

## UPGRADING OF UNSEALED RURAL ROADS TO SEALED STANDARD PROCEDURE

### 1. Scope

The Upgrading of Unsealed Rural Roads to Sealed Standard Procedure (this 'Procedure') applies to unsealed rural roads under the jurisdiction of Livingstone Shire Council.

### 2. Purpose

This Procedure relates to requests for the upgrading of unsealed rural roads to a sealed standard. The Procedure:

- a) establishes guidelines and scoring criteria for assessing such requests; and
- b) provides direction for the evaluation of such requests based on scoring criteria to provide a means of ranking projects in priority order prior to inclusion in the Capital Works Program.

### 3. Related Documents

#### Primary

Upgrading of Unsealed Rural Roads to Sealed Standard Policy

#### Legislative reference

*Local Government Act 2009* (Qld) ss 60(1), (2)(b)

#### Related documents

AUSTROADS - Guide to Road Design Part 3: Geometric Design  
Capricorn Municipal Development Guidelines

### 4. Definitions

To assist in interpretation, the following definitions shall apply:

|            |  |
|------------|--|
| AADT       | Annual Average Daily Traffic.  |
| Council    | Livingstone Shire Council.   |
| Road       | Has the same meaning as road in the <i>Local Government Act 2009</i> (Qld).  |
| Rural road | A road servicing allotments in a rural area, for which the majority of allotments have a road frontage in excess of 40m. |

### 5. Procedure

Applications will be assessed by Infrastructure Services using the scoring criteria to prioritise projects and the decision to seal a rural road will be based on the following factors:

- 1) Safety features;
- 2) Current and projected traffic volumes (AADT);
- 3) Maintenance costs;
- 4) Type of traffic that will use the road;
- 5) Road classification (i.e. collector road or access road);
- 6) The roads geometric standard;
- 7) Road pavement and drainage system of the unsealed road; and
- 8) If the road is a school bus route.

Assessment of the above factors will determine which roads are suitable for sealing and will be upgraded to the relevant standard nominated in Item 5.1. There is no guarantee that the upgrade of the road will be included in the budget.

## **5.1 Design Standards of Upgraded Sealed Roads**

### **5.1.1 Minimum Standard Seals**

Roads under this category will receive a layer of CBR 40 compacted gravel (as per design Chart 8 attached) and a two coat bitumen seal. Minimum standard seals are generally formed and cross drained to minimum standards, this means significant rain events may cause temporary closure.

All roads that qualify for this category have to meet the following evaluation criteria:

- 1) Traffic volumes – an unsealed rural road must be in the range of 150 - 500 AADT. A road will not be considered for a minimum standard seal if there is less than 150 AADT unless there are significant issues shown in the assessment score. A road that has an AADT greater than 500 will qualify for a full road design;
- 2) Minimum width – the road has the ability to be easily upgraded to the appropriate formation and seal width as set out in Table 1. The AADT of the road must be known so that the appropriate pavement width in Table 1 can be selected;
- 3) Solid base – the road must have a solid, well compacted road base that is able to support the overlay for the expected traffic loads. Having a solid road base will minimise future pavement failures if the road is sealed;
- 4) Reasonable alignment – the road must have reasonable gradients, vertical/horizontal alignment and sight distance that will not compromise safety if sealed. If the road has poor alignment then consideration may be given to an upgrade to full design standard (refer to Item 5.1.2);
- 5) Commercial vehicles – roads in this category should not carry excessive amounts of heavy traffic. If the road has commercial vehicle counts greater than 20% of AADT then the road should be considered for full design (refer to Category 2); and
- 6) Drainage system – if the unsealed road has a poor longitudinal drainage system then every effort should be made to provide adequate longitudinal drainage to minimise future pavement failures.

**Table 1: Minimum Standard Seal Element Widths**

| Element Width    | Design AADT |                     |                     |                      |
|------------------|-------------|---------------------|---------------------|----------------------|
|                  | 100-150     | 150-250             | 251-500             | >500                 |
| Formation        | 5.5 m       | 6.5 m               | 8.0 m               | Refer To Full Design |
| Traffic Lanes    | 5.5 m       | 6.5 m<br>(2 x 3.25) | 6.5 m<br>(2 x 3.25) | Refer To Full Design |
| Total Shoulder   | 0.0m        | 0.0 m               | 1.5 m               | Refer To Full Design |
| Sealed Shoulders | 0.0m        | 0.0 m               | 0.0 m               | Refer To Full Design |

Once the road has met the criteria identified above then the road is prioritised using the scoring points and weighting method displayed in Table 2.

**Table 2: Scoring and Assessment Method for Category 1 – Minimum Standard Seal**

| Criteria  | Points   | Weighting |
|---|--|-----------|
| Traffic Volumes                                       | Add 1 point for every vehicle<br>Additional 1 point for every commercial vehicle (max of 20% of AADT)<br>Additional 25 points if road is a school bus route  | 1         |
| Strategic Significance                                | Examples: tourist location/facility, land development (abutting or servicing), industry or mines, etc.<br>Nil 0 – (no through road < 10ha – no farms)<br>Low 2 – (no through road, some > 10ha – farms, tourist)<br>Medium 4 – (through road with 1-2 tourist facilities)<br>High 6 – (through road with 2+ tourist facilities or major link)  | 5         |
| Costs incurred in maintaining unsealed road           | Low 1 – (close to depots, suitable gravel and water)<br>Medium 2 – (2 of the above)<br>High 5 – (none of the above)  | 10        |
| Geometric design and safety features of unsealed road | Take into account the standard of the current geometric design of the unsealed road. This includes vertical/horizontal alignment, sight distance, etc. Safety features of the unsealed road include actual/potential accidents.<br>0 – Poor horizontal, vertical alignment and width <5m.<br>1 – Poor width <5m (good horizontal and/or vertical alignment).<br>2 – Moderate width 5-6.5m (poor horizontal and/or vertical alignment).<br>4 – Good horizontal alignment and minimum 6.5m width.<br>6 – Good horizontal, vertical alignment and minimum 6.5m width. | 10        |
| Pavement subject to inundation and road side drainage | 8 - Unlikely and good longitudinal drainage<br>5 - Infrequent inundation and/or poor cross drainage<br>2 - Frequent inundation and/or poor cross and longitudinal drainage   | 5         |

