DESIGN STANDARDS FOR ROADS GUIDELINE

1. Scope:

This Guideline applies to all roads under the jurisdiction of Rockhampton Regional Council, but is not applicable to roads required as a result of an application under the Sustainable Planning Act 2009.

2. Purpose:

This guideline provides design standards that are to be applied to roads under the jurisdiction of Rockhampton Regional Council.

3. Related Documents:

Primary
Upgrading of Unsealed Rural Roads to a Higher Standard Policy
Opening of Unconstructed Roads Policy and Procedure

Secondary
Nil

4. Definitions:

Council	Rockhampton Regional Council
Road	Has the same meaning as road in the *Local Government Act 2009*

5. Guideline:

Appendix 1 is to be applied to any new unsealed roads constructed within the region or the upgrading of existing unsealed roads.

As funds allow, Council will endeavor to alter existing roads to meet the standards identified in Appendix 1.

6. Review Timelines:

This Guideline will be reviewed when any of the following occur:
1. The related information is amended or replaced; or
2. Other circumstances as determined from time to time by the General Manager.

7. Responsibilities:

Sponsor	Chief Executive Officer
Business Owner	General Manager Regional Services
Guideline Owner	Strategic Manager Civil Operations
Guideline Quality Control	Corporate Improvement and Strategy

EVAN PARDON
CHIEF EXECUTIVE OFFICER

Main geometric design standards for unsealed roads

Road Classification (Operational Class)	150			125			100			75			30			10			Comments
Typical Traffic Counts	125-150			100-125			75-100			30-75			10--30			<10			
Terrain type[1]	Flat	Rolling	M'tain	Flat	Rolling	M'tain	Flat	Rolling	M'tain	Flat	Rolling	M'tain	Flat	Rolling	M'tain	Flat	Rolling	M'tain	
Main geometric characteristic																			
based on safety, cost and environmental considerations																			
Operating speed value km/h	80	70	50	70	50	30	70	50	30	60	40	20	60	40	20	n/a	n/a	n/a	based on 85th percentile speed
Cross-section elements																			
number of traffic lanes	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	unsealed lanes
minimum cross fall unsealed road	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4	min of 4% to drain rainfall off tracks
Maximum superelevation %[2]	6	8	10	6	8	10	6	8	10	6	8	10	6	8	10	n/a	n/a	n/a	
minimum traffic lane width m[3]	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
minimum shoulder width m	0.25	0	0	0	0	1	1.25	1	0.75	1	0.75	0.5	0.5	0.25	0	0	0	0	
minimum carriageway width (lanes + shoulder) m	6.5	6	6	6	6	5	5.5	5	4.5	5	4.5	4	4	3.5	3	3	3	3	
Horizontal geometry																			
minimum radius curve m[5]	320	250	140	250	100	35	250	100	35	170	60	15	170	60	15	n/a	n/a	n/a	
minimum stopping sight distance m[6]	150	120	70	120	70	30	120	70	30	90	50	30	90	50	30	n/a	n/a	n/a	
minimum meeting sights distance m[7]	290	230	130	230	130	60	230	130	60	180	100	60	180	100	60	n/a	n/a	n/a	
Vertical geometry																			
maximum vertical grade %[8]	6	8	12	6	8	12	6	8	12	6	8	12	6	8	12	n/a	n/a	n/a	for tracks avoid steep grades to reduce soil erosion
minimum crest vertical curve K values[9]	50	30	10	30	10	5	30	10	5	19	8	2	19	8	2	n/a	n/a	n/a	
Minimum sag vertical curve K values[10]	11	8	4	8	4	3	8	4	3	6	3	2	6	3	2	n/a	n/a	n/a	
Drainage																			
Cross Road Drainage Immunity -11	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Longitudinal Drainage Immunity - 12	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
RCP & RCBC desirable length	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	4.8	4.8	4.8	4.8	4.8	4.8	can be longer at curve widenings, intersections, etc
Floodway desirable width	6.5	6.5	6.5	6.5	6.5	6.5	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	can be wider at curve widenings, intersections, etc
Gravel Pavement																			
% of road length covered with imported gravel meeting unsealed road guidelines	75%	75%	75%	70%	70%	70%	60%	60%	60%	55%	55%	55%	25%	25%	25%	10%	10%	10%	

1 Flat, rolling or mountainous terrain

2 The maximum superelevation values will need to take into account the use of the road by high loaded heavy vehicles, speed and curve radii

3 In cases where there are a high percentage of heavy vehicles (>20%) minimum lane widths can be increased by 0.5m

5 Values rounded up. For minimum radius curves widening on the inside of a curve may be necessary to accommodate longer vehicles.

6 Based on a reaction time of 2 seconds and surface coefficients relating to unsealed surfaces and values rounded up. Values based on flat grades and allowances will need to be made for up and down grades.

7 This is mainly a requirement of single lane two-way roads. Values rounded up.

8 In some cases higher grades of up to 20% can be allowed for short sections (about 150m). Keep grades on unsealed roads lower due to ravelling and scouring of surface.

9 Calculation of these values is to be based on information contained in Austroads (2003). The lengths o f the vertical curve (L) is based on the production of K multiplied by the algebraic difference in grades percentage A (i.e. L = K x A).

10 Sag values are based on comfort on control criteria.

11. Class 10, 30 & 75 roads will require sutable gravel or hard surface treatments at gullies and creek crossing

12. Class 10, 30 & 75 roads shall have formation 300mm above natural surface or 300mm deep table drains

APPENDIX 1