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On-Road Cycling Signs and Road Markings Guidelines

Midblock and Unsignalised Intersections

Network Operations Directorate

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Authorisation

As Manager Traffic Management Services, I authorise the issue and use of these Policy and Application Guidelines for On-Road Cycling Signs and Road Markings – Midblock and Unsignalised Intersections in Western Australia



MANAGER TRAFFIC MANAGEMENT SERVICES

Date: 17.1.7.2023

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1 PURPOSE

The purpose of this document is to provide guidance to practitioners surrounding the use of signs and road markings to support safe provision for people cycling on the road.

2 SCOPE

The guidance provided in this document applies to on-road bicycle facilities at midblock and unsignalised intersections only.

Shared and separated paths, safe active streets and pavement markings at traffic signals are not within the scope of this document.

3 ROLES & RESPONSIBILITIES

Under the Road Traffic Code 2000 Regulation 297 (1), the Commissioner of Main Roads is the sole authority with power to *“erect, establish or display, and may alter or take down any road sign, road marking or traffic-control signal”*. Furthermore, under Regulation 297 (2) *“The Commissioner of Main Roads may allow an authorised body to erect, establish, display, alter or take down any particular road sign, road marking or traffic-control signal, or road signs or traffic-control signals of a class or type of classes or types, and in the circumstances (if any), specified in the instrument of authorisation”*.

Other roles and responsibilities are outlined below.

Role	Responsibility
Manager Traffic Management Services or Regional Manager	Approval of the installation and/or removal of traffic signs and pavement markings for on-road bicycle facilities
Traffic Services Manager	Review of the installation and/or removal of traffic signs and pavement markings for on-road bicycle facilities
Traffic Services Coordinator	Recommendation of the installation and/or removal of traffic signs and pavement markings for on-road bicycle facilities

4 DEFINITIONS

When reading this guideline, it is important to distinguish between on-road bicycle facilities and off-road bicycle facilities.

On-road bicycle facilities refer to those which are located within a carriageway’s cross-section and include unprotected bicycle lanes, protected bicycle lanes and sealed shoulders. On-road bicycle facilities also refer to signs and road markings which are used to enhance the safety/comfort of people cycling, including on those roads which do not have dedicated space for bicycles.

On-road bicycle facilities are the focus of this document.

Off-road bicycle facilities refer to those which are located outside of a carriageway’s cross-section. These include shared paths, separated paths and bicycle-only paths. Off-road bicycle facilities are not covered in this document. Note the Road Traffic Code (RTC) has been revised to allow cyclists over 12 years of age to utilise footpaths. Footpaths are off-road facilities and therefore outside the scope of this document.

Refer to *Main Roads Glossary of Terms* guidelines which provide the most common terminology used by Main Roads. Other key terms used in this guideline are defined in the table below.

Table 4.1 Key terms used in this policy

Term	Definition
Active transport	Refers to physical activity undertaken as a means of transport, such as walking, cycling, or using other forms of micro-mobility for transportation.
Access Roads	Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by the local government.
AS	Australian Standard
Authorised Bodies	As defined in Regulation 3 of the Road Traffic Code 2000 means a government department, government instrumentality, statutory authority, Local Government, or a body authorised by the Commissioner of Main Roads for the purposes of Regulation 297 (2).
Bicycle	As defined in Regulation 3 of the Road Traffic Code 2000: A bicycle is a vehicle with 2 or more wheels that is built to be propelled by human power through a belt, chain, or gears (whether or not it has an auxiliary motor) and — (a) includes a pedicab, penny-farthing, tricycle and power assisted pedal cycle; but (b) does not include eRideables, a wheelchair, wheeled recreational device, wheeled toy or any vehicle (other than a power assisted pedal cycle) with an auxiliary motor capable of generating a power output over 200 watts (whether or not the motor is operating);
Bicycle lane	<i>As defined in Regulation 3 of the Road Traffic Code 2000:</i> <i>A bicycle lane means a marked lane, or the part of a marked lane —</i> <i>(a) beginning at a "bicycle lane" sign applying to the lane, or a road marking comprising a white bicycle symbol and the word "lane" painted in white; and</i> <i>(b) ending at the nearest of the following —</i> <i>(i) an "end bicycle lane" sign applying to the lane, or a road marking comprising a white bicycle symbol and the words "end lane" painted in white;</i> <i>(ii) 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);</i> <i>(iii) if the carriageway ends at a dead end — the end of the carriageway;</i>

