



Supplement to Australian Standard
AS 1742.9:2000

Manual of uniform traffic control devices
Part 9: Bicycle facilities

OCTOBER 2015

vicroads.vic.gov.au

Table of Contents

1.	Introduction	3
1.1	General	3
1.2	How to Use this Supplement	3
2.	Classification of Supplement Information	4
3.	Details of Supplement Information	5
Clause 2.1	General.....	5
Clause 2.2	– Signs	5
Clause 2.2 (a)	– SIGNS, No bicycles (R6-10-3)	7
Clause 2.2 (b)	– SIGNS, Bicycle lane (R7-1-4).....	7
Clause 2.2 (c)	– SIGNS, Bicycle lane supplementary plates	7
Clause 2.2(d)	– Signs, Bicycles excepted (R9-3)	7
Clause 2.2(g)	– Signs, Watch for Bicycles (G9-57)	7
Clause 2.3	Pavement Markings	8
Clause 2.4	– Bicycle Provisions Mid-Block.....	9
Clause 2.4.4(b)	– Wide Kerbside Lane	10
Clause 3.2 (d)	– Bicycle Path and Footpath Provision - Signs, Bicycle Only	15
Clause 3.2 (e)	– Bicycle Path and Footpath Provision - Signs, Shared Path.....	15
Clause 3.2 (f)	– Bicycle Path and Footpath Provision - Signs, Separated Footpath	15
Clause 3.4	– Footpaths and Shared Paths	15
Clause 3.7	– Shared Paths End Treatment	15
Clause 4.1	– Bicycle Provision on Freeways, General	21
Clause 4.2	– Bicycle Provision on Freeways, Signs	22
Clause 4.2(C)	– Signs, Bicycles Crossing Ramp (W6-7, W8-28)	22
Clause 5.4	– Direction Signs	23
Attachment A	- Signing of Rural Training Circuits.....	24
Attachment B	- Providing for Cyclist at Bus Stops	26

1. Introduction

1.1 General

All road agencies across Australia are working towards greater consistency between States/Territories in how road networks are managed. In order to achieve this, the Austroads Guide to Traffic Management and Australian Standards relating to traffic management have been adopted to assist in providing that level of consistency and harmonisation across all jurisdictions. This agreement means that these Austroads Guides and the Australian Standards are the primary technical references.

Australian Standards AS 1742.9:2000 - *Manual of uniform traffic control devices – Part 9: Bicycle Facilities* is a nationally agreed standards document outlining the use of traffic control devices on the road network and has been adopted by all jurisdictions, including VicRoads.

All jurisdictions will be developing their own supplement to clearly identify where its practices currently differ and to provide additional guidance to that contained within AS 1742.9:2000. This document is the VicRoads supplement and shall be read in conjunction with AS 1742.9:2000.

1.2 How to Use this Supplement

There are two key parts to this document:

- **Classification of Supplement Information:** this table classifies supplement information as a Departure, Additional Information or both. This information assists with identifying its hierarchy in relation to the Australian Standard.
- **Details of Supplement Information:** this section provides the details of the supplement information.
 - **Departures:** where VicRoads practices differ from the guidance in the Australian Standard. Where this occurs, these differences or 'Departures' will be highlighted in a box. The information inside the box **takes precedence** over the Australian Standard clause. The Australian Standard clause is not applicable in these instances.
 - **Additional Information:** all information not identified as a departure provides further guidance to the Australian Standard and is read and applied **in conjunction** with the Australian Standard clause.

Where a clause does not appear in the body of this supplement, the Australian Standard requirements are followed.

2. Classification of Supplement Information

The classification of each clause as a Departure, Additional Information or both is shown in the table below.

Clause	Classification
2.2	Additional Information
2.2 (a)	Additional Information
2.2 (b)	Additional Information
2.2 (c)	Additional Information
2.2(d)	Additional Information
2.2(g)	Additional Information
2.4	Additional Information
2.4.4(b)	Additional Information
3.2 (d)	Additional Information
3.2 (e)	Additional Information
3.2 (f)	Additional Information
3.4	Additional Information
3.7	Additional Information
4.1	Additional Information
4.2	Departure
4.2(c)	Additional Information
5.4	Additional Information
Attachment A	Additional Information
Attachment B	Additional Information

Australian Standard requirements are followed for clauses not shown in this table.

3. Details of Supplement Information

Clause 2.1 General

VicRoads provides guidance with regards to the provision of bicycle facilities in growth areas as per the document "Guidance & Principles for Planning Road Networks in Growth Areas". Currently this is a working document and is expected to be distributed for use soon. Further information could be obtained from Manager Operations Policy, VicRoads Policy and Programs.

VicRoads has developed '**Signing of Rural Training Circuit**' that may be used to sign rural cycling circuits, but only following an official approach from a cycling club that is affiliated with Victoria Cycling Incorporated or Cycle Sport Victoria. The combination of signs that should be used depends on whether the circuit is used for training, for training and racing, or for racing only. Details on signing of Rural Training Circuits can be found in Attachment A.

The '**Provision for Cyclists at Bus Stops**' will be influenced by the types of the bicycle facility provided upstream and downstream of the bus stop. Details on providing for cyclists at bus stops can be found in Attachment B.

Clause 2.2 – Signs

In this supplement the Road Safety Road Rules 2009 are referred to as 'the Road Rules'. References to a 'Rule' or 'Rules' in this Supplement are references to the relevant Rule(s) in the Road Safety Road Rules 2009.

The VicRoads Standard Drawings include the following Table 1 below an additional regulatory, guide and warning signs applicable to cyclists.

Table 1: Additional regulatory signs

Sign	Sign number	Size, mm	Reference in this supplement
GIVE WAY TO Cyclists	R2-V111	800 x 730	Clause 2.2
Cyclists GIVE WAY TO TRAMS	R2-V112	450 x 450	Clause 2.2
Cyclists USE SIGNALISED CROSSING	R3-V113	450 x 540	Clause 2.2
CYCLISTS DISMOUNT BEWARE OF GAPS IN BRIDGE DECK	G9-V126	500 x 700	Clause 2.2
Bicycle direction sign	G5-V101	Various	Clause 2.2
NARROW SHOULDER ON BRIDGE	W8-V112	750 x 450	Clause 4.2

Rules 74 and 75 state that vehicles entering (or leaving) a road from land abutting a road, except when controlled by traffic signals, must give way to vehicles and pedestrians on the road or road related area. As a shared path is a road related area, when crossing a shared path, the entering and leaving vehicles are required to give way to bicycles and pedestrians. When entrances to commercial establishments cross shared paths or bicycle paths, problems can arise due to entering or leaving vehicles failing to give way. Sign R2-V111 GIVE WAY TO Cyclists may be installed facing the entering or leaving vehicles to remind drivers of their legal obligation.



R2-V111

Sign R2-V112 Cyclists GIVE WAY TO TRAMS should be used where a shared path or bicycle path crosses tram tracks and it is necessary to remind cyclists that they must give way to trams.



R2-V112

Sign R2-V113 Cyclists USE SIGNALISED CROSSING is used where a signalised crossing provides a safe crossing of a busy road, and the location of the path is staggered from the crossing. The sign is provided to instruct cyclists to use a nearby signalised crossing or pedestrian crossing. An arrow may be included on the sign face to direct cyclists.

A supplementary plate having a directional arrow should accompany the R2-V113 sign if the crossing is more than 20 metres from the path.



R2-V113

Sign G9-V126 CYCLISTS DISMOUNT - BEWARE OF GAPS IN BRIDGE DECK should be used to warn cyclists of the existence of hazardous gaps between planks in a bridge deck. The first preference should be to make the deck safe for all road users. Therefore, this sign should only be used where it is not economically or practically feasible to solve the problem of gaps in the deck.

The G9-V126 signs should be placed a distance in advance of the abutment of the bridge sufficient for cyclists to read and comprehend the sign, and then bring their bicycle to a stop in a controlled manner prior to reaching the bridge. For example, a cyclist approaching at a speed of 50 km/h on a down gradient of 10% would require the sign to be placed 120 m from the bridge abutment. This distance is considered to be appropriate for most situations.

Where higher approach speeds are anticipated, or where gradients exceed 10%, VicRoads Manager – Network Standards should be consulted.



