Lower Order Unsealed Roads Upgrade Plan
Design Guidelines

Introduction

The following are the suggested design standards for the upgrading and sealing of lower order unsealed roads.

A holistic approach is taken in the design of these roads and encompasses Austroads Safe System Principles. One of the key principles is that a *Safe System should be accommodating of road user error.* Fundamental to this is the relationship between speed and risk and this is addressed in the fit for purpose design standards that have been adopted.

The design methodology to be used is to generally be in accordance with the *IPWEAQ Lower Order Roads Design Guidelines.*

These standards are based on low traffic volumes generally below 150 vehicles per day and with a minimum design speed of 40 kph.

The design shall be based on a centreline survey and shall provide sufficient vertical and horizontal details to facilitate construction set out. The survey is also to identify property boundaries to ensure the new road will be constructed within the road reserve.

The *IPWEA Lower Order Roads Design Guidelines Treatment Evaluation* scoring system is to be used as evidence that appropriate methodology and engineering judgement has been followed.

1. Pavement Horizontal and Vertical Alignment

The vertical and horizontal alignment if possible should generally follow the existing formation with minor improvements to sight distance for crests and curves where possible.

The width of the formation and seal is to be 4 metres with consideration to be given to widening to 6 metres at crests and curves where possible. Centreline marking should also be installed where the road has been widened to 6 metres.

Provision for a 3 point turning area for garbage vehicles is to be considered in the design.

2. Pavement Design

The in situ CBR is to be determined using a DCP. Tests to be taken each 150m. Where possible, depending on the material the existing gravel is to be retained as a base course for the pavement, gravel added to build up the pavement and sealed.

3. Drainage

Table drains should only be constructed where the natural flow of stormwater cannot be adequately catered for naturally without causing damage to the road or private property.

On steep grades rock rubble is to be used in table drains to prevent erosion of the table drain and possible scouring into the road formation.

Where cross road drainage exists the need for upgrading is to be considered in the design.

4. Vegetation

Existing vegetation should be retained wherever possible. Any tree that has a trunk diameter larger than 100 mm if closer to the edge of the new pavement than 1 metre should be removed.
In the case of a good specimen consideration should be given to a curvilinear alignment or creating a squeeze point to save the tree.

5. Signage

Appropriate signage such as advisory speed 40 or 50 KPH, curve, crest and road narrows are to be installed.