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Policy and Application Guidelines

Signage and Pavement Marking on Paths

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Policy and Application Guidelines Signage and Pavement Marking on Paths

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Authorisation

As Manager Traffic Management Services, I authorise the issue and use of these Policy and Application Guidelines for Signage and Pavement Marking on Paths in Western Australia



MANAGER TRAFFIC MANAGEMENT SERVICES

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1 PURPOSE

The purpose of this document is to outline Main Roads requirements for the provision of traffic signs and pavement markings on paths in Western Australia.

2 SCOPE

This document applies to all paths within Western Australia that are either under state or local government control.

3 ROLES AND RESPONSIBILITIES

Role	Responsibility
Manager Traffic Management Services	Approve
Traffic Technical Services Manager	Edit

4 DEFINITIONS

Term	Definition
AS	Australian Standard
ASD	Approach Sight Distance
SISD	Safe Intersection Sight Distance
Bicycle	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)
Bicycle Path	A path set aside for the exclusive use of bicycle riders. (See <i>Road Traffic Code 2000</i>)
Disability Discrimination Act	The Australian Disability Discrimination Act 1992
DoT	Department of Transport
Separated Path	A path signed for separated use on which bicycle riders and pedestrians are required to use separate designated areas.*
Shared Path	An area that is open to the public that is designated for use by both bicycle riders and pedestrians.
Main Roads	Main Roads Western Australia
Traffic Sign	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 or path.
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.

Term	Definition
Path	Any route intended for use by pedestrians or bicycle riders or both, which is not part of a road and which may or may not be adjacent to a road.
Path Terminal Treatment	A treatment that prevents unauthorised vehicles entering a path such as bollards, grab rails or solid street furniture creating a narrow access.
Principal Shared Path (PSP)	A shared path, which is built to MRWA PSP standard and is under the care, control and management of the Commissioner of Main Roads, these are commonly referred to as Principal Shared Paths. PSP's perform a Primary Route function in the bicycle network.
Primary Route	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.
Secondary Route	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.
Local Route	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.
Pedestrian	Any person on foot or in a pram, using a wheelchair, or pushing a bicycle. Refer to <i>Road Traffic Code 2000</i> for further examples.
PTA	Public Transport Authority
Rider	A person riding or driving a bicycle but does not include a person walking beside and wheeling a bicycle.
WA Bicycle Network Plan (WABN)	Includes the Western Australian Bicycle Network (WABN) Plan 2014-31 and subsequent updates. Outlines a vision to make Western Australia a place where cycling is safe, connected, convenient and a widely accepted form of transport.

*Refer to *Road Traffic Code 2000* for specific definitions.

5 LEGAL INFORMATION

The *Road Traffic Code 2000 (Regulation 297)* provides the Commissioner of Main Roads with the sole power to erect, establish, display, alter and take down road signs, traffic control signals and road markings. These powers have been delegated and, with the exception of parking signage state wide and warning signage in regional areas, these powers rest with Main Roads.

As a consequence relevant Road Authorities must comply with this delegation and obtain the required approvals from Main Roads prior to installing signs and pavement markings on paths.

6 APPLICATION

The provision of traffic signs and pavement markings in Western Australia should be in accordance with Main Roads Policy and Guidelines, Australian Standards, and wherever practical, Austroads Guidelines.

Main Roads has developed a number of signs complementary to the Australian Standard to provide for additional signing requirements. These signs are listed in the Main Roads Index of Signs. Non-standard signs shall not be used without prior approval from the Manager Road and Traffic Engineering.

The minimum requirements for traffic signs and pavement markings on paths in Western Australia shall be determined in accordance with Section [6.1](#). These requirements are in line with the Western Australian Cycling Network Hierarchy which designates routes by their function (i.e., Primary, Secondary and Local Routes), rather than built form. Function considers to the type of activities that take place along a route, and the level of demand (existing and potential). If a particular cycle network has not been classified in accordance with the WA Cycle Network Hierarchy, please refer to the definitions above ([Section 4](#)) to determine the most appropriate route classification applicable to the path you are signing.