Term	Definition
Bicycle path	<p><i>As defined in Regulation 3 of the Road Traffic Code 2000:</i></p> <p>A <i>bicycle path</i> means a length of path beginning at a “bicycle path” sign or a “bicycle path” road marking and ending at the nearest of the following:</p> <ul style="list-style-type: none"> (a) an “end bicycle path” sign, or an “end bicycle path” road marking; (b) a “separated footpath” sign or a “separated footpath” road marking; (c) a carriageway; (d) the end of the path;
Local Road (Street)	A road under the care and control of a Local Government.
Long-Term Cycling Network	Developed by the Department of Transport in collaboration with 32 local governments, the Long Term Cycling Network (LTCN) identifies the aspirational cycling network for the metropolitan area.
Main Roads WA	Main Roads Western Australia
On-road bicycle facilities	Bicycle infrastructure that is located within a carriageway’s cross-section. On-road bicycle infrastructure includes but is not limited to unprotected bicycle lanes, protected bicycle lanes and sealed shoulders.
Off-road bicycle facilities	Bicycle infrastructure that is located outside of a carriageway’s cross-section. Includes shared paths, separated paths and bicycle-only paths.
Pavement Marking	A word, figure, symbol, mark, line, raised marker or stud, on the surface of a road or path, to direct or warn traffic.
Posted Speed Limit	The speed zone as indicated by compliant regulatory signage.
Protected bicycle lane	Protected bicycle lanes employ physical barriers between people cycling and people driving, which reduces opportunities for conflict. Protected bicycle lanes are considered on-road bicycle facilities. The lines and signs approach for unprotected and protected is consistent and therefore applicable to both approaches.
Road	As defined in Section 4 of the Road Traffic (Administration) Act 2008 means any highway, road or street open to, or used by, the public and includes every carriageway, footway, reservation, median strip and traffic island on it.
Road Marking	As defined in Regulation 3 of the Road Traffic Code 2000 means word, figure, symbol, mark, line, raised marker or stud, on the surface of a carriageway to direct or warn traffic.
Road Sign	As defined in Regulation 3 of the Road Traffic Code 2000: Road Sign means a board, plate, screen road marking or other device whether or not illuminated displaying words, figures, symbols or anything else to direct or warn traffic on, entering or leaving a road.
RTC	Road Traffic Code 2000

Term	Definition
Sealed shoulder	The sealed shoulder is additional pavement width that is not part of the traffic lanes. It can be used to support on-road cycling. Sealed shoulders are considered on-road bicycle facilities. Functionally, sealed shoulders operate in a similar way to unprotected bicycle lanes but are not for the exclusive use of people cycling. Sealed shoulders are sometimes marked with bicycle pavement markings.
Separated path	A path where bicycle riders and pedestrians are required to use separate designated areas. Separated paths are defined as off-road bicycle facilities.
Shared path	A path that is designated for use by both bicycle riders and pedestrians. Shared paths are defined as off-road bicycle facilities.
Traffic Sign	As defined in Regulation 3 of the Road Traffic Code 2000: Traffic Sign means one of the road signs, marks or structures or devices set out in Schedule 2 or 3 placed, or erected, on or near a road.
WABN Plan	Western Australian Bicycle Network Plan (2014-2023).
Vehicle	As defined in Regulation 3 of the Road Traffic Code 2000: Vehicle means the same meaning as that term has in the Act, and, in Parts 4 to 11, inclusive and Part 18 of these regulations, includes an animal driven or ridden but does not include a wheeled toy or wheeled recreation device.
Vulnerable road user	Vulnerable road users include people walking, people using mobility devices (wheelchairs, pushchairs, prams, eRideables, walking sticks and walking aids), people cycling, motorcycle riders and users of micro-mobility devices.

5 GENERAL CONSIDERATIONS

5.1 WABN PLAN

The Western Australian Bicycle Network Plan (WABN) 2014-2031 was originally released in 2014, following an extensive public consultation process, and updated in 2017 to report on progress towards key actions. The WABN Plan outlines various initiatives which seek to make WA a place where cycling is a safe, convenient, and widely accepted mode of transport.

The WABN plan states that all new and upgraded infrastructure for people cycling should adopt an **all ages and abilities** design philosophy. An all ages and abilities design philosophy is about creating a cycling network that is suitable for all people, regardless of their age, physical ability, or the type of bicycle they use.

5.2 SAFE SYSTEM APPROACH TO ROAD SAFETY

It is Main Roads WA's long-term vision to eliminate fatal and serious injuries arising from crashes through the Safe System approach to road safety. This approach recognises that road users may sometimes make mistakes, and that impact speeds above 30 km/h have the highest potential to result in a fatal or serious injury to both people walking and cycling, as shown in Figure 5.1 below.