G9-V126

Clause 2.2 (a) – SIGNS, No bicycles (R6-10-3)

The Bicycle Prohibited sign (R6-10-3) may also be used to prohibit the use of footpaths by bicycle riders under the age of 12 years. While these children should generally be encouraged to ride on the footpath there may be situations where there are safety concerns (such as a section of path is frequently used by elderly pedestrians or there are major vehicle movements into a property with restricted sight distance). In these situations alternative safe routes for the young cyclist should be available. Where using the Bicycle Prohibited sign for this purpose, care is required in placing the sign so that it cannot be viewed from (and thus legally applied to) an adjacent section of road.

As an alternative to using the End sign in conjunction with the R6-10-3 sign to indicate the end of a section of road or footpath over which the restriction has applied a supplementary NEXT xxx m (R9-6) may be used on the advance sign negating the need for the sign to terminate the bicycle prohibition.

Clause 2.2 (b) – SIGNS, Bicycle lane (R7-1-4)

The bicycle lane sign is not required on the departure side of minor intersections where the bicycle lane lines are continued through the intersection, using continuity lines. Bicycle lanes are generally located to the left of any other traffic lane in the same direction.

Clause 2.2 (c) – SIGNS, Bicycle lane supplementary plates

Unless prohibited by No Stopping, No Parking or parking restriction signs, or a No Stopping pavement line, parking is permitted in a Bicycle Lane. Supplementary signs shall not be installed to advise that parking is generally permitted.

Clause 2.2(d) – Signs, Bicycles excepted (R9-3)

Road Rule 317 allows the road authority to make inscriptions on signs limiting the operation of the sign in relation to classes of vehicles. A common example of this is a 'Do Not Enter' sign on a street with 'Bicycles Excepted' added to allow access to the street via a bicycle lane or path.

Signs in the Road Rules which have an inscription limiting their operation in respect to classes of persons or classes of vehicles are Major Traffic Control Devices that require appropriate authorisation to install, modify or remove.

Clause 2.2(g) – Signs, Watch for Bicycles (G9-57)

Sign G9-57 WATCH FOR Bicycles is used to provide an instruction to motorists at locations where it is critical that they look out for cyclists. It may be used at the following additional locations where cyclists are experiencing operational or safety problems:

- at '5 lane' treatments where cyclists are squeezed for space; or
- at the start of diverge tapers and at the end of merge tapers.

As a general principle, other signs should not be placed on the same pole as important regulatory signs. However, at sites where there is a history of accidents involving cyclists, or a hazard is known to exist, the G9-57 sign may be placed below Stop, Give Way and Roundabout regulatory signs. Typical locations may include the following:

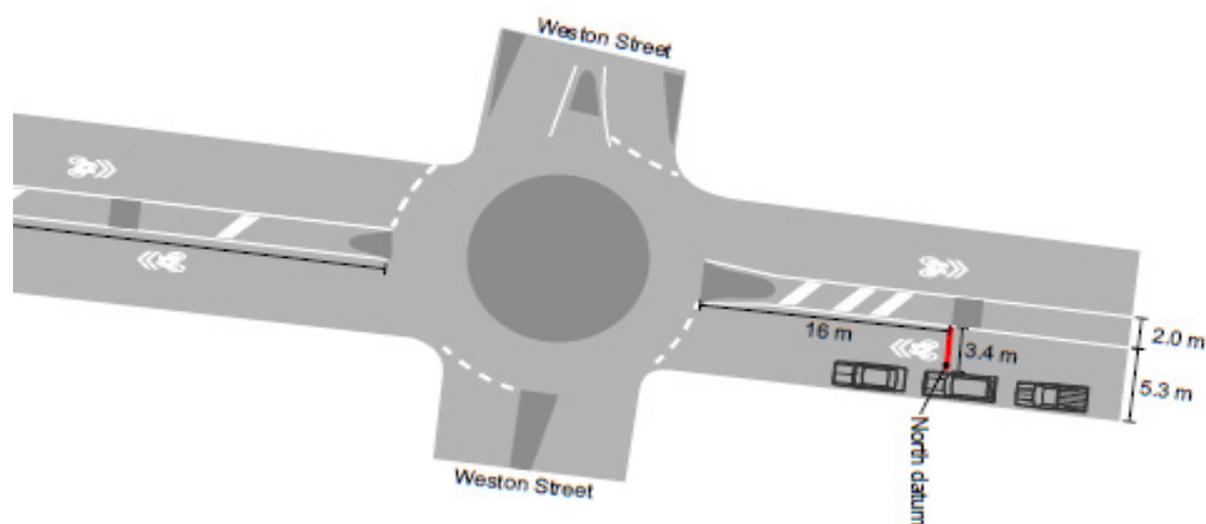
- on the approaches to multi-lane roundabouts or large single lane roundabouts; or
- on left turn slip lanes where left turning traffic is provided with a merge taper or auxiliary lane.

Clause 2.3 Pavement Markings

Guidance for the use of Sharrows

General

"**Sharrows**" or Share Lane Markings are pavement markings used to indicate a shared environment for bicycles and motor vehicles. The 'sharrows' highlight cycling routes and recommend the lateral positioning of bike rider, while alerting all road users to the presence of bicycles on the road. The 'sharrows' are not a dedicated cycling facility, but a pavement marking which supports a complete bike network.



Use of 'Sharrows' on arterial roads

On roads managed by VicRoads, 'sharrows' can be considered. Practitioners should note that providing bicycle facilities that provide as much separation between cyclists and vehicular traffic is proven to provide the safest facilities. However, 'sharrows' have the potential for supporting these facilities or assisting where there may be gaps in these facilities. Use of 'sharrows' may provide benefit for the following situations:

1. Alerts motorists to the potential presence of bike riders and likely lateral position of cyclists on the roadway;
2. Assist cyclists with lateral positioning in a shared lane with on-street parking in order to reduce the chance of a cyclist impacting the open door of a parked vehicle;
3. Assist cyclists with lateral positioning in lanes/locations that are too narrow for a vehicle and a bicycle to travel side by side;
4. Guide cyclists where dedicated facilities have ended and there is a need to guide cyclists on lateral positioning in the road way.

Use of Sharrows on low speed roads

Councils have effectively used 'sharrows' on low speed local roads for many years. On low speed roads 'sharrows' have more potential uses. The photos below show some of the effective ways 'sharrows' can be used".



The above photos shows 'sharrows' being used to compliment traffic management treatment that support low speed environments.



The above photo shows 'sharrows' being used to transition from a dedicated on-road bicycle facility into a low speed roundabout.

The above photo shows 'sharrows' being used in a narrow road where it may be preferable to encourage cyclist to 'claim the lane'.

For use of 'sharrows' on local roads, practitioners should seek advice from the relevant municipal council to understand local requirements.

Clause 2.4 – Bicycle Provisions Mid-Block

It is desirable that adequate road width is allowed at a road hump so that the cyclists are not 'squeezed'.

Humps should not extend across bicycle lanes and where space is available a bypass may be provided to enable bicyclists to maintain speed through the device.

Road humps such as the plateau (flat top) or Watts (rounded) profile, well lit and marked, should not present a safety problem to cyclists if the humps are not located at the bottom of steep grades. Sinusoidal profile road humps provide a smoother ride for cyclists and may be used on routes with high bicycle usage.

Clause 2.4.4(b) – Wide Kerbside Lane

General

A wide kerbside lane is a normal marked lane on the left side of the carriageway (of either a two-lane two-way road or multi-lane road) of sufficient width to allow cyclists to travel beside the main traffic stream and to permit motorists to overtake cyclists without having to effectively change lanes (Figure 1). This sharing of lanes is generally appropriate in speed zones of 70 km/h or less.



Figure 1: Wide kerbside lanes along Barkers Road in Kew, Melbourne

Typically, wide kerbside lanes are 3.7 to 5.0 metres wide and are located adjacent to the left hand kerb of the road. Wide kerbside lanes should only be used on roads where the demand for parking is low.

Section 4.3.3: Wide Kerbside lanes and Table 4.4 of the Cycling Aspects of Austroads Guide (2014) provide details of the acceptable widths for wide kerbside lanes in 60 km/h and 80 km/h speed zones.

As a bicycle facility, wide kerbside lanes do not provide cyclists with a separated and dedicated space in which to ride. As a result, they should only be used when it is not possible to provide an on-road bicycle lane or an off-road bicycle path.

Road Rule 141 allows a cyclist to overtake a motor vehicle to the left if the vehicle is not turning left or indicating an intention to turn left.

For further information refer to the Austroads Guide to Road Design Part 3: Geometric Design (2010), Section 4.8.11: Wide Kerbside Lanes.

