1,000,000	REPAIR Programme	242,450	R2R Strategic (Council)	125,000	\$2,682,841
MR 134	Delungra Road	A	Pavement rehabilitation	140,000					\$140,000
RR 63 N	Warialda - Yetman Road	A	Pavement rehabilitation	214,016					\$214,016
SR15	Gulf Creek Road	B	Construct causeway and pipe (FAGS) @ "Waroonga". Wooden culvert collapsed and water running across road.	50,000					\$50,000
SR16	Trevallyn Road	B	Barrier Fencing "Bereen Mtn"	20,000					\$20,000
SR3	Elcombe Road	B	Construction and Seal (R2R)	405,688	Replace Causeway @ 1.5km (FAGS). Broken and uneven surface.	50,000			\$455,687
SR4	Baroma Downs Road	B	Construction and Seal (R2R)			405,688			\$405,687
SR34	River Road	D	Construct new causeway. Pipe insufficient capacity.	30,000					\$30,000

APPENDIX F SENSITIVITY ANALYSIS OF ENHANCING THE SEALED ROAD NETWORK

Sensitivity Analysis of Enhancing the Sealed Road Network

Existing Road Network				
(Estimated Annual Mtce & Operation Capital Expense)				
Class	Seal	Unsealed	Total	\$3,036,974
	(km)	(km)	(km)	
Total Regional Roads			267.59	\$872,528
A	241.24	19.15	260.39	\$851,305
AU	7.20	0.00	7.20	\$21,223
Total Local Roads			1906.00	\$2,164,446
B	258.20	460.41	718.61	\$1,555,546
C	7.69	187.58	195.27	\$124,531
D	14.66	475.72	490.38	\$208,082
E	2.12	365.04	367.16	\$88,064
F	0.00	63.27	63.27	\$14,266
LU	58.82	12.49	71.31	\$173,957

Road Class A Sealed				
(Estimated Annual Mtce & Operation Capital Expense)				
Class	Seal	Unsealed	Total	\$2,967,855
	(km)	(km)	(km)	
Total Regional Roads			267.59	\$803,409
A	260.39	0.00	260.39	\$782,186
AU	7.20	0.00	7.20	\$21,223
Total Local Roads			1906.00	\$ 2,164,446
B	258.20	460.41	718.61	\$ 1,555,546
C	7.69	187.58	195.27	\$ 124,531
D	14.66	475.72	490.38	\$ 208,082
E	2.12	365.04	367.16	\$ 88,064
F	0.00	63.27	63.27	\$ 14,266
LU	58.82	12.49	71.31	\$ 173,957

Road Class A, LU Sealed				
(Estimated Annual Mtce & Operation Capital Expense)				
Class	Seal	Unsealed	Total	\$2,968,233
	(km)	(km)	(km)	
Total Regional Roads			267.59	\$803,409
A	260.39	0.00	260.39	\$782,186
AU	7.20	0.00	7.20	\$21,223
Total Local Roads			1906.00	\$2,164,825
B	258.20	460.41	718.61	\$1,555,546
C	7.69	187.58	195.27	\$124,531
D	14.66	475.72	490.38	\$208,082
E	2.12	365.04	367.16	\$88,064
F	0.00	63.27	63.27	\$14,266
LU	71.31	0.00	71.31	\$174,335

Road Classes A, LU, B Sealed				
(Estimated Annual Mtce & Operation Capital Expense)				
Class	Seal	Unsealed	Total	\$3,118,382
	(km)	(km)	(km)	
Total Regional Roads			267.59	\$803,409
A	260.39	0.00	260.39	\$782,186
AU	7.20	0.00	7.20	\$21,223
Total Local Roads			1906.00	\$2,314,973
B	718.61	0.00	718.61	\$1,705,694
C	7.69	187.58	195.27	\$124,531
D	14.66	475.72	490.38	\$208,082
E	2.12	365.04	367.16	\$88,064
F	0.00	63.27	63.27	\$14,266
LU	71.31	0.00	71.31	\$174,335

Road Classes A, LU, B, C Sealed (Estimated Annual Mtce & Operation Capital Expense)				
Class	Seal	Unsealed	Total	\$3,336,956
	(km)	(km)	(km)	
Total Regional Roads			267.59	\$803,409
A	260.39	0.00	260.39	\$782,186
AU	7.20	0.00	7.20	\$21,223
Total Local Roads			1906.00	\$2,533,548
B	718.61	0.00	718.61	\$1,705,694
C	195.27	0.00	195.27	\$343,106
D	14.66	475.72	490.38	\$208,082
E	2.12	365.04	367.16	\$88,064
F	0.00	63.27	63.27	\$14,266
LU	71.31	0.00	71.31	\$174,335

Road Classes A, LU, B, C, D Sealed (Estimated Annual Mtce & Operation Capital Expense)				
Class	Seal	Unsealed	Total	\$3,878,873
	(km)	(km)	(km)	
Total Regional Roads			267.59	\$803,409
A	260.39	0.00	260.39	\$782,186
AU	7.20	0.00	7.20	\$21,223
Total Local Roads			1906.00	\$3,075,464
B	718.61	0.00	718.61	\$1,705,694
C	195.27	0.00	195.27	\$343,106
D	490.38	0.00	490.38	\$749,999
E	2.12	365.04	367.16	\$88,064
F	0.00	63.27	63.27	\$14,266
LU	71.31	0.00	71.31	\$174,335

Road Classes A, LU, B, C, D, E Sealed (Estimated Annual Mtce & Operation Capital Expense)				
Class	Seal	Unsealed	Total	\$4,315,607
	(km)	(km)	(km)	
Total Regional Roads			267.59	\$803,409
A	260.39	0.00	260.39	\$782,186
AU	7.20	0.00	7.20	\$21,223
Total Local Roads			1906.00	\$3,512,198
B	718.61	0.00	718.61	\$1,705,694
C	195.27	0.00	195.27	\$343,106
D	490.38	0.00	490.38	\$749,999
E	367.16	0.00	367.16	\$524,798
F	0.00	63.27	63.27	\$14,266
LU	71.31	0.00	71.31	\$174,335

Road Classes A, LU, B, C, D, E, F Sealed (Estimated Annual Mtce & Operation Capital Expense)				
Class	Seal	Unsealed	Total	\$4,380,142
	(km)	(km)	(km)	
Total Regional Roads			267.59	\$803,409
A	260.39	0.00	260.39	\$782,186
AU	7.20	0.00	7.20	\$21,223
Total Local Roads			1906.00	\$3,576,733
B	718.61	0.00	718.61	\$1,705,694
C	195.27	0.00	195.27	\$343,106
D	490.38	0.00	490.38	\$749,999
E	367.16	0.00	367.16	\$524,798
F	63.27	0.00	63.27	\$78,801
LU	71.31	0.00	71.31	\$174,335

Notes:

Operating capital include bitumen resealing and gravel resheet.

The estimated annual maintenance and operating capital expenses are determined by the length of sealed and unsealed road network and the respective levels of service.