

Midlands Highway Safety Improvements Programme

Highway Cross Section Selection and Justification

Perth to Breadalbane

Objective: To provide guidance on suitable median widths for the Midlands Highway (Perth to Breadalbane) upgrade.

Background: It has been queried what median width should be provided on the major state highways within 10-15km of city centres where higher traffic volumes are encountered.

Review:

Table 1 provides a summary of existing provisions.

Prior to the Departments current Road Safety Strategy wide medians were provided:

- In rural areas to separate carriageways and traffic e.g Bass Highway (Lton to Deloraine) to provide for safe high speed operation.
- In peri urban areas to provide safety for higher traffic volumes and demand to provide for turning traffic.

The Departments Road Safety Strategy now involves retrofitting medians and/or using existing medians to fit barrier fences to prevent head on crashes. Providing a physical barrier can be more cost effective than providing a wide median to separate carriageways.

However with increased traffic volumes there is also increased risk of barrier fence hits. In recognition of this use of wider medians is supported to provide drivers more width and more time to steer away from the barrier fence. The extra width should reduce hit fence property damage crashes and reduce barrier fence maintenance costs.

The Midlands Highway has traffic volume of typically 5,000 vpd between Kempton and Perth so the Departments view is that 2.1m wide median with wire rope safety barrier is an acceptable risk and may be considered for volumes of up to 10,000 vpd on straight sections of road. See Appendix 2 and the Swedish case.

Where the road alignment has horizontal curves with design speeds 20km below the speed limit and /or traffic volumes greater than 7,000vpd medians wider than 2.1m may be required.

In the case of the Perth to Breadalbane alignment there are some curves and the design traffic volume is in the order of 20,000 vpd (15,000 vpd by 2030) so it is recommended that the median width should be 3m as a minimum for this project.

Appendices

1. Standard Drawing for Midlands Highway Upgrades – Typical Cross Sections for “2+1” Lane Configuration
2. Traffic Engineering Branch internal report of the September 2014 - Midlands Highway Safety Improvements Programme 2014 -2024 Highway Cross Section Selection and Justification.

Version

1st Draft - prepared R Burk 9th February 2015