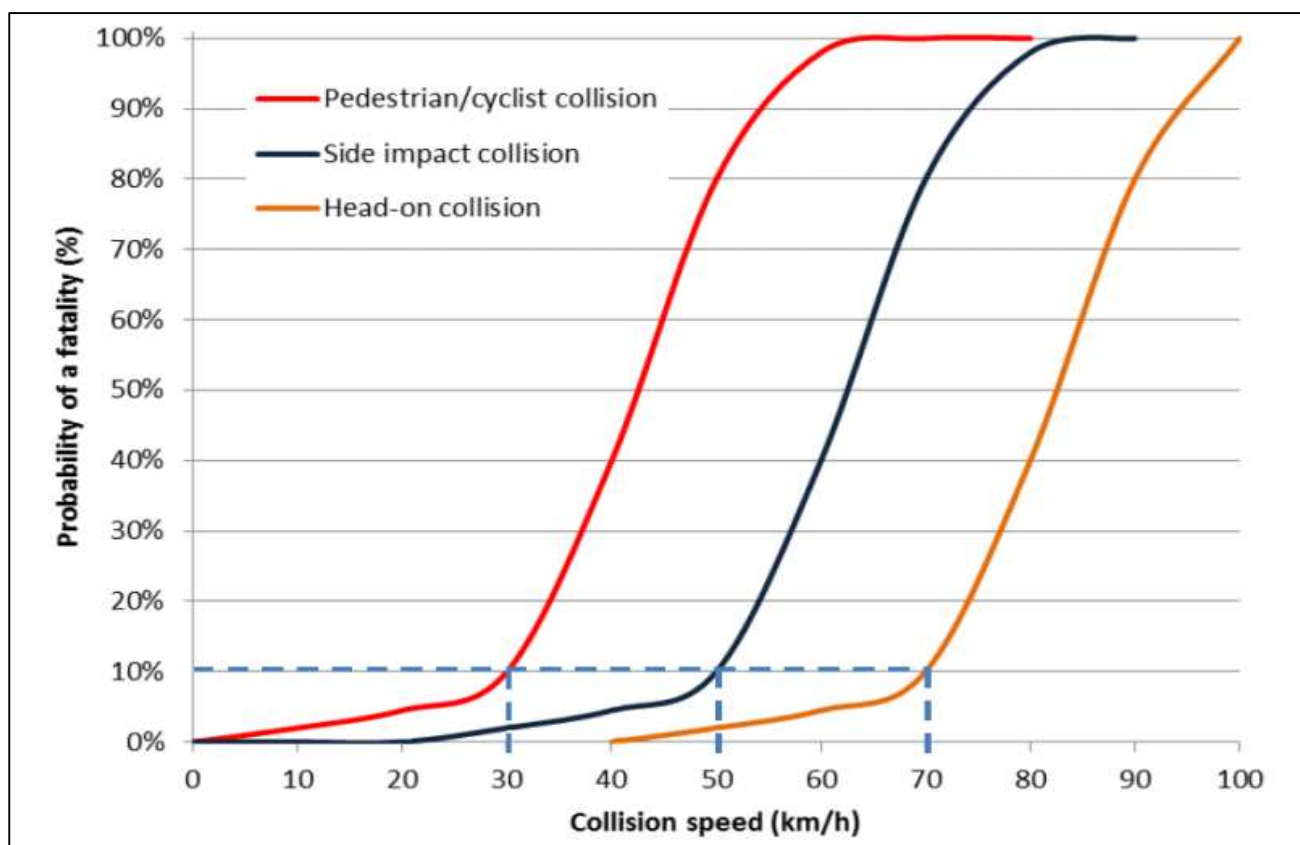


Figure 5.1 For vulnerable road users, the survivability of a crash is significantly reduced when impact speeds exceed 30km/h (Austroads 2018, based on Wrangborg 2005).

Within Main Roads WA, the Safe System approach is applied in accordance with Main Roads WA's Road Safety Management System (ROSMA), which is used to set and monitor the organisation's targets for road trauma reduction. ROSMA has been developed in line with *ISO 39001 for Road Traffic Safety* and drives best practices in the application of Safe System principles to projects and activities.

5.3 CONSIDERATION OF THE LONG-TERM CYCLE NETWORK

Western Australia’s Long-Term Cycle Network (LTCN) aims to ensure that State and Local Governments continue working together towards the delivery of a continuous and connected cycling network. Central to the LTCN is the WA cycling network hierarchy, which is made up of primary, secondary, and local routes (refer to Figure 5.2).

	1. PRIMARY ROUTE	2. SECONDARY ROUTE	3. LOCAL ROUTE
Function	Primary routes are high demand corridors that connect major destinations of regional importance. They form the spine of the cycle network and are often located adjacent to major roads, rail corridors, rivers and ocean foreshores. Primary routes are vital to all sorts of bike riding, including medium or long-distance commuting / utility, recreational, training and tourism trips.	Secondary routes have a moderate level of demand, providing connectivity between primary routes and major activity centres such as shopping precincts, industrial areas or major health, education, sporting and civic facilities. Secondary routes support a large proportion of commuting and utility type trips, but are used by all types of bike riders, including children and novice riders.	Local routes experience a lower level of demand than primary and secondary routes, but provide critical access to higher order routes, local amenities and recreational spaces. Predominantly located in local residential areas, local routes often support the start or end of each trip, and as such need to cater for the needs of users of all ages and abilities.
Design Philosophy	An <u>all ages and abilities</u> design philosophy is about creating places and facilities that are safe, comfortable and convenient for as many people as possible. By planning for and designing infrastructure that caters for the youngest and most vulnerable users, we create a walking and bike riding network that everyone can use. At the heart of this approach is fairness and enabling all people to use the network regardless of age, physical ability or the wheels they use.		
Form	All routes can take a number of different forms and are designed to suit the environment in which they are located. These forms include: <ul style="list-style-type: none"> • Bicycle only, shared and/or separated paths; • Protected bicycle lanes (uni or bi-directional, depending on the environment); and • Safe active streets Principal Shared Paths (PSPs) are often built along primary routes. A PSP is a high quality shared path built to MRWA PSP standard which generally means the path will be 4m wide, have adequate lighting and be grade separated at intersections (where possible). In some locations, quiet residential streets incorporating signage and wayfinding may be appropriate for local routes.		