Wide Kerbside Lane Markings

General

As indicated above, wide kerbside lanes are traffic lanes that are wide enough to be shared by cyclists and motorists. However, wide kerbside lanes are not immediately recognisable as a bicycle facility as most do not have a bicycle lane line or a bicycle symbol marked on the pavement.

The purpose of installing wide kerbside lane markings is to indicate to motorists and cyclists that an on-road bicycle facility has been provided along the particular length of road as shown in Figure 2.

The markings advise motorists that:

- they are more likely to encounter cyclists along roads with these markings,
- the lane can be shared between motorists and cyclists, and
- sufficient space is available for sharing the lane with cyclists.



Figure 2: Marking details of wide left lane

Guidelines for Using Wide Kerbside Lane Markings

Lane Widths

The markings may be used for wide left lanes in 60 km/h zones, 70 km/h zones and in 80 km/h zones. The markings may only be used in wide kerbside lanes that meet the minimum width requirements as outlined in Austroads' Guides.

Table 2 indicates the absolute minimum lane widths that are required before a wide kerbside lane marking can be installed for each speed zone. The table also indicates the distance from the face of the kerb to the outer edge of the marking.

Table 2: Wide Kerbside Lane widths

Speed Zone	Minimum width of left lane for marking to be used	Distance from face of kerb to outer edge of marking
60 km/h	3.7 m	1.2 m
70 km/h	4.0 m	1.5 m
80 km/h	4.3 m	1.8 m

Location of Markings

Regardless of the speed zone, the markings should be placed 15 metres before and after each intersecting street and at intervals not exceeding 200 metres. Additional markings should be used around curves, over crests and opposite "T" intersections.

Bicycle Lane Signs

Wide kerbside lanes are intended to be a lane that is to be shared between motorists and cyclists and is not a separated bicycle facility. As such, bicycle lane signs must not be installed on wide kerbside lanes.

Road Safety Road Rules 2009

Bicycle Lanes

Under the Road Rules 153(4), A **bicycle lane** is a marked lane, or the part of a marked lane—

- (a) **beginning at** a *bicycle lane sign* applying to the lane, or a road marking comprising both a white bicycle symbol and the word 'lane' painted in white; and

(b) **ending at** the nearest of the following—

- an *end bicycle lane sign* applying to the lane, or a road marking comprising both a white bicycle symbol and the words 'end lane' painted in white;
- an intersection (unless the lane is at the unbroken side of the continuing road at a T-intersection or continued across the intersection by broken lines);
- if the road ends at a dead end—the end of the road.

The detailed signs and pavement marking layout of exclusive on-road bike lane is provide in Figure 3 below

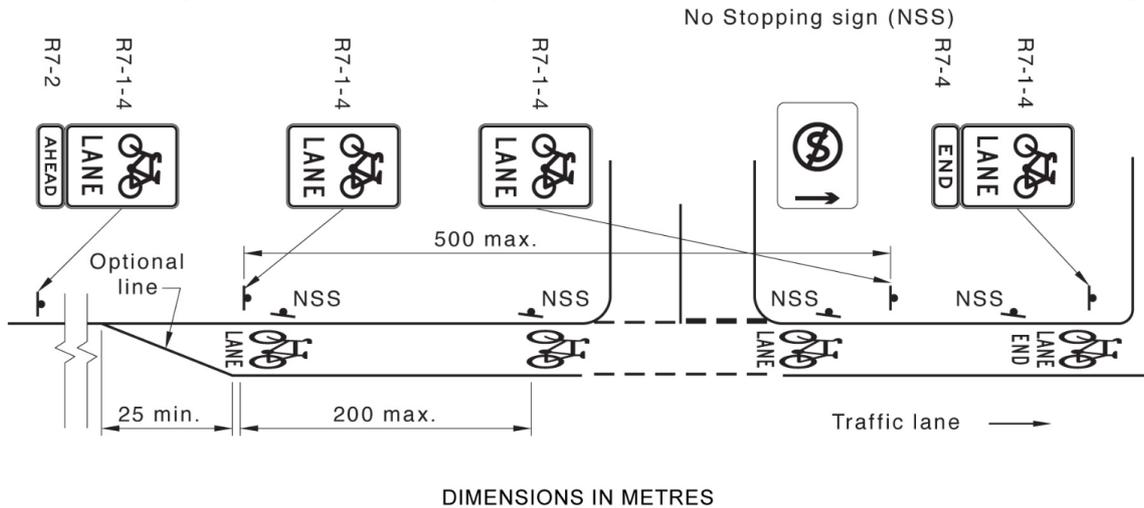


Figure 3: Typical Exclusive Bike Lane using Road Safety Road Rule

However, it is considered best practice to have both signs and pavement markings where an exclusive bicycle lane is proposed. The word 'LANE' under the cycle symbol is used on the departure side where the intersecting road meets with a bicycle lane.

As wide kerbside lanes do not have a *bicycle lane sign* erected it is not legally a bicycle lane and the rules that apply to bicycle lanes do not apply to wide kerbside lanes.

Overtaking Cyclists

Under the Road Rules motorists are permitted to overtake cyclists travelling in the same traffic lane. When overtaking cyclists, motorists are not required to change into the adjacent traffic lane. In addition, the Road Rules allow cyclists to overtake motorists to the left.

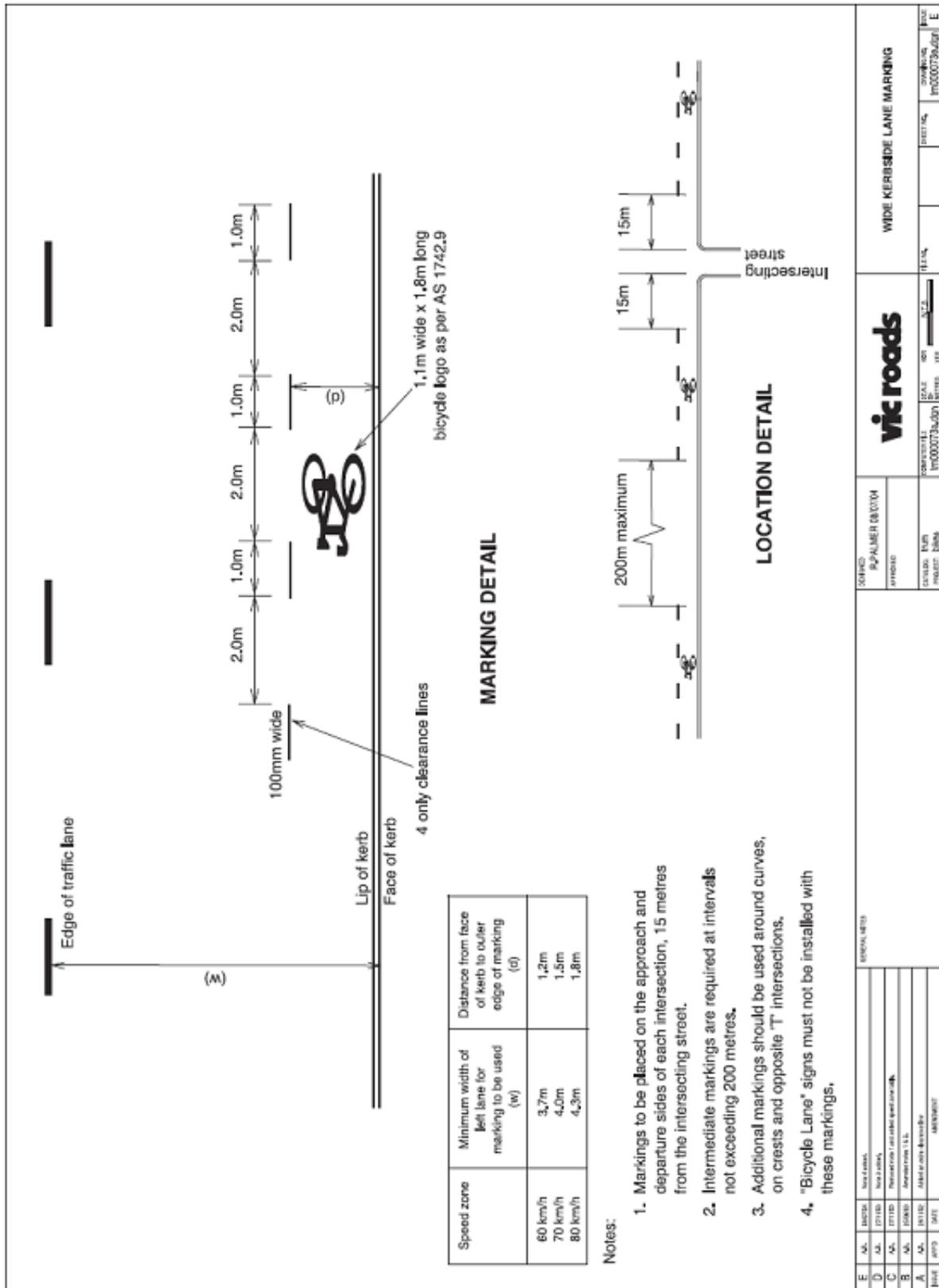


Figure 4: Wide Left Lane Marking to be used in Various Speed Zone

Studies into Wide Kerbside Lane Markings

Three studies have been undertaken to ascertain drivers' understanding of the markings and on car tracking positions.