Scores less than 250 do not justify sealing. Scores in excess of 250 may result in the programming of a minimum standard seal at widths detailed in Table 1 and Appendix 1. Scores in excess of 500 should be considered for full construction.

### 5.1.2 Full Road Design

Projects proposed for funding are assessed using benefit analysis as a guide to determine what priority should be allocated to a project. Roads under this category will require formation and pavement widening, full depth pavement and Q2 or Q5 drainage. Roads that qualify for this category do not meet one or all of the evaluation criteria set out in Category 1 – Minimum Standard Seal.

The main criteria for this category are roads that have an AADT greater than 500 or have greater than 20% commercial traffic in the range of 100 – 500 AADT. The AADT of the road must be known so that the appropriate pavement width for full design can be selected from Table 3.

**Table 3: Full Design Element Widths**

| Element Width   | Design AADT         |                    |                    |                    |
|-----------------|---------------------|--------------------|--------------------|--------------------|
|                 | <500                | 501-1,000          | 1,001-3,000        | 3,001-8,000        |
| Formation       | 8.0 m               | 8.5 m              | 10.0 m             | 10.0 m             |
| Traffic Lanes   | 6.5 m<br>(2 x 3.25) | 7.0 m<br>(2 x 3.5) | 7.0 m<br>(2 x 3.5) | 7.0 m<br>(2 x 3.5) |
| Total Shoulder  | 1.5 m               | 1.5 m              | 3.0 m              | 3.0 m              |
| Sealed Shoulder | 0.75 m              | 0.5 m              | 1.0 m              | 1.5 m              |

Once the road has met the criteria above it is prioritised using the scoring points and weighting method displayed in Table 4.

**Table 4: Scoring and Assessment Method for Category 2 – Full Road Design**

| <b>Criteria</b>                                       | <b>Points</b>  | <b>Weighting</b> |
|---|--|------------------|
| Traffic Volumes                                       | Add 1 point for every vehicle<br>Additional 1 point for every commercial vehicle<br>Additional 25 points if road is a school bus route   | 1                |
| Strategic Significance                                | Examples: tourist location/facility, land development (abutting or servicing), industry or mines, etc.<br>Nil 0 – (no through road < 10ha – no farms)<br>Low 2 – (no through road, some > 10ha – farms, tourist)<br>Medium 4 – (through road with 1-2 tourist facilities)<br>High 6 – (through road with 2+ tourist facilities or major link)  | 8                |
| Costs incurred in maintaining unsealed road           | Low 1 – (close to depots, suitable gravel and water)<br>Medium 2 – (2 of the above)<br>High 5 – (none of the above)  | 5                |
| Geometric design and safety features of unsealed road | Take into account the standard of the current geometric design of the unsealed road. This includes vertical/ horizontal alignment, sight distance, etc. Safety features of the unsealed road include actual/potential accidents.<br>0 – Poor horizontal, vertical alignment and width <5m<br>1 – Poor width <5m (good horizontal and/or vertical alignment)<br>2 – Moderate width 5-6.5m (poor horizontal and/or vertical alignment)<br>4 – Good horizontal alignment and minimum 6.5m width<br>6 – Good horizontal, vertical alignment and minimum 6.5m width | 10               |
| Pavement subject to inundation and road side drainage | 8 - Unlikely and good longitudinal drainage<br>5 - Infrequent inundation and/or poor cross drainage<br>2 - Frequent inundation and/or poor cross and longitudinal drainage   | 10               |

## 5.2 Privately Funded Upgrades

Requests to upgrade an unsealed rural road to a sealed standard that do not meet the requirements of Items 5.1.1 or 5.1.2 may be considered for upgrading if the requestor provides all funds required to upgrade the road to the relevant standard. Council may also require the requestor to contribute to the ongoing maintenance/depreciation of the road, above and beyond funds required to maintain the road prior to it being sealed.

## 6. Changes to this Procedure

This Procedure is to remain in force until otherwise amended/replaced by the Executive Director Infrastructure.

## 7. Repeals/Amendments

This Procedure repeals the former Livingstone Shire Council Procedure titled 'Upgrading of Unsealed Rural Roads to Sealed Standard Procedure v1'.

| Version | Date       | Action   |
|---------|------------|--|
| 1       | 22/04/2014 | Approved   |
| 2       | 01/08/2017 | Amended Procedure Approved                                     |
| 2.1     | 04/12/2018 | Administrative Amendments – reflect organisational restructure |

**DAN TOON**  
**EXECUTIVE DIRECTOR INFRASTRUCTURE**

APPENDIX 1 – PAVEMENT DESIGN CHART

FULL DEPTH GRANULAR - Second Design Standard  
Base CBR 40