Figure 5.2 WA cycling network hierarchy

The WA cycling network hierarchy is categorised by “function”, that is, the role that each route plays in connecting people to places. The most appropriate built form of a particular route is governed by various factors including environmental conditions, space availability, topography, traffic speeds/volumes and the presence of driveways/side roads.

5.4 CONSIDERATION OF MOVEMENT AND PLACE

Movement and Place challenge the traditional thinking that transportation corridors are only used to facilitate the movement of people and goods. Movement and Place recognise that streets can also be places in their own right.

A key feature of the Movement and Place concept is a matrix, which depicts the strategic significance of a road or street and the balance between the movement and place roles it has.

Figure 5.3 below shows the matrix for WA. Movement is on the vertical axis and place is on the horizontal axis. The significance of both the movement and place roles is on a continuum from very low (1) to very high (5).

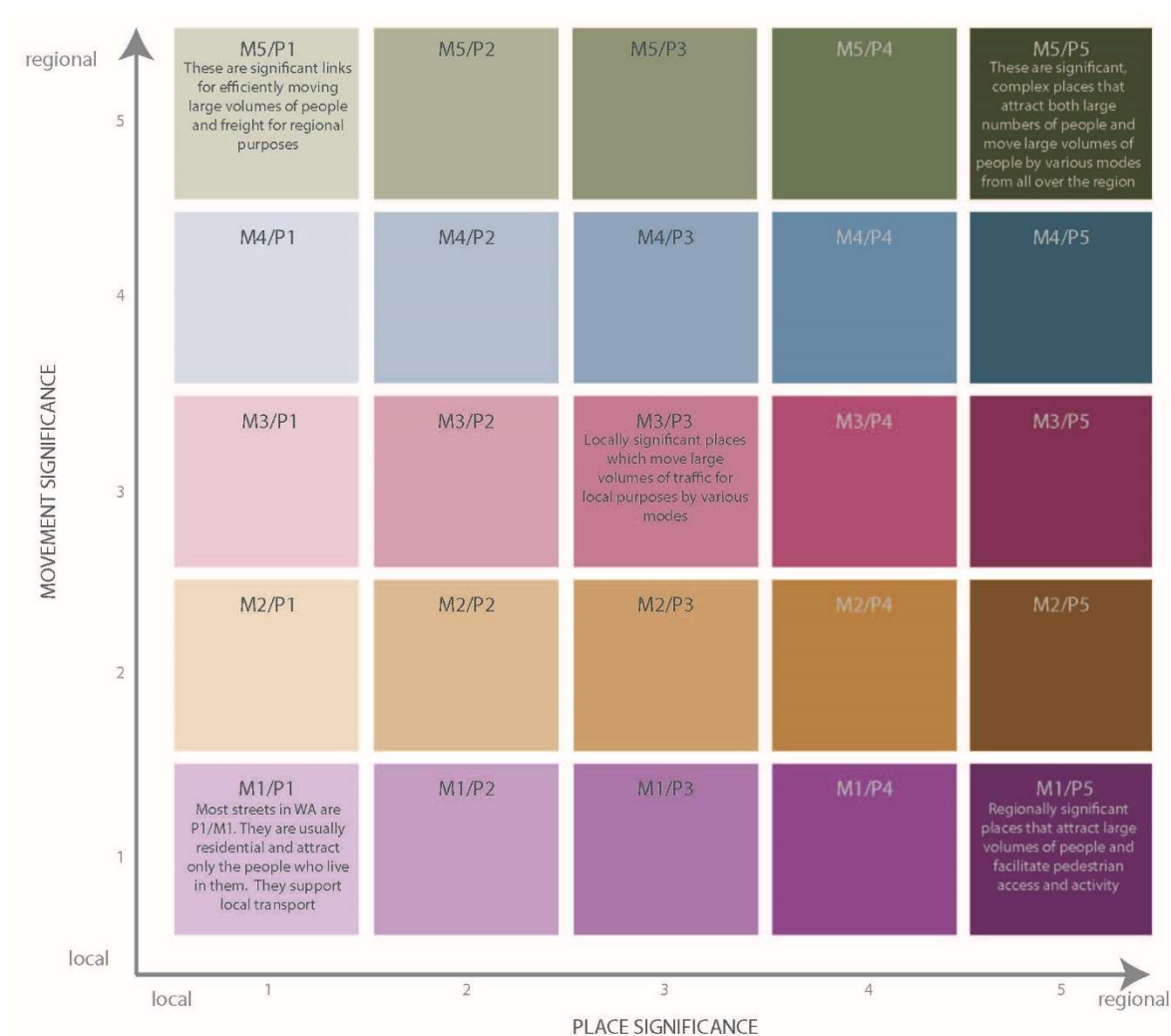


Figure 5.3 Movement and Place Matrix

A classification is assigned by agreeing on the position of a road or street on both axes, thereby allocating it to a cell of the matrix. The matrix can be used to classify any road or street environment in WA both metropolitan and regional. For example:

- A freeway would be high movement but still has a place (particularly in Perth where there are rail stations in the freeway median as well as overhead bridges for pedestrians and cyclists).
- A rural road with a higher place may be a scenic route, rather than a direct route. It may also be the part of a highway passing through a country town as the “main street”.
- A plaza/mall has a high place (such as Forrest Place) but also has high through-pedestrian movements and servicing to consider.

