

## Intersections:

### Guide to Traffic Management Part 6

### Guide to Road Design Part 4 and Part 4A

### November 2017 Webinar – Questions and Answers

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This document addresses questions regarding Intersections raised during a webinar broadcast in November 2017. The [recording of the webinar](#) can be accessed on the Austroads website.

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#### Assessment for warrants for turn treatments. Is this mandatory? If the Guide says it is preferred, is it conveniently avoided by consultants on the basis that it is desirable but not mandatory?

The guidelines are not mandatory. A road agency may indicate their requirements which then require the guidelines to be followed. The requirements from each road agency should be obtained.

#### Was there any thought about including a section on light rail crossings?

Light rail, or trams are mentioned in [Guide to Traffic Management \(AGTM\) Part 6](#), Section 2.4.5 and [Guide to Road Design \(AGRD\) Part 4](#), Section 6.2.

Diagrams of intersections with light rail could be included in a future update of AGTM Part 6 and AGRD Part 4.

#### Question on use of High Friction Aggregate on approaches to a signalised intersection? Has this been discussed or being incorporated to design code?

Use of high friction surfaces is only very briefly referred to in AGTM Part 6 and [AGRD Part 4A](#). The application needs to be undertaken in conjunction with the maintenance program.

High friction surfaces are discussed in [Guide to Pavement Technology Part 3: Pavement Surfacing](#)s.

#### Slide 27 - There is a shaded section on the graph marked 'A' (top left corner). What is this section and what does it mean?

If more than 50% of the traffic approaching on a major road leg turns left or right, consideration needs to be given to possible realignment of the intersection to suit the major traffic movement. The shaded area (A) denotes the traffic flow combinations where this occurs. (Source: Queensland Department of Transport [Supplement to Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections](#)).

#### Slide 28 - Is there an agreed speed for cyclist (or a way to calculate it) for determining crossing times? Pedestrians use 1.2m/s. What do we use for cyclist?

For designing a signal phasing time for cyclists, this information would need to be obtained from the road agency.

Note: the average pedestrian speed indicated is 1.2 m/s but this may vary (i.e. less than 1.2 m/s) for older pedestrians.

The section on signalised intersection includes some provisions to improve cycle safety. Were Advanced Stop Lines as are now routinely used in London, considered as a treatment option?

Cyclists considerations are outlined in AGTM Part 6, Table 4.3 and some figures of bicycle lanes on approaches and at the holding lanes shown in AGRD Part 4, Appendix B 6.1.

Slide 29 - Actively reducing sight lines to reduce approach speed - I was under the impression this wasn't allowed and recommended in Australia. Is this now allowed across all road safety treatments / have this been considered by road safety engineers?

Sight distances are suggested to meet the guidelines. Reducing excessive sight distance is discussed, but only reducing excessive to meet the distances determined in accordance with the guidelines. Note that Sight Distance Criterion 3 (in Guide to Road Design 4B) relates to provision of a 'sight triangle to allow recognition of potential conflict'. The Criterion (which it should be noted is not mandatory) does recognise that some concerns exist that a 'larger sight triangle may lead to higher entry speeds'.

Some research has been undertaken in New Zealand on reducing sight distance requirements, but it has not been incorporated into general practice.

Slide 31 for Lisa - In case of signalised multi-lane r/a's, does gap and queue dissipation lead to two-wheeler accidents?

Issues relating to gap and queue dissipation would require further information and analysis.

A general discussion on safety issues for cyclists at multilane roundabouts, as well as considerations relating to signalised roundabouts is included in [Improving the Performance of Safe System Infrastructure: Final Report](#) (Austroads 2015, AP-R498-15)

What has happened to the Rural BAR/BAL treatments?

Rural right turn treatments (BAR / CHR) have not been included in Section 7 of Guide to Road Design Part 4A? They have been shifted to Appendix A in Guide to Road Design Part 4. Was this an error? The geometric details of this section should sit within Guide to Road Design Part 4B.