It should be noted that the *Road Traffic Code 2000* allows for bicycle riders of any age to use any path unless signage specifically prohibits bicycle riding. Therefore no regulatory signage is needed on paths (including PSP's) to designate that bicycle riders can use the path.

Pavement markings, where permitted, are preferred over signs.

6.1 Minimum Signing and Pavement Marking Requirements

Regulatory pavement marking, including separation and edge lines are recommended for paths located on Primary Routes (including PSPs). In general, regulatory signs and pavement markings are not required for all other path types. However, the Road Authority responsible for a path may apply to Main Roads for approval for signs and/or pavement markings in situations where there is a demonstrated need and the installation of signs and/or pavement markings would have a significant safety benefit.

7 APPROVAL AND INSTALLATION

7.1 Application and Approval

Applications for approval for installation, maintenance and/or removal of signs and pavement markings for paths shall be submitted in writing by the proponent to:

- The Traffic Management Services Branch for paths in the Metropolitan Region; or
- The Regional Manager for the relevant Main Roads Regional Office.

The application must include a plan of the path detailing proposed and existing signs and pavement markings.

7.2 Installation and Maintenance

Subject to approval, the organisation responsible for the care and control of the path shall have the responsibility for the installation and maintenance of signs and pavement marking on that path

Signs and pavement markings for paths shall be installed in accordance with the requirements set out in Main Roads Specifications 601 and 604, Main Roads standard drawings, and relevant Australian Standards.

Main Roads Specification 601 specifies the Main Roads requirements for the manufacture, delivery, installation and maintenance of all regulatory, warning, guide, freeway guide, direction, temporary works, hazard marker signs, sign supports and associated fixings.

Main Roads Specification 604 specifies the minimum requirements for the supply, installation and maintenance of road pavement markings inclusive of raised reflective pavement markers.

Pavement markings and signs need to be visible and effective for all likely conditions and maintained to Main Roads Luminance and skid resistance specifications. Redundant signs and pavement markings should be removed.

A list of typical signs and pavement markings for use on paths is given in [Appendix A](#).

Main Roads Policy and Guidelines shall apply where they differ from Australian Standards or Austroads.

8 TECHNICAL GUIDELINES

The purpose of this section is to provide technical guidelines for the provision of signs and pavement markings on paths in each of the following broad categories.

The minimum requirements for the provision of pavement marking and signs on paths in Western Australia shall be determined in accordance with [Section 6.1](#).

Regulatory control signage / pavement marking shall only be installed as per the warrants provided in [Section 8.2.1](#) or [8.2.2](#)

The use of pavement markings on paths is the preferred type of control device. Signs should only be used where a particular safety issue has been identified that provides justification that the use of a sign will be more effective than a pavement marking.

Where visibility is limited due to the presence of an obstruction that can be removed (e.g. landscaping), attempts should be made to remove the obstruction rather than installing Stop controls.

For details on assessment, reference should be made to [Figure 1](#). Allowance should be made for the requirements of both adult and child cyclists as illustrated.

8.1 General Pavement Marking Requirements

8.1.1 Broken Separation Lines

Broken separation lines will be installed on sections of path where pavement marking has been recommended in [Section 6.1](#) and where the sight distance is greater than 40m.

Broken separation lines should continue through intersections and should be used to delineate the through route.

8.1.2 Unbroken Separation Lines

Unbroken separation lines will be installed on sections of paths where pavement marking has been recommended in [Section 6.1](#) and;

- (a) where the sight distance is less than or equal to 40m; or
- (b) where the section of path is a terminating leg on the approach to an intersection with another path or a road carriageway and the terminating leg has Stop or Give Way control (in which case an unbroken separation line with a minimum length of 10m is required); or
- (c) in situations where there is evidence of a large number of riders crossing a broken separation line and endangering themselves and other path users.

Unbroken separation lines shall extend over the length of the path in question where the sight distance is less than or equal to 40m. and “Keep Left” markings (refer Main Roads Drawing 201131-0075) will be installed on the left side of the carriageway at the commencement of the unbroken separation line, except where the unbroken separation line is installed as per the minimum requirements of clause 7.1.2 (b).