Some jurisdictions assign names to the quadrants of the matrix. WA has deliberately avoided this as it conjures notions of what a road or street in this quadrant “should” look like. The decision to have matrix dimensions leading to 25 cells (movement and place classifications) is deliberate to provide for the delineation of subtle differentiation and nuance between roads and streets. Descriptions for the movement and place significance for five of the cells are provided, other cells fall between these:

- M1P1: Most roads and streets in WA are M1P1. These are usually residential and attract only the people who live in them. They support local transport.
- M5P1: These are significant links for efficiently moving large volumes of people and goods for regional purposes.
- M3P3: These are locally significant places with movement for local purposes.
- M1P5: Regionally significant places that attract large volumes of people and facilitate access and activity.
- M5P5: These are significant, complex places that attract both large numbers of people and move large volumes of people often by multiple modes from all over the region.

Currently, WA ‘Movement and Place Framework’ is being developed in consultation with several key stakeholders. Once developed, this framework shall be incorporated within this guideline.

Table 5.1 outlines the general suitability of various treatments based on some of the movement and place street typologies.

Table 5.1 Suitability of treatments based on movement and place street typologies

Type of treatment	M5/P1	M5/P5	M1/P1	M1/P5
	High movement, low place	High movement, high place	Low movement, low place	Low movement, high place
Protected bicycle lanes	X	A	A	O
Bicycles lanes	X	O	A	A
Green surface treatments	A	O	X	X
Bicycle pavement symbols in sealed shoulder	A	O	X	X
Bicycle pavement symbols in main carriageway	X	O	O	A
Bicycle pavement symbol with wayfinding arrow	X	X	O	O
Share the road signage	O	X	X	X
A	Most likely to be an appropriate treatment			
O	May be an appropriate treatment			
X	Usually, an inappropriate treatment			

5.5 CONSIDERATION OF THE ACTIVE TRANSPORT INFRASTRUCTURE POLICY STATEMENT AND SUPPLEMENT

Endorsed by the Transport Portfolio Governance Council, the Active Transport Infrastructure Policy aims to integrate transport planning and make communities across Western Australia great places to live, work and visit. In addition, enhancing the customer experience by delivering active transport infrastructure that is safe, comfortable, and convenient for as many people as possible.

- Consideration of on-road cycling infrastructure may be more appropriate when constructing or upgrading some regional roads or rail corridors. However, in most cases, regional town centres require a similar level of service to metropolitan areas (e.g., off-road separated infrastructure).
- DoT is currently developing contextual guidance which considers on-road cycling infrastructure provision. Until this is available, specific direction should be sought from DoT.
- Existing on-road facilities do not require to be removed. However, they should be upgraded or replaced on a systematic and opportunistic basis.

6 SIGNS AND PAVEMENT MARKINGS

6.1 GREEN SURFACE TREATMENTS

Green surface treatments are used to highlight locations where there is increased potential for conflict between motor vehicles and people cycling. While the use of green surface treatments on local roads is not required to obtain MRWA formal approval, practitioners should seek MRWA guidance before installation. Green surface treatments should be used sparingly to ensure their effectiveness is maintained at those locations with a high propensity for conflicts.

Situations where green surface treatments may be considered include:

- Where bicycle lanes interface with left turn slip lanes;
- Where bicycle lanes interface with side roads;
- Where bicycle lanes interface with on-street parking;
- Where bicycle lanes interface with bus stops;
- On contraflow bicycle lanes;
- Where bidirectional bicycle lanes interface with driveways;
- Where bicycle lanes interface with roundabouts.

G13 Emerald Green shall be used for green surface treatments in accordance with AS 1742.9. Main Roads standard drawings 200531-0006, 200531-0007 and Main Roads WA Specification 604 should also be referred to as general guidance.

Any application of green surface treatments must ensure that the skid resistance is similar to that of the adjacent road.

Green surface treatments are also applicable to signalised intersections. Refer to *Cycling Facilities at Signalised Intersections* (under development) for guidance.

Guidance surrounding the implementation of green surface treatments is provided in Table 6.1 below. For direction on when to use green surface treatments at advance stop lines and bicycle storage areas, practitioners should refer to Main Roads' policy on *Cycling facilities at Signalised Intersections* (under development).

6.1.1 Use of green surface treatment at left turn auxiliary lane



Figure 6.1 - Application of green surface treatment to left turn auxiliary lane (Great Eastern Highway, Belmont)

Guidance:

- Green pavement surfacing at the left turn auxiliary lane may be considered where people ride bicycles.
- Where used, the green surface treatment should extend the full length of the turn pocket.
- The green surface treatment should be contained within continuity lines as shown Main Roads standard drawings 200531-0006 and 200531-0007.