The studies found that:

- (a) 86% of motorists and 95% of bus drivers understood the markings to mean that a bicycle facility for shared use had been provided and that it is likely that cyclists would be using the road.
- (b) Cyclists feel more comfortable when cycling along a road that has the markings than along a road that does not have the markings.
- (c) The amount of clearance that drivers give to cyclists when overtaking them is dependant upon the width of the lane and that drivers give more clearance to cyclists when the lane is wider.

Clearances to Cyclists

In October 2003, consultants Sinclair Knight Merz undertook a study into car tracking positions in wide kerbside lanes and measured the clearances that cars gave to cyclists.

The study was undertaken a various locations that included Burke Road in Balwyn, Belmore Road in north Balwyn and Burwood Highway in Burwood. The results of the study are outlined in the Table 3.

The study found that drivers give cyclists an average clearance of about 1.0 m when overtaking them in a wide kerbside lane as shown in Figure 5

If there are vehicles present in the adjacent traffic lane, drivers give cyclists an average clearance of between 0.7 metres and 0.9 metres.

Table 3: Wide Kerbside Lane clearances

Site	Burke Road	Belmore Road	Burwood Highway
Speed Zone	60 km/h	60 km/h	70 km/h
Width of wide kerbside lane	4.1 m	3.9 m	4.5 m
Average clearance to cyclist (no car in adjacent lane)	1.0 m	0.9 m	0.9 m
Average clearance to cyclist (car in adjacent lane)	0.9 m	0.7 m	0.8 m

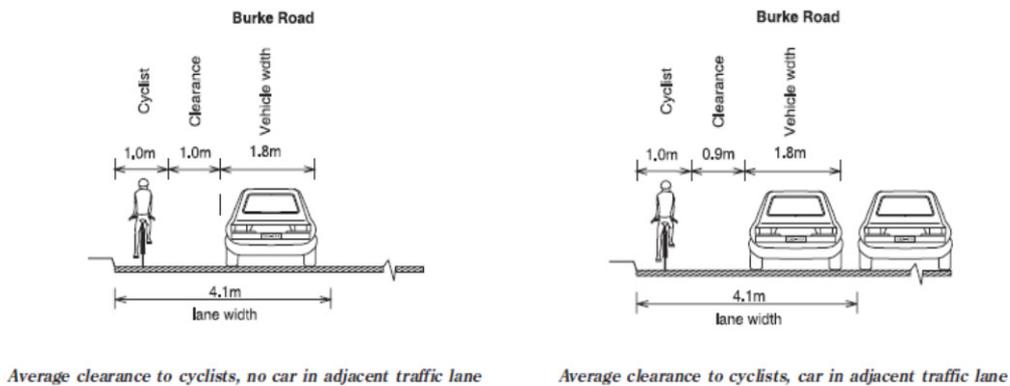


Figure 5: Average Clearance for cyclists

Clause 3.2 (d) – Bicycle Path and Footpath Provision - Signs, Bicycle Only

The end of the path, including any point where the path crosses a road used by motor traffic but not at each footpath, should be indicated by use of the R8-1 sign with the supplementary END sign (R7-4), or a regulatory sign indicating other conditions apply on the path (R8-2 or R8-3).

Where the bicycle path crosses a road or other pathway, the installation of a Give Way sign should be considered where it is desirable to reinforce that cyclists need to give way.

Note: sign R8-1 supersedes (for off-road application) the 'Bicycle Only' sign and 'Bicycle End sign which incorporate a green annulus. Although these signs still have legal significance they shall cease to be used for new installations and replacement signs.

Clause 3.2 (e) – Bicycle Path and Footpath Provision - Signs, Shared Path

The end of a Shared Path, including any point where a path crosses a road used by motor traffic, should be indicated by use of the R8-2 sign with the supplementary END sign (R7-4) or a regulatory sign indicating other conditions apply on the path (R8-1 or R8-3).

Note: sign R8-2 supersedes the 'Shared Footway' sign and 'End Shared Footway' sign, which incorporate a green annulus. Although these signs still have legal significance they shall cease to be used for new installations and replacement signs.

Clause 3.2 (f) – Bicycle Path and Footpath Provision - Signs, Separated Footpath

Sign R8-3 shall be used on an off-road path to separate cyclists and pedestrians, each group keeping to their designated side of the path. The sign has a left and right version, both being required to cover the opposing direction on each particular path, i.e. the signs are to be erected in the correct orientation to match the pavement markings.

The end of the path, including any point where the path crosses a road used by motor traffic but not at each footpath, should be indicated by use of the R8-3 sign with the supplementary END sign (R7-4) or a regulatory sign indicating other conditions apply on the path (R8-2 or R8-3)

Note: Sign R8-3 supersedes the 'Separated Footway' sign and End Separated Footway' sign, which incorporate a green annulus. Although these signs still have legal significance they shall cease to be used for new installations and replacement signs.

Clause 3.4 – Footpaths and Shared Paths

Design and installation of shared paths should be in accordance with Austroads 'Guide to Road Design, Part 6A Pedestrian and Cyclist Paths' (2009), Section 3.4 and Cycling Aspects of Austroads Guides (2014), Section 7.5.4.

Clause 3.7 – Shared Paths End Treatment

A path terminal treatment may be required where a shared path or bicycle path intersects with a road to recreational and commuter paths that cross a road from a reservation, or to paths that follow a major road and cross side streets. The objective of a path terminal treatment is to prevent illegal vehicle access with a design and/or device that maintains a safer operating environment for cyclists

For detailed guidance on the use and design of path terminal treatments refer to Section 10 of Austroads Guide to Road Design, Part 6A.

Terminal treatments for off-road, shared user paths are generally provided to:

- (a) restrict illegal access by motorists to road reserves and parkland; and/or

(b) advise cyclists that there is a road ahead and slow cyclists down before they cross the road.

However, terminal treatments must be designed and installed in such a way as to ensure that they serve their intended purpose and do not cause an unacceptable hazard to cyclists.

Preventing Unauthorised Access

In some instances, it may be necessary to install terminal treatments to prevent access by unauthorised vehicles into road reserves and parklands. This is in order to prevent damage to paths, to ensure that paths can only be used by cyclists and pedestrians and to prevent rubbish being dumped illegally.

However, before a terminal treatment is installed there must be clear evidence that such access is occurring and the treatment must be effective at preventing access by these vehicles.

Slowing Cyclists Down

In most instances, it is unnecessary to slow cyclists down before crossing a road. However, it is important that cyclists on off-road paths be provided with sufficient visual and/or physical cues to advise them that they are approaching a road crossing.

One of the five basic requirements for cyclists is that they maintain speed. As such, cyclists will try and keep moving, unless it is necessary for them to stop. Very few cyclists will ever dismount and walk. For these reasons, most cyclists will not try and negotiate tight corners such as those associated with “chicanes” and similar terminal treatments. Instead, cyclists will simply take an alternative path around the treatment as shown in Figure 6 below.



Figure 6: Terminal treatment that cyclists avoid by cycling to the left

Opening Widths for Terminal Treatments

If it is necessary to install a terminal treatment to restrict access by unauthorised vehicles (rather than slow cyclists down) the treatment should have an opening width of no more than 1.6 metres. If the purpose of a terminal treatment is to provide visual and physical clues to a cyclist and to slow them down before they reach a road, the treatment should have an opening width of no less than 1.4 metres. Opening widths that are less than 1.4 metres can be overly restrictive and can be a safety hazard for cyclists as shown in Figure 7 below.



Figure 7: Terminal treatment with an opening that cyclists find difficult to pass through

As a result, if a terminal treatment is required, it should have an opening of between 1.4 metres and 1.6 metres. On paths that allow horse riders access, the width of the terminal treatment must be wide enough to allow horses to get through.

