



Supplement to Austroads Guide to Road Design Part 4A

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Unsignalised and Signalised Intersections (2017) Version 2.1

Austroads has released the Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections and all road agencies across Australasia have agreed to adopt the Austroads guides to provide a level of consistency and harmonisation across all jurisdictions. This agreement means that the new Austroads guides and the Australian Standards, which are referenced in them, will become the primary technical references for use within Roads and Maritime Services.

This supplement is issued to clarify, add to, or modify the Austroads Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections.

Roads and Maritime accepts the principles in the Austroads Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections with variations documented in this supplement under the following categories:

- Roads and Maritime enhanced practice: Roads and Maritime practice that enhances the Austroads Guides
- Roads and Maritime complementary material: Roads and Maritime reference material that complements the Austroads Guides. These documents include Roads and Maritime Manuals, Technical Directions and/or other reference material and are to be read in conjunction with the Austroads Guides
- Roads and Maritime departures: Roads and Maritime practice that departs from the Austroads Guides.

Document Information

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Document History

Version	Date	Reason for amendment	Page No.	Editor
2.1	31/08/2017	Revised Austroads edition	All	Road Policy, Specifications and Technology
2.0	11/10/2016	Major review.	All	Road Policy, Specifications and Technology
1.1	19/08/2011	Adjustment of Table 3.1 and Table 3.2.	All	Technology Standards (Road)
1.0	17/03/2011	First issue.	All	Technology Standards (Road)

General

In the context of road design, a greenfield site is a location on which a new road is being built where there are no constraints that prevent the use of the Normal Design Domain (NDD) design values.

A brownfield site is a location where development or constraints influence the design to the extent that use of values outside the NDD may be necessary for one or more elements of the design.

The Austroads Guide to Road Design provides Normal Design Domain criteria suitable for new roads (greenfield sites). In most cases, the same criteria that is used for greenfield sites should also be used for modifications and upgrades to existing roads (brownfield sites).

The use of design parameters outside of the Normal Design Domain requires approval from an authorised person in accordance with the Roads and Maritime Services Delegations Manual.

Roads and Maritime: complementary material

The following documents provide additional detail of Roads and Maritime best practice. It is necessary to comply with complimentary material:

- NSW Bicycle Guidelines
- Roads and Maritime Supplements to Austroads Guides
- Roads and Maritime Australian Standards Traffic Supplements
- Roads and Maritime Traffic Signal Design Guide
- Roads and Maritime Delineation Manual
- Roads and Maritime Standard Drawings
- Roads and Maritime Technical Directions.

The documents are published and can be found on the Roads and Maritime website.

Roads and Maritime: enhanced practice and departures

4 Types of intersection and their selection

4.1 General

In NSW the use of AUR treatments is not permitted.

5.2 Deceleration lanes

5.2.2 Determination of deceleration turning lane length

Roads and Maritime uses the desirable maximum values of side friction for cars as the normal design parameter for side friction.

8.3 Urban left-turn treatments

8.3.2 Left-turn treatments for large vehicles

Roads and Maritime's preference is to provide additional space for large vehicles as shown in Austroads Guide figures 6.8 and 6.10, rather than as shown in figures 8.7 and 8.8.

Appendix A Extended Design Domain (EDD) for intersections

A.8 EDD for median widths

In addition to the values shown in Table A18: EDD median widths at intersections, Roads and Maritime accepts the following absolute minimum:

Table A18: EDD median widths at intersections

Median function	Absolute minimum width (m)
Adjacent to a right turn lane where there are no posts, signs or pedestrians	0.5

A.10 EDD for right turn treatments on existing urban roads ("S" lanes)

An "S" lane treatment at an intersection converts three through lanes into two through lanes with a right turn bay. This is shown in Figure A.9.

"S" lanes can be installed on an existing three lane carriageway where it is not possible to add a right turn bay.

As with any proposed intersection treatment, a "S" lane should be evaluated by examining capacity, safety, economic and environmental issues for comparison of existing conditions with any proposal.

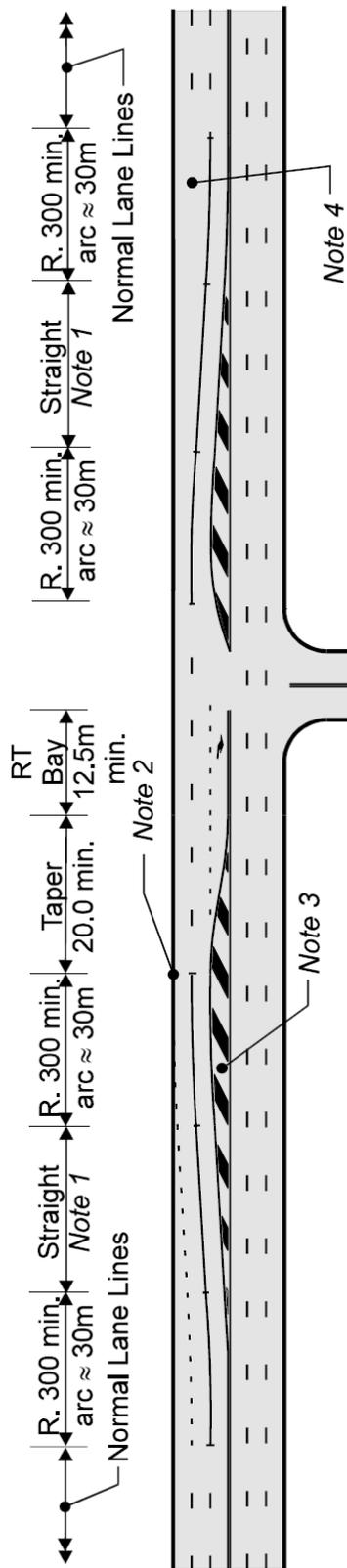
Before and after studies on major arterial roads in Sydney (Parramatta Road, Victoria Road and the Pacific Highway) show that "S" lanes may provide the following advantages and disadvantages:

Advantages

- Lane changing by through vehicles reduced incidence of rear-end collisions involving right turning vehicles reduced
- Free flowing conditions provided for vehicles in the offside through lane (adjacent to centreline or median)
- May reduce travel times.

Disadvantages

- Reduces kerb side parking opportunities near intersections with consequent problems for delivery vehicles and customer parking (loss of trade objections)
- Moves through traffic adjacent to kerb at intersections on a permanent basis with possible noise, vibration, and pedestrian (young, aged, disabled) problems
- Creates merge conflict for kerb side lane where three through lanes reduce to two through lanes
- Problems for cyclists where three through lanes reduce to two
- May require relocation of bus stops, taxi ranks, mail collection points
- Rigid kerb side objects (poles, trees, signposts, etc) may have to be moved where three through lanes merge into two.



Notes:

- 1 Length of straight equal to 1-2 seconds of travel at through speed for reversal steering. 60km/h – 17 to 33m; 80km/h – 22 to 44m.
- 2 Provision for cyclists is to be incorporated into the design; particularly at this “squeeze point”.
- 3 Refer to Figure A.10 for other methods of treatment of the medians.
- 4 Continuity lines to be used where nearside lane is used for parking (including public transport stops) or dedicated left turn lane.

Figure A.9 - "S" lane treatment

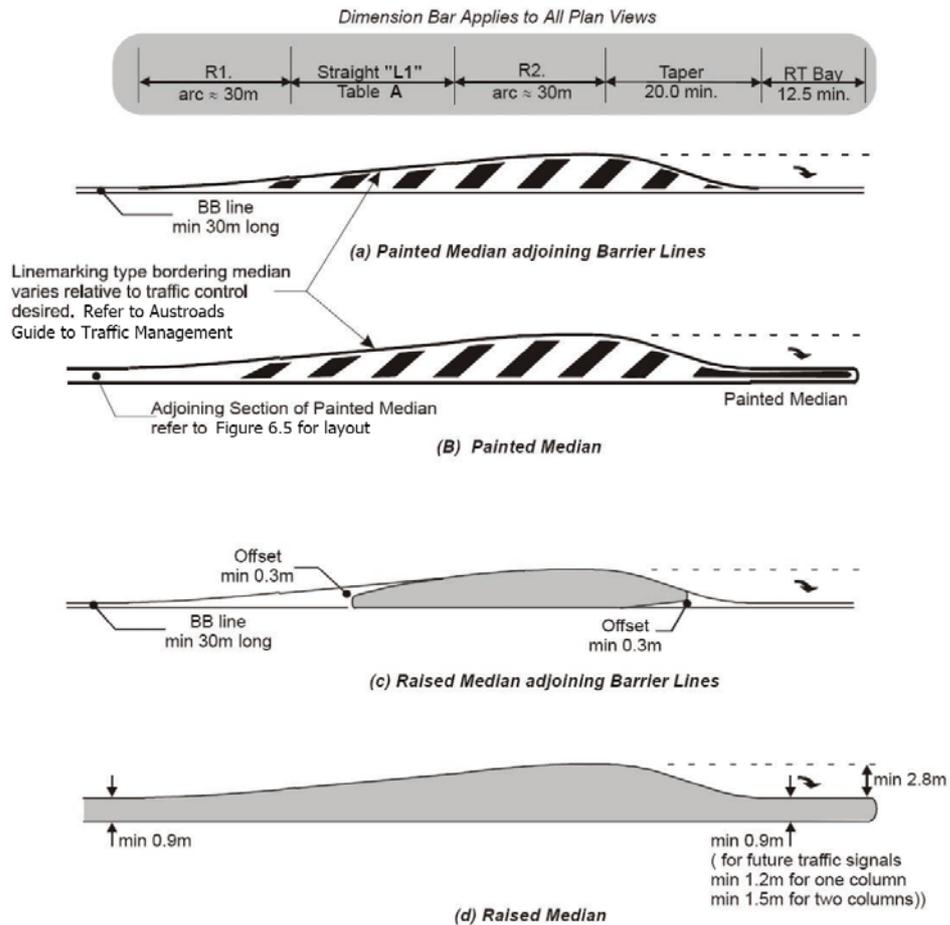


Table A

Speed (km/h)	L1 (m)
60	25
70	30
80	35
100	40

Notes:

1. R1 and R2 – radius to suit design speed and crossfall
2. Minimum length of right turn bay 12.5 metres will suit single unit vehicles other than buses
3. It is desirable that auxiliary lanes be the same width as the adjacent lanes. On curved alignments the auxiliary lane width should be adjusted to suit circumstances.

Allows for approximately 1.5 seconds of travel for through vehicles for reverse steering.

Figure A.10 : Options for minimum length right turn bays