6.1.2 Use of green surface treatment at the mouth of intersecting side roads



Figure 6.2 - Application of green surface treatment to a side road (Scarborough Beach Road, Mount Hawthorn)

Guidance:

- Green pavement surfacing may be considered at the mouth of intersecting side roads where:
 - The main road has a posted speed limit of 40km/h or more; or
 - Where traffic volumes on the side road exceed 1000 vehicles per day.

6.1.3 Use of green surface treatment on the area between a left turn auxiliary lane and a side road with no kerb island



Figure 6.3 - Application of green surface treatment to the area between the left turn slip lane and side road (Hampton Road, Fremantle)

Guidance:

- The area between a left turn auxiliary lane and a side road may be treated with green pavement surfacing when:
 - Both the left turn slip lane and side road are treated with green pavement surfacing; and
 - where the solid/edge line section is less than 25m long.

6.1.4 Use of green surface treatment on contraflow bicycle lanes



Figure 6.4 - Application of green surface treatment on contraflow bicycle lane (William Street, Fremantle)

Guidance:

- Contraflow bicycle lanes may be treated with green pavement surfacing when no physical separation exists between the bicycle lane and the opposing traffic lane.

6.1.5 Use of green surface treatment adjacent to parallel on-street parking



Figure 6.5 - Application of green surface treatment where a bicycle lane interfaces with parallel parking (Mount Street, Perth)

Guidance:

- Green pavement surfacing can be considered in situations where a bicycle lane places cyclists in the “door zone” of parked vehicles, particularly in situations where there is high parking turnover (i.e., where at least 50% of vehicles stay less than four hours).

6.1.6 Use of green surface treatment adjacent to angled or 90° on-street parking



Figure 6.6 - Application of green surface treatment where a bicycle lane interfaces with angled street parking (Norfolk Street, Fremantle)

Guidance:

- Green pavement surfacing can be considered where bicycle lanes interface with angled or perpendicular on-street parking, particularly in high turnover situations (i.e., where at least 50% of vehicles stay less than four hours). The buffered bike strip (bike lane safety strip) could be used in unconstrained locations.

6.1.7 Use of green surface treatment at bus stops



Figure 6.7 - Application of green surface treatment where bicycle lane interfaces with bus stop (Murray Street, Perth)

Guidance:

- Green pavement surfacing can be considered where bicycle lanes interface with bus stops, particularly those which cater to high volumes of buses (i.e. more than 4 buses per hour). For a bus bay combined with a left turn and a bicycle lane, refer to Main Roads drawing 200331-0092.

6.1.8 Use of green surface treatment on bi-directional bicycle lanes

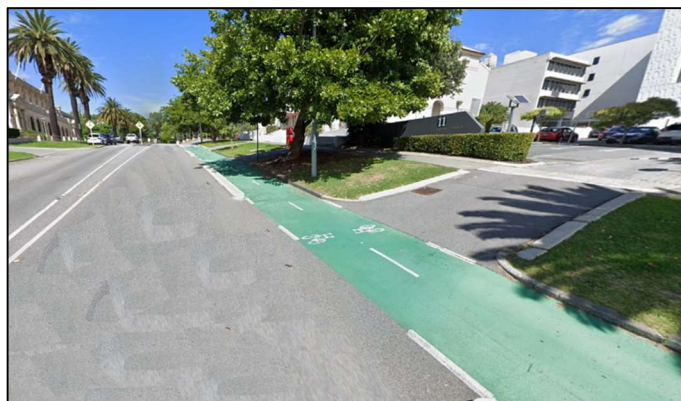


Figure 6.8 - Application of green surface treatment where bi-directional bicycle lanes interface with driveways (Harvest Terrace, West Perth)

Guidance:

- Green pavement surfacing should be considered in situations where bi-directional bicycle lanes interface with side roads and driveways.

6.1.9 Use of green surface treatment at bicycle bypass treatments



Figure 6.9 - Application of green surface treatment at one-way slow point bicycle bypass (Glen Iris, Melbourne)

Guidance:

- Green pavement surfacing shall only be applied at bicycle bypass treatments where a particular safety issue has been identified.

6.1.10 Use of green surface treatment at roundabouts

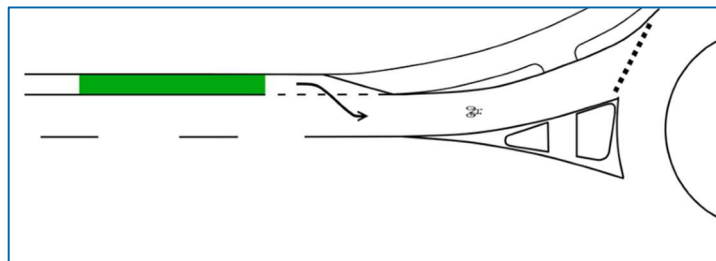


Figure 6.10 - Illustration of green surface treatment ending on approach (for slow-speed roundabouts)

Guidance:

- Main Roads does not support the use of green pavement surfacing within roundabouts as this can lead to confusion when people cycling are using the roundabout to turn right (or make a U-turn). In addition, there is a lack of visibility for drivers on their left-hand side when entering and leaving roundabouts hence being more dangerous.
- At low-speed roundabouts, bicycle lanes shall terminate on the approaches, allowing people cycling to negotiate the roundabout in the general traffic stream.
- At high-speed roundabouts, people cycling shall be provided with off-road alternatives. Refer to Main Roads drawings 200331-0202-13 and 200331-0196-3.