Preferred Terminal Treatments

If the purpose of the terminal treatment is to restrict access to unauthorised vehicles and/or to slow cyclists down before they reach the road, the preferred terminal treatments are shown in the Figure 8

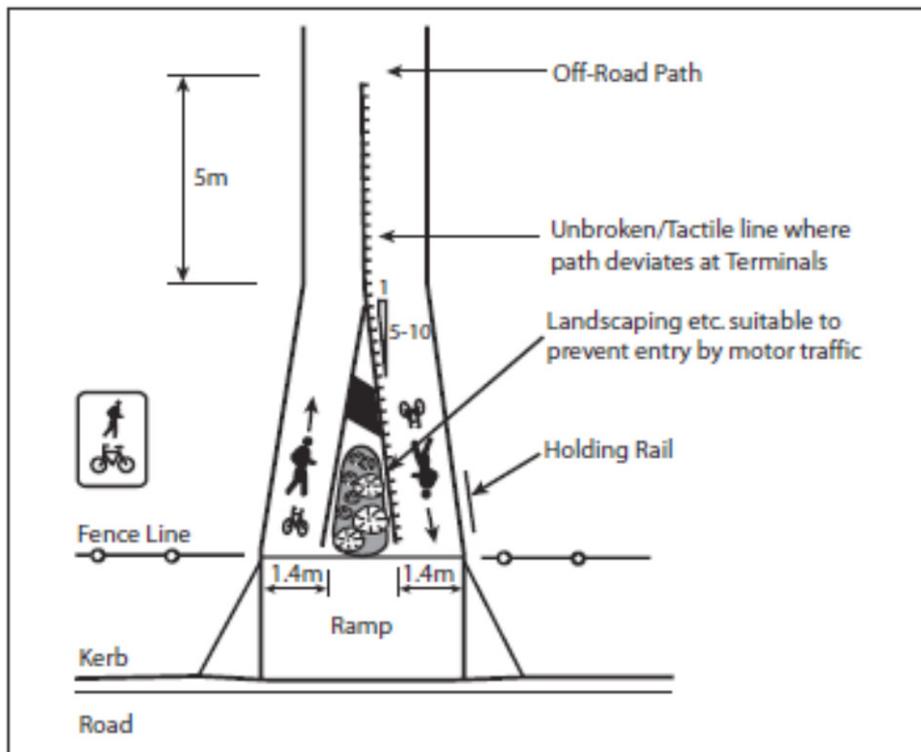


Figure 8: Separate entry and exit terminal treatment

If there is no need to restrict access to unauthorised vehicles and/or to slow cyclists down before they reach the road, there is no need to provide a terminal treatment at all.

Separate entry and exit terminal treatment

The preferred terminal treatment to restrict access and to slow cyclists down is to separate the entry to the path from the exit as shown in the above diagram. This type of treatment provides sufficient advice to cyclists that they are approaching a road and does not place an obstacle (such as a bollard) in the path of cyclists.

In order to restrict unauthorised access, it is critical that the fence line continue up to the edge of the path. If access is required for authorised vehicles, removable posts may also be used.

Staggered Fencing Treatment

An alternative treatment that could be considered to slow cyclists down is to install two staggered chain mesh fences as shown above or a path deviation as shown in Figure 9 below.



Figure 9: Offset bicycle path on Kelletts Road, Rowville

This type of treatment is particularly suitable for slowing cyclists down as it narrows the path and requires cyclists to slow down to negotiate their way through. The key with this type of treatment is to ensure that there is sufficient distance between the fences so that cyclists are not forced to stop and dismount. It is suggested that a minimum distance of 3.0m be adopted.

Bollards and 'U' - Rails

A common method of restricting access to unauthorised vehicles is to install a bollard in the centre of the path. This type of treatment creates an unacceptable risk to cyclists and should only be used when there is no other alternative available.

If bollards are to be used on paths to restrict access, they must be used in conjunction with a feature on the sides of the path to provide an opening of no more than 1.6 metres wide. They should also be conspicuous to cyclists and include linemarking to direct cyclists away from the bollard. These details are shown in Figures 10, 10a & 11 and photographs overleaf.

For paths that are 4.0 metres wide or more, consideration could be given to using a 'U' – Rail and target board as shown in Figure 10a.

