LG TRRIP
Local Government Transport Road Research and Innovation Program

Catalogue of Standard Pavement Profiles for Local Government Roads in Western Australia

Reference: LG TRRIP 08 **Published: May 2025**

This guideline presents a catalogue of pavement profiles, organised into design tables, for different pavement configurations for local government (LG) roads in Western Australia (WA).

Background

This work collated and reviewed the available and relevant information from LGs in WA, with a specific focus on the pavement profiles for flexible pavements.

This guideline consolidates current resources providing pavement profiles for flexible pavements, covering a range of typical traffic volumes and subgrade California Bearing Ratio (CBR) values suitable for LG roads in WA.

The key aim of this work is to assist LGs in WA in selecting appropriate pavement profiles relevant to the desired application.

The guideline presents a catalogue of pavement profiles for three different pavement configurations, including:

- granular basecourse with sprayed seal surfacing
- granular basecourse with thin asphalt surfacing
- asphalt basecourse.

Approach

A user friendly and practical practitioner's guideline has been prepared that includes:

- A catalogue of pavement profiles, in the form of tables
- How to use design tables
- An overview of pavement design principles and design inputs
- Additional relevant supporting information.

Design processes were used to establish minimum pavement thickness requirements for typical LG pavement configurations.

Findings

The key outcome of this project was the development of a practitioner's guideline to assist LGs in WA in selecting appropriate pavement profiles relevant to the desired application.

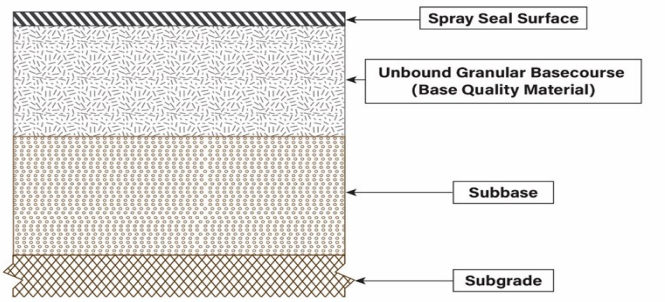
Practitioners will need to select the applicable indicative design traffic volume (ESAs) and subgrade CBR for the relevant application.

Inputting these values into the relevant chart will provide the practitioner with the recommended pavement profile.

Based on the selected subgrade CBR and design traffic volume, the user can then determine the general material thickness requirements and the minimum required depth of pavements for their specific application.

It is worth noting that this guideline primarily focuses on pavement profiles and the determination of pavement layer thicknesses. It assumes that users will select appropriate materials with suitable properties based on relevant specification requirements, as well as local knowledge and experience. References to the material specification documents are also provided in the guideline.

Example pavement structure—Granular Basecourse with sprayed seal



References

Austroads 2017, Guide to pavement technology part 2: pavement structural design, edn 4.3, AGPT02-17, Austroads, Sydney, NSW.

Institute of Public Works Engineering Australasia (IPWEA) 2006, Guide to pavement profiles in residential streets, IPWEA, Perth, WA.

Institute of Public Works Engineering Australasia Western Australia Incorporated (IPWEA WA) 2017, Local government guidelines for subdivisional development, edn 2.3, IPWEA WA, Perth, WA.

Institute of Public Works Engineering Australasia Western Australia Incorporated (IPWEA WA) and Western Australia Local Government Association (WALGA) 2020, Local government guidelines for restoration and reinstatement in Western Australia, IPWEA WA and WALGA, Perth, WA.

How does this research change the way we think?

The practitioner's guideline developed in this work assists LGs in WA in selecting appropriate pavement profiles relevant to the desired application.

The guideline is expected to deliver several key benefits, including minimising the risk of inappropriate pavement profile selections and associated failures. It also aims to save time and costs across the design, construction, and review processes by streamlining suitable pavement option assessments and supporting more efficient verification of external designs. Additionally, it may assist in investigating road failures and planning effective rehabilitation treatments.

Further anticipated advantages include potential cost and time savings for consulting agencies/ contractors to prepare designs during road construction/maintenance projects, potential reduction in road closures due to reduced pavement failure and potential environmental benefits from reduced road maintenance needs following application of the guideline.