It is acceptable to join individual sections of unbroken separation line together to form a single unbroken separation line in situations where the distance between the end of one unbroken line is less than 20m from the start of the next unbroken line.

Unbroken separation lines should not be continuous through intersections and should be used to delineate the through route.

8.1.3 Edge Lines

Edge lines will be installed on sections of path where edge lines have been recommended in Section [6.1](#) to delineate the edge of the through lane.

Notwithstanding the above, edge lines should not be installed on paths <3m in width.

Edge lines where applicable at T-intersections shall continue only on one side of the through route (opposite side to the terminating leg)

Edge lines where applicable will either taper on the approaches and exits to the paths or shall continue around connecting into the pavement marking for the intersecting path.

8.2 Regulatory Signs and Pavement Marking Requirements

8.2.1 Stop Control and Stop Lines

Stop pavement markings shall be applied on the path or Stop signs shall be installed where:

- the sight distance from the terminating path is less than 20m in either direction as shown in [Figure 1](#); and
- the obstructions to sightlines cannot be removed; and
- the terminating path does not have a clearly visible path terminal treatment at the end.

Crashes, near misses and/or speeding issues are not grounds for Stop control.

Stop lines shall only be installed in conjunction with ‘STOP’ pavement markings / signs.

Where Stop signs are installed, they should be located as close as possible to the Stop line, ensuring the stop signs are visible to path users.

Stop signs shall only be used in situations where they will not be mistaken as applying to an adjacent road.

Where paths meet to form a 4-way intersection, only the legs that are not part of the predominant through route will require regulatory control.

If either leg requires Stop control then Stop control will be applied to both stop controlled legs.

If neither leg meets the requirements for Stop control, then Give Way control with Give Way signs or pavement markings shall be applied to both terminating legs.

For advance warning pavement markings or signs, refer to section [8.3](#).

