

Technical direction

For traffic and transport practitioners

POLICY – GUIDELINES – ADVICE



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DESIGN VEHICLES and TURNING PATH TEMPLATES

INTRODUCTION

All vehicles using the road network must be able to safely negotiate intersections without damaging other vehicles, buildings, infrastructure, roadside furniture and to do so without obstructing traffic. As the road network consists of a hierarchy of roads with different functions it is necessary to accommodate a range of vehicles and to provide appropriate and safe access. Accordingly, turning path templates for different vehicle sizes assist designers to determine if an intersection provides all required manoeuvres in a safe and suitable manner.

BACKGROUND

In 1985, the National Association of Australian State Road Authorities (NAASRA) published the first edition of design vehicles and turning path templates. The first revision was published by Austroads in 1995, to reflect changes in vehicle dimensions and introduced a number of “restricted access vehicles”.

Austroads have recently released a new document titled ‘Austroads Design Vehicles and Turning Path Templates’. This document reflects changes in vehicle dimensions over the last 10 years and provides a user guide to assist in selecting (and checking) both the appropriate design vehicle and the turning radii for various on-road turning manoeuvres.

For: Director, Road Network Infrastructure; Director, Motorways; Director, Road Safety & Road User Management; Director, Operations & Services; Traffic Management and Road Design personnel.

PRACTICE/ GENERAL

The Austroads design vehicles have been produced to provide consistency when choosing an appropriate design vehicle for intersection design throughout Australia. The design vehicles included in the document provide guidance to cover most normal intersection designs. Individual intersections should be designed and checked according to the vehicles expected to be negotiating these intersections.

Notable changes that have occurred since the first revision in 1995 are:

- A small increase in size of the design car. This design car is now the same as used in Australian Standard AS 2890.1 – 2004, the B99 vehicle.
- The minimum radius of the design car has been reduced to 6.3m (previously 8.0m)
- The service vehicle (8.8m), the single unit truck/bus (12.5m) and the single articulated vehicle (19m) remain the same as the previous 1995 revision. However, they now have a template for a 9m radius turn (previous minimum radius was 12.5m).
- The B-Double (25m) is now supplemented with a B-Double (26m) to reflect different types of prime movers.
- The Type 1 Road Train (36m Double) is now an A-Double (36.2m).
- The Type 2 Road Train (53m Triple) is now an A-Triple (53.4m).
- A B-Triple (36.5) is an added vehicle type.
- The terms “absolute minimum radius” and “desirable minimum radius” have been omitted in favour of suggested turning speeds and where a mandatory stop is required. The commentary does recommend minimum radii for some vehicles.

The commentary and turning path templates are provided in CD format only, allowing access to electronic files containing the vehicle dimensions and turning paths. It is expected that designers will make up their own template transparencies for overlay when required. Providing design information in electronic format only is in line with the current revision of the Guide to Traffic Engineering Practice Series.

Whilst the templates provided can be imported into most drawing packages such as AutoCad and MicroStation a copy of Volo View Express has been provided, without warranty, for viewing and printing the templates.

It should be noted that the templates represent forward movement only and are intended to be used as a guide in designing intersections or for vehicle access to and from on-road situations. For the design of off-road situations such as parking lots, loading docks or similar, Australian Standard AS 2890.1 or AS 2890.2 should be used.

Information is also provided related to ground clearances below the vehicles and height clearances above the vehicles.

The document “Austroads Design Vehicles and Turning Path Templates” may be purchased from the RTA Library or Austroads.

ACTION

The 2006 publication “Austroads Design Vehicles and Turning Path Templates”, with accompanying CD, is now to be used as the basis for selecting and checking vehicle turning paths in all RTA, Council and Consultant prepared intersection designs.

UPDATES

To ensure that this *Technical Direction* remains current and relevant, minor updates may be made from time to time. This may be done through the RTA website using the Traffic & Transport Policies & Guidelines Register which can be found at :

www.rta.nsw.gov.au/trafficinformation/guidelines/documentregister.

The Register should always be checked prior to using this *Technical Direction*

ADDITIONAL COPIES

Additional copies of this *Technical Direction* can also be downloaded from the Traffic & Transport Policies & Guidelines Register on the RTA website.

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