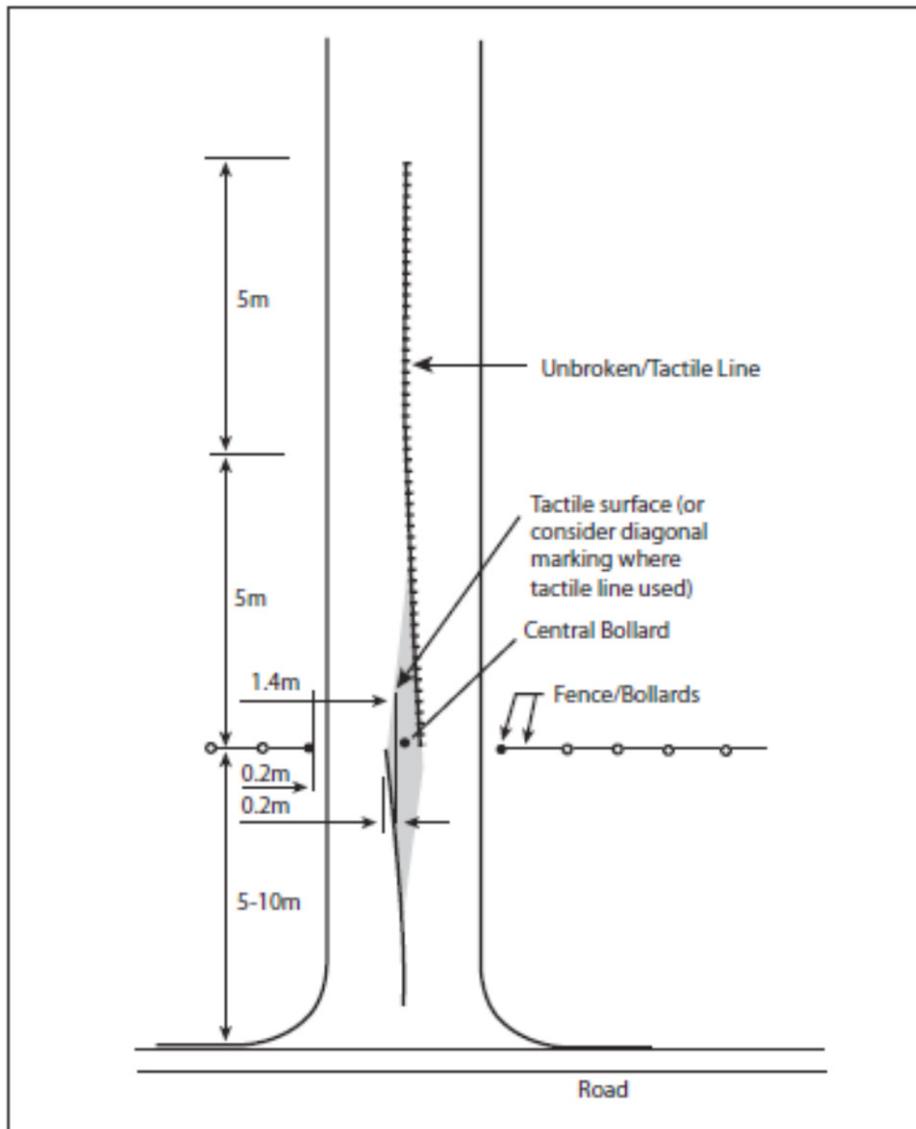


Figure 10: Preferred layout for the use of central bollard

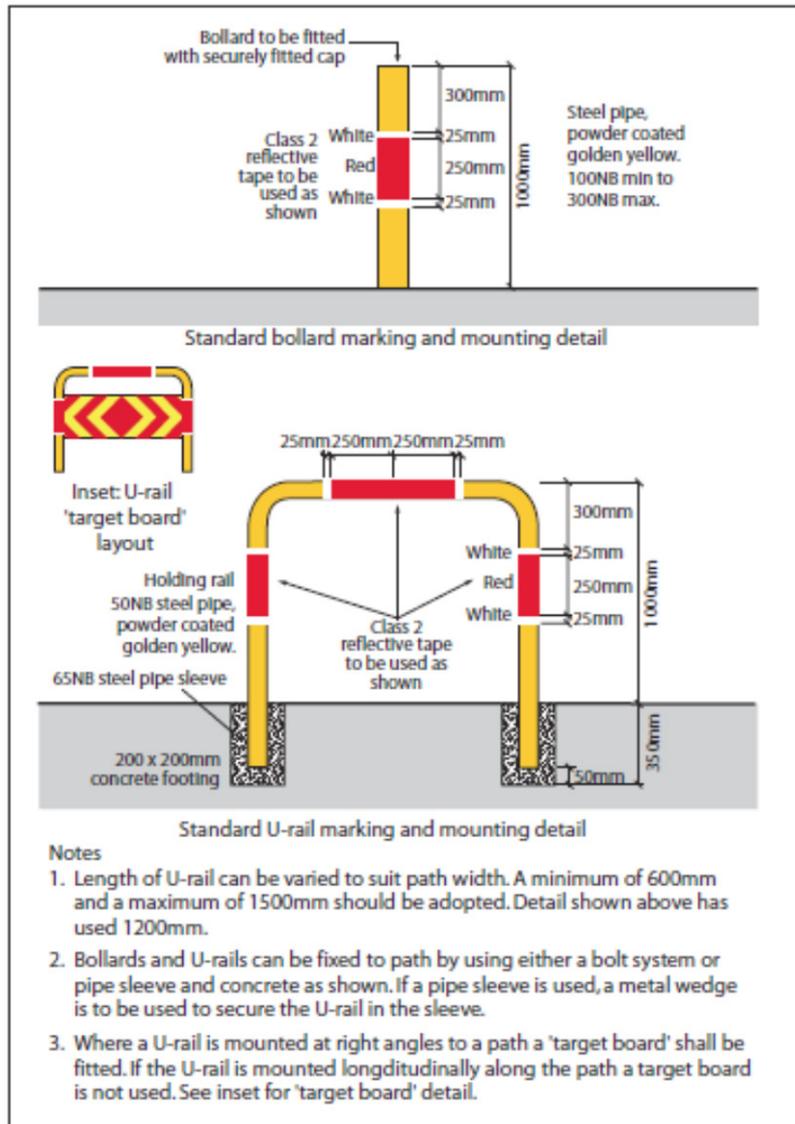


Figure 10a: Preferred bollard and 'U' – Rail details (courtesy RMS, NSW)



Figure 11: Example of preferred bollard treatment to prevent motor vehicle access (courtesy RMS, NSW)



Figure 12: Example of preferred ‘U’ – Rail and target board to prevent motor vehicle access (courtesy RMS, NSW)

End of Path Ramps and Lighting

The design of all end of path ramps should be in accordance with Australian Standard AS1428.4:1992 – ‘Design for Access and Mobility’ and comply with the requirements of the Disability Discrimination Act. This is to ensure that all paths can be accessed by all people, especially those with disabilities.

As a general principal, end of path ramps should have a gentle gradient and a smooth invert to ensure safety and comfort by all path users, including cyclists. Flatter ramp gradients of 1 in 15 should be used to transition from on-road bicycle lanes to off-road paths to cater for higher travel speeds. It is also important to consider the installation of appropriate lighting at all end of path treatments.

Clause 4.1 – Bicycle Provision on Freeways, General

Cycling is permitted on the shoulders of rural freeways because:

- these areas provide the most practical route for bike riders;
- these areas have relatively low volumes of traffic on main roads and entry and exit ramps that bike riders need to cross.

Cycling is not permitted on urban freeways because:

- there are other safer routes that bike riders can take;
- these areas carry relatively high volumes of traffic, including entry and exit ramps. There are many more ramps on urban freeways and these ramps often have more than one lane.

Further information on cycling on freeways is available on the VicRoads website at <https://www.vicroads.vic.gov.au/traffic-and-road-use/cycling/places-to-ride>

or by searching for ‘bicycles on freeways’ in the search toolbar on the VicRoads website.

Road access signs in the style of Sign R6-13 (refer to Road Rule 97 and Schedule 2 of Road Safety Road Rules 2009) are erected at freeway interchanges to prohibit classes of persons or vehicles from using a section of freeway.



R6-13

Where cyclists are permitted to use a freeway, Austroads Guide to Road Design Part 4C: Interchanges (2009) – Section 1: Cyclists provides guidance on the signage and linemarking requirements.

Rule 95(2) enables a rider of a bicycle to use an emergency stopping lane. It is necessary that an R9-3 Bicycle Excepted supplementary plate is erected under each R5-58 Emergency Stopping Lane Only sign to reinforce to cyclists that they need to use the shoulder of the freeway.

Where separate bicycle paths are constructed within the freeway reserve, the path is declared as a “footway” under the Transport (Compliance and Miscellaneous) Act 1983 and its use by cyclists is authorised by shared path signs under the Road Safety Road Rules 2009 – see Road Rule 242.

Clause 4.2 – Bicycle Provision on Freeways, Signs

DEPARTURE

The NARROW SHOULDER ON BRIDGE sign (W8-V112) shall be used in conjunction with the Bicycles sign (W6-7) on a freeway where bicycles are permitted, and where the left shoulder across a bridge or other structure has less than 2.0 m of useable width available to cyclists.



W8-V112

Clause 4.2(C) – Signs, Bicycles Crossing Ramp (W6-7, W8-28)

The Bicycles sign (W6-7) shall be used in the following locations on applicable freeways:

- On the freeway carriageway, 200 m in advance of where cyclists are required to cross an exit ramp. In this case a supplementary plate W8-28 shall be used below the sign.
- On an entry ramp, 150 m in advance of where cyclists on the main carriageway are required to cross the entry ramp. In this case a supplementary plate W8-28 shall be used below the sign.
- On the cross road at interchanges where all cyclists are:
 - not permitted to cross the freeway ramps and are required to use the exit and entry ramps to proceed along the freeway, crossing the cross road,
 - not permitted to continue along the freeway and are required to continue their journey via an alternative route along the cross road or,
 - otherwise where it is considered that the presence of bicycles may not be expected.

Clause 5.4 – Direction Signs

Providing direction signs for cyclists is important in helping users find new routes to destinations, or supplementing general traffic direction signs, particularly where new bicycle facilities have been installed. Direction signs can be provided specifically for cyclists for the following situations:

- To indicate where bicycle routes may differ from general traffic directions, e.g. using local roads, contra-flows, no-through roads and off-road paths;
- To show the distance (in kilometres) to key destinations including activity centres, public transport stations, educational establishments, and significant recreational destinations;
- To highlight key turning points on a route; or
- To guide a cyclist from one designated bicycle route to another (including named off-road shared trails).

The recommended design option for bicycle direction signs is blue text in white background comprised of destination information followed by distance in kilometres as shown in G5-V101.

Note: The blue boarder is optional for sign design.



G5-V101

Further details on bicycle direction signs and wayfinding scheme is outlined in the Austroads Bicycle Wayfinding document in the following weblink

<https://www.onlinepublications.austroads.com.au/items/AP-R493-15>

Attachment A - Signing of Rural Training Circuits

Four signs have been developed by VicRoads that may be used to sign rural cycling circuits, but only following an official approach from a cycling club that is affiliated with Victoria Cycling Incorporated or Cycle Sport Victoria. The combination of signs that should be used depends on whether the circuit is used for training, for training and racing, or for racing only.

Signs for Training Circuits

Cyclist Training Route Sign (W6 – V11)

This sign is for rural training circuits that are not used for racing. It should be displayed at the beginning of each section of road on the circuit and repeated at approximately 5 km intervals, or just beyond significant intersections.



Cyclist Training Route sign, W6-V11

NEXT xx km Sign (W8-V114)

This sign may be added to the Cyclist Training Route sign, W6-V11 to indicate the distance to the end of each section of the circuit or to the end of the circuit itself.



Next xx km sign, W6-V11

Signs for Training Circuits and Racing Circuits

Race in Progress sign (T2 - V127)

Where a section of road is used for regular training sessions and a Cyclist Training Route sign W6-V11 is displayed, this sign may be added, commencing just prior to a race getting under way. It should be removed as soon as possible after the race has finished. A flashing yellow light may also be displayed on top of the Cyclist Training Route sign W6-V11 to assist in attracting attention to the sign.



Race in Progress sign, T2-V127

Signs for Racing Circuits

Cyclists Race in Progress Sign (T2-V128)

Where a section of road is used for racing events only and is not used for regular training sessions, this sign can be used as a temporary sign for the duration of the race.

These signs should be displayed at the beginning of each section of road and then repeated at approximately 5 km intervals or just beyond significant intersections. The sign may only be displayed for the duration of the race. It may be a permanently erected folding sign or a temporary sign that is mounted on bipods. A flashing yellow light may also be displayed on top of this sign to assist in attracting attention to the sign.