6.2 BICYCLE PAVEMENT MARKINGS

A bicycle safety strip is used to provide separation between bicycle lanes and traffic lanes, or parked vehicles without physical barriers such as bollards and concrete barriers.

Bicycle pavement symbols are used to indicate to other road users the potential presence of bicycle riders, encourage bicycle riders to use the lane or indicate to bicycle riders that the location is a suitable place to be riding. Under the RTC, a bicycle pavement symbol alone is advisory and creates a bike lane only where the word “LANE” is applied underneath the symbol.

Bicycle pavement symbols shall be installed in white reflective pavement marking in accordance with Main Roads Specification 604 Pavement Marking.

6.2.1 Bicycle lane safety strip



Figure 6.11 - Bicycle lane safety strip as part of Traffic Management Plan for Bayswater Station Upgrade (Railway Parade, Meltham)

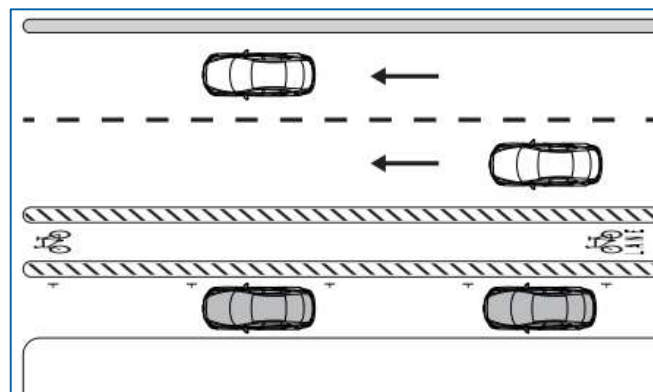


Figure 6.12 - Bicycle lane safety strip (AS 1742.9)

Guidance:

- According to AS 1742.9, a bicycle safety strip provides separation between bicycle lane and traffic lane, or parked vehicles to avoid instances of dooring.
- For angled or perpendicular on-street parking, bicycle lane safety strips could be used in unconstrained locations (see Section 6.1 – *Use of green surface treatment adjacent to angled or 90° on-street parking*).

6.2.2 Use of bike pavement symbol treatment at roundabouts

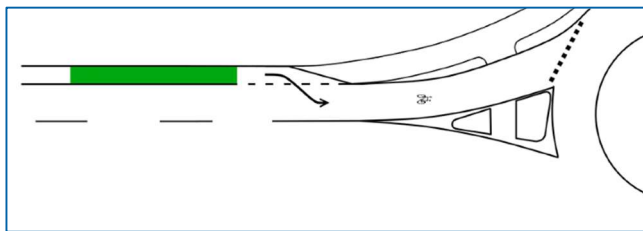


Figure 6.13 - Illustration of the use of bicycle pavement symbol at the roundabout

Guidance:

- At slow roundabouts, bicycle pavement symbols shall be installed on the approach, raising drivers' awareness about the presence of people cycling.

6.2.3 Use of bicycle pavement symbols on sealed shoulders



Figure 6.14 - Application of bicycle pavement symbol to sealed shoulder in an urban environment (Albany Highway, Victoria Park)

Guidance:

- Sealed shoulders are Main Roads WA's predominant on-road bicycle facility and apply to both kerbed and un-kerbed roads.
- Bicycle symbols may be used on roads 60km/h or lower, however, shall not be used on high-speed roads (70km/h and over) – although high-speed roads can be used by cyclists.
- Bicycle pavement symbols may only be installed within sealed shoulders if the width of the sealed shoulder is suitable for the posted speed limit of the road (refer to AGRD Part 3).
- Provision must be made for cyclist facilities across ramps, such as a free flow left turn.

6.2.4 Use of bicycle pavement symbols on exclusive bicycle lanes



Figure 6.15 Exclusive bicycle lane signed with R7-1-4 sign and bicycle pavement symbol (Murray Street, Perth)