There is no longer a Rural BAR treatment in Guide to Road Design Part 4A. Is it considered that the Urban BAR treatment be adopted?

Is there a reason why the rural right turn design layouts were moved from Guide to Road Design Part 4A to Part 4?

Guidance within Austroads Guides is not wanting to be replicated into different Parts, due to timing of updates of the Parts and Road Design Task Force determined to transfer information as outlined in the webinar from Part 4 to Part 4A. Some information was retained in Part 4A.

Rural BAR/BAL treatments AGRD Part 4, Appendix A5 outlines rural BAR and AGRD Part 4A contains information on BAL treatments.

In the earlier version of Guide to Road Design Part 4, there is a table for the selection of design and checking vehicles and recommended turning radii in New Zealand (Table 5.2). Has this information been moved elsewhere in the Guidelines? If not, which Guideline do we use in New Zealand?

For design vehicles AGRD Part 4, Section 5.6.1 indicates:

[Austroads Design Vehicle and Turning Path Templates](#) (Austroads 2013b) or [New Zealand On-road Tracking Curves for Heavy Motor Vehicles](#) (Land Transport New Zealand 2007)

A large amount of the emphasis includes providing for cyclists. However sight distance diagrams all relate to the middle of the lane rather than the left edge of the lane where cyclists typically ride. Has there been consideration of changing these diagrams in order to accommodate sightlines to approaching cyclists?

Sight distances to a vehicle approaching at the design speed would typically be much longer than to a cyclist, usually travelling much slower than the design speed of the road. The sight distance to a cyclist would be available within the main criteria, but a good point has been raised and the sight distance available to a cyclist travelling near the kerb or road edge should be checked as part of the design process.

The warrant figures for BA/AU/CH treatments remain small and somewhat difficult to read due to scale. Are these available elsewhere? (The original Arndt 2006 document is easier to read, but there's now additional curves)

The source is Queensland Department of Transport and Main Roads [Road Planning and Design Manual: Volume 3: Guide to Road Design](#).

Why did design figures for turn treatments get moved from Guide to Road Design Part 4A to an Appendix in Part 6?

When the design info moved from 4A to 6 why was this put in an appendix without a table of contents, so we can't find anything?

Information from AGRD Part 4A was transferred to AGRD Part 4, Appendices A, B and C. Whilst the hard copy only contains the Appendix headings, the electronic version contains a more detailed heading structure.

AGTM Part 6, Section 2 contains the same or similar information that was transferred from AGRD Part 4A to AGRD Part 4.

Slide 43 - Pedestrians like the countdown timers - are they safe / do they make it less safe given the safe system framework?

This is discussed in Section 8.2.3 of AGTM 6. Trials in Australia and New Zealand have found mixed results in relation to pedestrian safety and compliance. Pedestrian Countdown Timers were associated with increased pedestrian amenity due to reduced delay at the crossings.

In light of the above, their performance from a Safe System perspective is not clear.

In relation to safety and design with the intersection, I have recently seen push button included in TSC plan on median where a refuge is not provided as part of the design. Is this a new policy or requirement?

Traffic Signal control plan – need to refer to road agency practices for more information.

## Slide 44 - What does it mean by vertical deflections on the approaches?

Vertical deflections are treatments such as raised platforms.

Failure of electronics is also an emergency - what happens there? Vehicle capability will vary with each failure type.

This query appears to relate to vehicle electronics. Vehicle electronics is a rapidly emerging and evolving field particularly given developments in the area of automated vehicles. This is something all of us working within the road industry need to keep abreast of and respond to when information is available.

Slide 71 - Figure 3.2 in Guide to Road Design Part 4A shows distance to kerb, not conflict point. Please explain this.

The text information leading to the figure discuss the distances to a conflict point being 7m (5 m min). In an attempt to indicate that there had not been any substantive change the figure with the 5 m and 3 m was retained (AGTM Part 6 and AS 1742.2 indicates 5 m and 3 m from driver to kerb).

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