Cyclists Race in Progress sign, T2-V128

Urban Areas

The signs in this Attachment are intended for use on rural road cycling circuits, which are used for regular training or for racing. These signs are not intended for use in urban areas. However, when a cycling race is being held in an urban area, the Cyclists Race In Progress sign, T2-V128 may be used for the duration of the race.

Approval for Races and Signs

On-road cycling races require written approval from the Police. The Police usually require the race organiser to also liaise with VicRoads and the local Council to obtain their approvals.

These signs are "minor traffic control items"; they may not be erected on local roads and/or main roads without the approval of the relevant local Council. Similarly, they may not be erected on highways, tourist roads, forest roads and/or freeways without the approval of VicRoads.

Manufacture and Erection of Signs

These signs must be manufactured in accordance with Section 860 (Manufacture of Road Signs) of VicRoads' Standard Specifications for Roadworks and Bridgeworks. They must have a black legend on a yellow background.

Attachment B - Providing for Cyclist at Bus Stops

Introduction

The purpose of this section is to provide guidance on providing for cyclists at bus stops.

Buses and Cyclists at Bus Stops

Bus drivers who are approaching a bus stop with a cyclist ahead of them must decide whether to overtake the cyclist and then pull into the bus stop or wait for the cyclist to pass the bus stop.

Cyclists who are approaching a bus at a bus stop must decide whether to wait for the bus to leave the bus stop or ride past the stationary bus.

As indicated in Figure B 1, cyclists may ride past a stationary bus to the left using an off-road path (if provided), overtake the bus to the right or stop behind the bus and wait.

Cyclists riding to the left of a stationary bus on an off- road path may cause conflict with pedestrians who are getting on and off the bus.

Cyclists who overtake the bus to the right of the bus within the traffic lane or use the adjacent traffic lane risk being caught by the bus as it leaves the bus stop. They also risk being caught between two streams of traffic.

Types of Bus Stops

Bus stops may involve buses stopping:

- (a) at the kerbside within the kerbside traffic lane without parked cars adjacent to the stop;
- (b) at a kerb outstand bus stop which may have parked cars adjacent to the outstand;
- (c) at an indented bus bay that requires buses to exit the traffic lane to stop at the bus stop;
- (d) at the kerbside with parked cars adjacent to the stop that requires buses to exit the traffic lane to stop at the bus stop.

The provision for cyclists at each of these bus stops will be influenced by the type of bicycle facility provided upstream and downstream of the bus stop.

It is preferable that cyclists be provided with sufficient space to overtake a bus at a bus stop within the traffic lane. Where there is sufficient space, and it is considered necessary, an off-road path could be provided to the left of the bus stop.

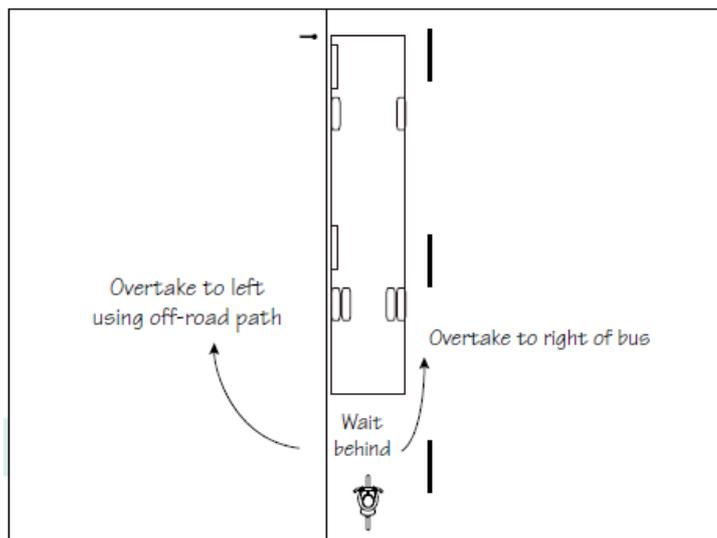


Figure B1: Options for cyclists at Bus Stops

Options for Providing for Cyclists at Bus Stops

There are three options for providing for cyclists at bus stops. These are:

- (a) provide cyclists with a wide kerbside lane so that they may overtake to the right of a stationary bus at a kerbside or kerb outstand bus stop;
- (b) provide cyclists with an exclusive or shared parking bicycle lane at an indented bus bay or a kerbside stop between parked cars;
- (c) provide cyclists with an off-road path to the left of the bus stop.

These options require sufficient space within the carriageway for options (a) and (b) or between the kerb and the property boundary for option (c).

The provision of an off-road path to the left of the bus stop is considered more desirable on routes with high volumes of cyclists and/or higher bus frequencies.

An off-road path to the left of the bus stop may also be considered to provide connectivity between upstream and downstream paths, if space permits.

Providing for Cyclists at Kerbside Bus Stops

Kerbside bus stops may be accessed from general traffic lanes or from bus lanes. A separate on-road bicycle lane may also be provided at some locations.

Figure B2 shows the provision of a wide kerbside lane for cyclists at kerbside bus stops, including a 0.3 m strip of localised flaring, where necessary (refer note below).

Figure B3 shows the provision of an on-road bicycle lane for cyclists at kerbside bus stops.

Table B1 provides details of the minimum widths for wide kerbside traffic lanes and for on-road bicycle lanes in various speed zones.

When a bus is stopped, cyclists have a choice of waiting behind the bus, or overtaking it in the residual lane width

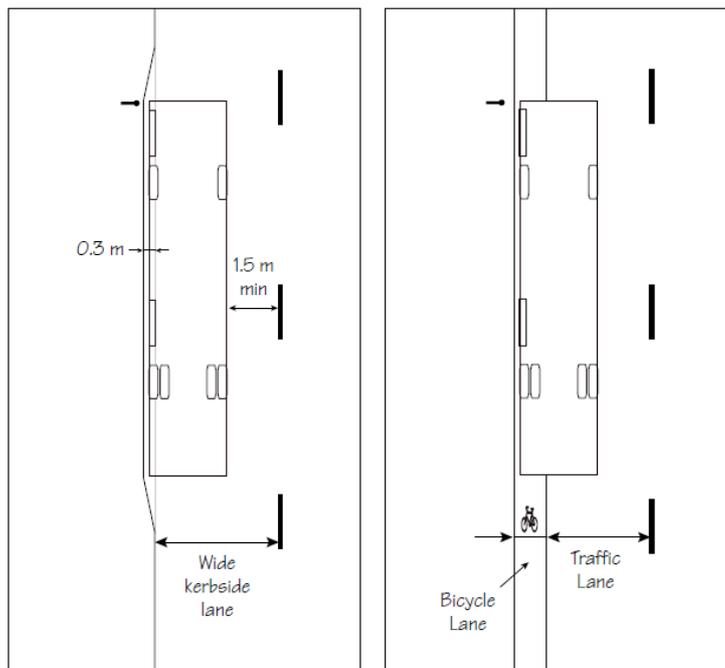


Figure B2: Wide kerbside lane

Figure B3 – On-Road bicycle lane

Table B1- Width of Wide Kerbside Lanes and Bicycle Lanes

Speed Zone	Wide Kerbside Lane Only	Bicycle Lane and Traffic Lane	
		Width of Bicycle Lane	Width of Traffic Lane
60 km/h	3.7 m - 4.2 m <i>(see note below)</i>	1.2 m - 1.8 m	3.0 m
70 km/h	4.0 m - 4.6 m	1.5 m - 2.0 m	3.1 m
80 km/h	4.2 m - 5.1 m	1.8 m - 2.3 m	3.3 m

Note: Wide kerbside lanes that are less than 4.0 m can be widened at the bus stop by providing a 0.3 m wide strip of localised flaring as shown in Figures 2, 4 and 6. This provides a minimum width at the bus stop of 4.0 m and a minimum clearance to the right of a stationary bus of 1.5 m (based on a bus being 2.5 m wide).

Providing for Cyclists at Kerb Outstand Bus Stops

Kerb outstand bus stops are also accessed from general traffic lanes or from bus lanes.

Figure B4 shows the provision of localised flaring for cyclists at kerb outstand bus stops. The width of the flaring will depend upon the width of the traffic lane, but should be sufficient to provide a 1.5 m clearance to a stationary bus.

Figure B5 shows the provision of an on-road bicycle lane for cyclists at kerb outstand bus stops.

For details of the minimum widths for on-road bicycle lanes at kerb outstand bus stops, please refer to Table B1.