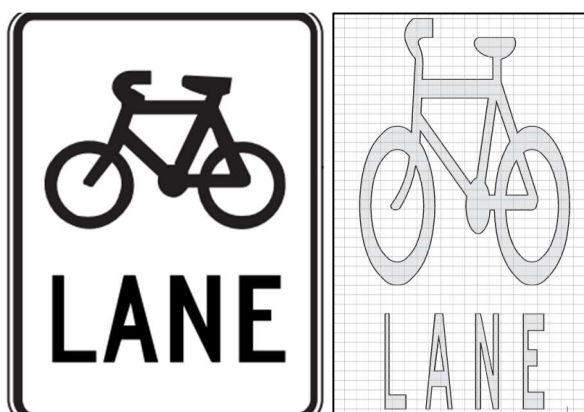


Figure 6.16 - R7-1-4 sign and equivalent pavement marking

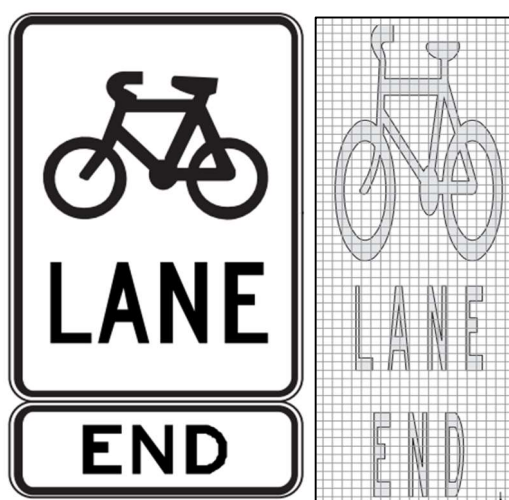


Figure 6.17 - 7-1-4 sign with R7-4 supplementary plate and equivalent pavement marking

Guidance:

- Bicycle lane means a marked lane, or the part of a marked lane beginning at a “bicycle lane” sign applying to the lane, or a road marking comprising a white bicycle symbol **and** the word “lane” painted in white;
- It is an offence to stop or park in an exclusive bicycle lane. However, the sole use of the bicycle pavement symbol without the word “LANE” underneath (refer to RTC and AS 1742.9) does not create an exclusive bicycle lane.
- As stated in AS 1742.9, a bicycle lane pavement symbol can be utilised instead of the equivalent bicycle lane sign (R7-1-4) to formalise a bicycle lane.

6.2.5 Use of bicycle pavement symbols on local roads



Figure 6.18 Bicycle pavement symbols applied in a residential local road environment (Boscombe, UK)

Guidance:

- Bicycle pavement symbols may be considered on local roads which form part of the Department of Transport’s Long Term Cycling Network (LTCN).
- When used on local streets, bicycle pavement markings shall be installed in the middle of the carriageway, between the wheel spacings of the vehicles (Refer to AS 1742.9 for the size of the bicycle pavement symbol).

6.3 WAYFINDING MARKINGS

Wayfinding triangles (and other similar road markings) are used to enhance safety for people cycling on local roads.

The markings serve several purposes, including:

- Assisting people cycling with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side;
- Assisting people cycling with lateral positioning away from on-street parking;
- Encouraging safe overtaking of people cycling by motorists; and
- Assisting people cycling with wayfinding.

Guidance surrounding the implementation wayfinding markings is provided below.

6.3.1 Bicycle pavement symbol with wayfinding triangles



Figure 6.19 - Application of wayfinding triangles (Ambrose Street, Innaloo)

Guidance:

- Main Roads supports the use of a wayfinding triangle as shown in Figure 6.20.
- Engineering judgement should be used in determining appropriate spacing for wayfinding triangles.
- For guidance on the size and positioning of wayfinding triangles, refer to Main Roads Standard Drawing (in development).

6.4 SIGNS TO SUPPORT ON-ROAD CYCLING WITHOUT EXCLUSIVE BIKE LANES

Roads throughout Western Australia are often used by people cycling. In many instances, these roads are not afforded dedicated bicycle facilities (i.e., bicycle lanes, sealed shoulders, or off-road paths). As such, signage can be considered to increase awareness that people cycling might be on the road. Local Governments can install warning signs on local roads.

6.4.1 Share the road signage



Figure 6.20 - Share the road sign (MR-GC-14)

Guidance:

- “Share The Road” signage serves as a visual reminder to motorists to be aware of people cycling and to provide sufficient lateral space when overtaking.
- It can be applied to roads without sealed shoulders that serve as popular bicycle routes (Refer to Main Roads standard drawing 9631-1005).

6.4.2 Bicycle warning signage



Figure 6.21 - Bicycle warning sign on a rural road (Bussell Highway before Frances Road, Dalyellup)



Figure 6.22 - Bicycle warning sign



Figure 6.23 - Bicycle warning sign supplementary plates

Guidance:

- This sign may be used to warn motorists of the presence of bicycles on the road where people cycling are likely to come into conflict with motor traffic and are potentially at risk.
- The supplementary plates shown in Figure 6.24 may be used with the sign where appropriate.
 - W8-23 plates should be used where a bicycle trail crosses a road.
 - W8-17 plates should be used where a bicycle trail joins a road for a specified distance.

7 REFERENCES AND RELATED DOCUMENTS

Signs and Pavement Markings for on-road cycling facilities at midblock and unsignalised intersections shall generally be in accordance with the documents outlined below.

Document Number	Description
	Main Roads Specification 604 Pavement Marking
	DoT Active Transport
	Guide to Road Design Part 3: Geometric Design (2021)
	Guide to Road Design Part 4: Intersections and Crossings – General (2021)
	Guide to Road Design Part 4a: Unsignalised and Signalised Intersections (2021)
	Guide to Road Design Part 6a: Pedestrian and Cyclist Paths (2021)
	Guide to Traffic Management Part 5 (2020)
	Guide to Traffic Management Part 7: Activity Centre Transport Management (2020)
	Cycling Aspects of Austroads (2017)
	Towards Safe System Infrastructure (2018)
AS1742.9	Bicycle Facilities
AS1742.2	Manual of Uniform Traffic Control Devices