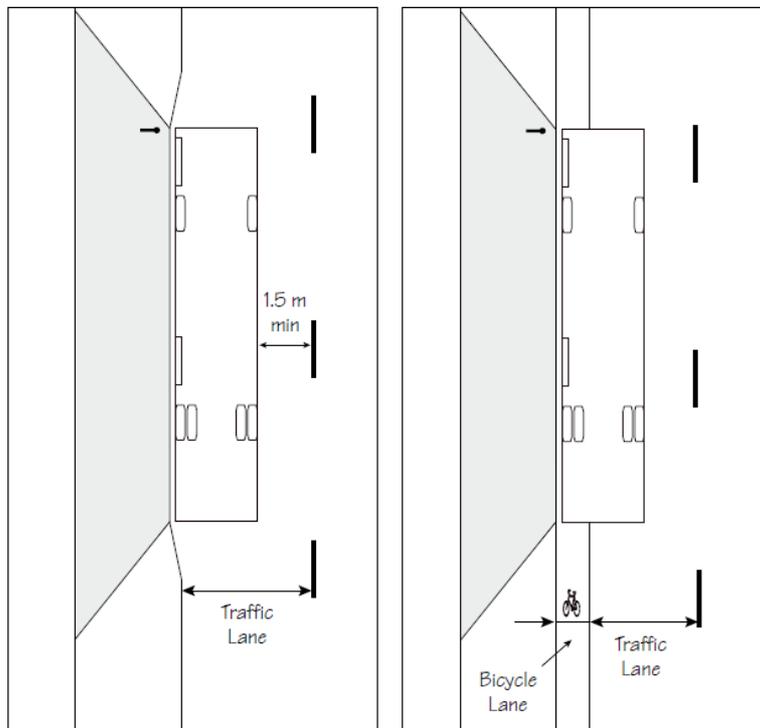


Figure B4: Localised Flaring at kerb outstand bus stop

Figure B5: On-road bicycle lane stop

Providing for Cyclists at Indented Bus Bays and Kerbside Bus Stops between Parked cars

Indented bus bays and kerbside bus stops between parked cars are also accessed from general traffic lanes or from bus lanes.

Figure B6 shows the provision of a wide kerbside lane for cyclists at kerbside bus stops between parked cars, including a 0.3 m strip of localised flaring, where necessary.

Figure B7 shows the provision of an on- road bicycle lane for cyclists at indented bus bays between parked cars.

For details of the minimum widths for wide kerbside traffic lanes and for on- road bicycle lanes at kerb outstand bus stops, please refer to Table B1.

Stationary buses at these bus stops are usually clear of the adjacent traffic lane. The provision of wide kerbside lane or an on-road bicycle lane allows buses to overtake cyclists upstream and downstream of the bus stops.

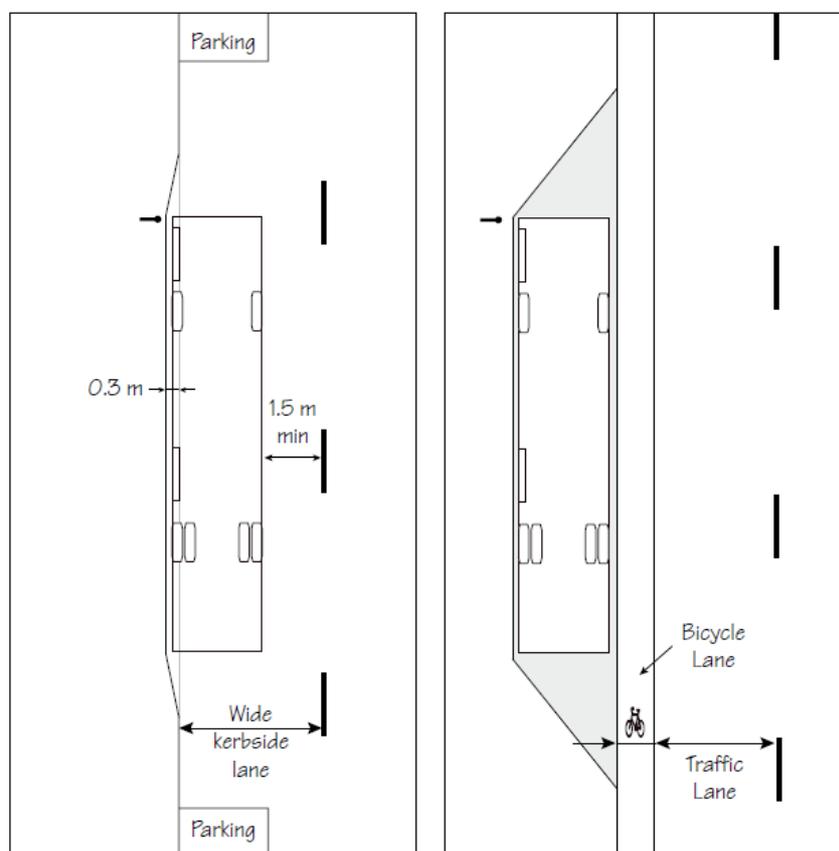


Figure B6 – Wide kerbside lane at kerbside bus stop between parked car **Figure B7 – On-road bicycle lane at indented bus bay**

Providing for Cyclists at Bus Stops Using an Off-Road Bicycle Path

As indicated above, an option for providing for cyclists at bus stops is to provide an off-road path or bicycle lane that allows cyclists to overtake stationary buses on the left of the bus stop.

Figure B8 provides details of an off-road bicycle path or lane that would allow cyclists to ride to the left of a bus stop to by-pass stationary buses.

As indicated, a minimum width of 2.4 m would be required between the bus stop and the property boundary for the provision of an off-road path or lane and a 1.2 m footpath.

It is also important that bus shelters are not placed on or close to the bicycle path and that appropriate clearances are provided to all fixed objects.

Adequate provision should also be made to transition cyclists back into the kerbside traffic lane on the departure side of the bus stop.

The width of the bus stop will depend upon the layout of the pedestrian waiting area.

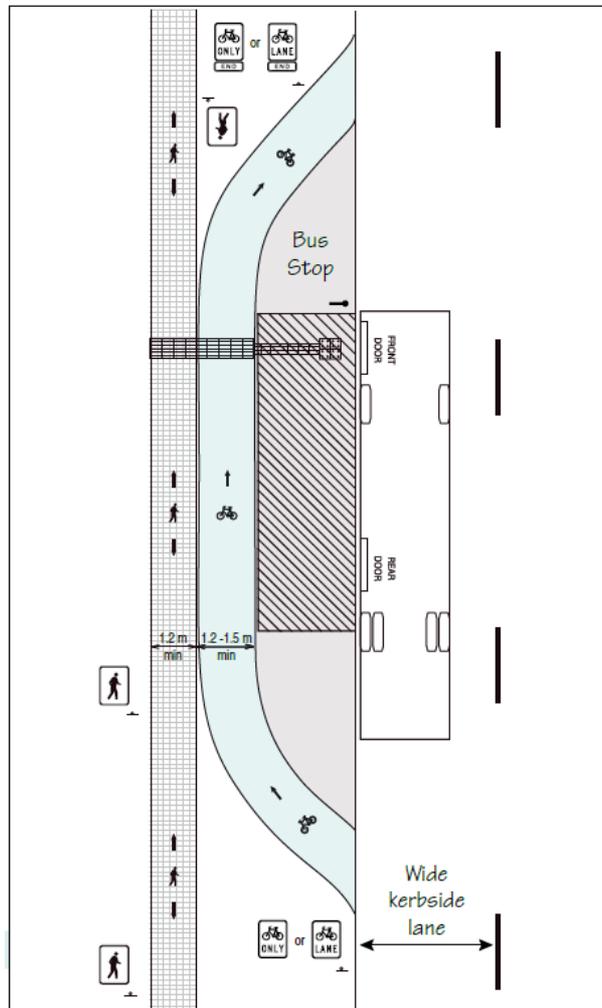


Figure B8 – Off-road bicycle path at bus stop

Document Information

Title: VicRoads Supplement to AS 1742.9:2000 – Edition 1

Department: Network Standards

Directorate: Policy and Programs

Approved by: Jeremy Burdan
Manager – Network Standards

Date of Approval: October 2015

Amendment Record

Edition / Revision	Pages(s)	Issue Date	Amendment Description
AS 1742.9:2000 – Edition 1	All	October 2015	First Edition

Previous versions of this document are available on request by contacting the VicRoads – Network Standards team.

For enquiries regarding this supplement, please contact the VicRoads – Network Standards team via tem@roads.vic.gov.au or 9854 2417.