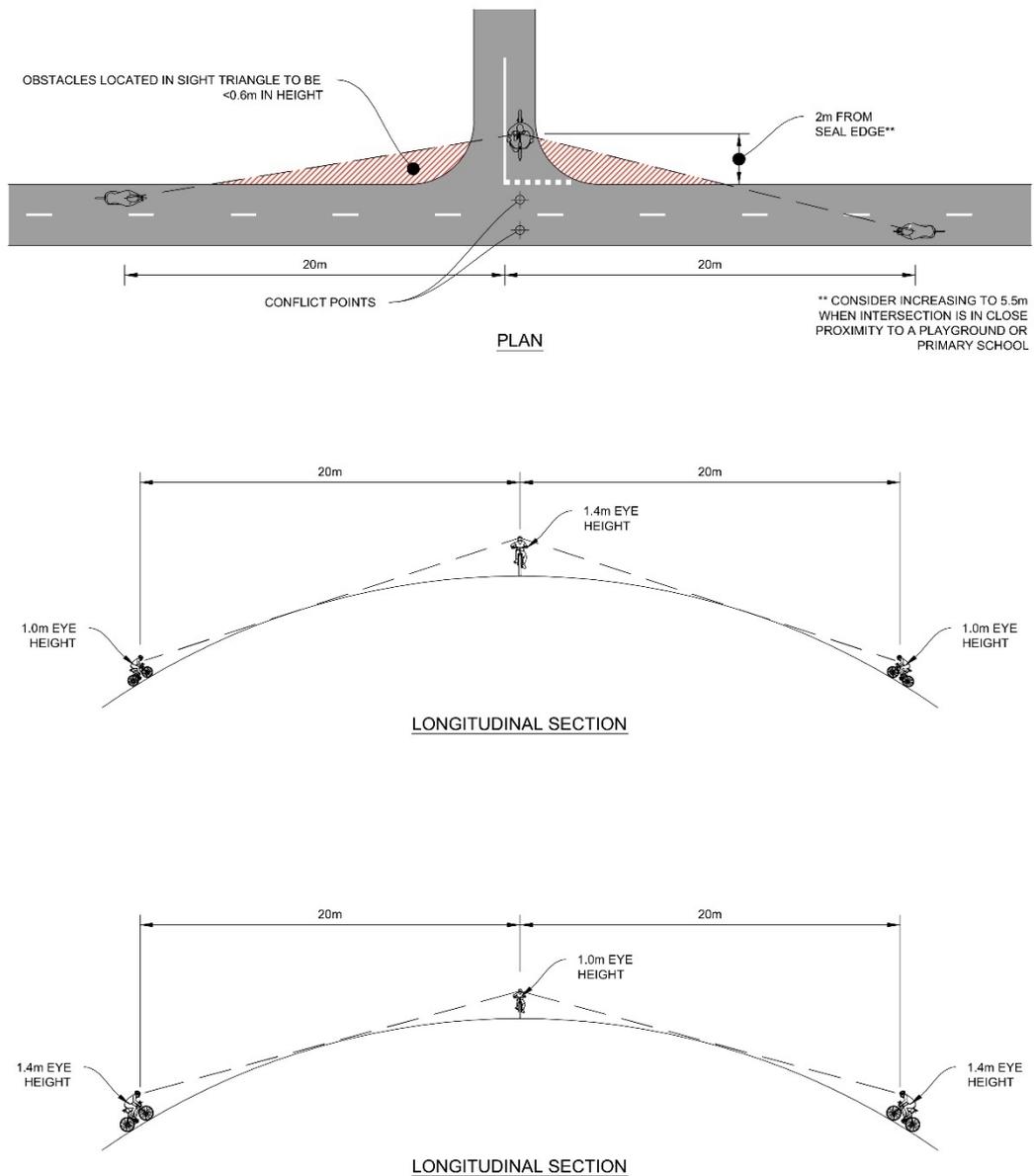


Figure 1: Sight Distance (SD) measurement method

8.2.2 Give Way Control and Give Way Lines

Give Way lines may be installed without installing a corresponding 'GIVE WAY' pavement marking and / or sign.

'GIVE WAY' pavement markings / signs shall be installed in conjunction with Give Way lines.

Give Way pavement markings applied on the path or signs (pavement markings are preferred) shall only be installed where:

- intersections on Primary Routes do not have either a stop control or a path terminal treatment at the end, Or
- either the right of way is not easily evident to approaching path users or, there is no path terminal treatment at the end, Or
- where a path crosses a road carriageway at grade.

Where Give Way signs are installed, they should be located as close as possible to the Give Way line, ensuring the give way Give Way signs are visible to path users.

Give Way signs shall only be used in situations where they will not be mistaken as applying to an adjacent road.

Where paths meet to form a 4-way intersection, only the legs that are not part of the predominant through route will require regulatory control.

For advance warning pavement markings or signs, refer to section [8.3](#).

8.2.3 Path Designation Pavement Marking/Signage

There are several instances where paths are designated for a particular user group. This includes separated paths, bicycle only paths and shared paths.

It should be noted that pavement marking and signage is not required to designate a shared path in Western Australia.

8.2.3.1 Separated Path

Pavement markings or signs legally designating a path as a "separated path" are required at all extents of the section of separated path, as well as on the departure sides of any intersecting path.

Use of "separated path" signs may be considered where it is deemed necessary and does not pose a hazard to path users.

On separated paths, bicycle riders and pedestrians should also be separated either by a longitudinal line, raised separator, physical separation or by use of contrasting pavements surface treatments.

Signage or pavement markings legally designating a separated path shall be installed at the extents of the separated area and immediately after each road or path crossing.

8.2.3.2 Bicycle Path

Signs or pavement markings designating a path as a “bicycle path” are required at:

- both extents, commencement and termination, of the section of bicycle path;
- intersections with other paths;
- immediately after each road crossing and
- longitudinal intervals of not more than 500m (as designated in AS1742.9).

Signs legally designating the end of a bicycle path shall be installed at the extents of the area designated for bicycles only, unless the bicycle path ends at a carriageway. Signs may take the form of (refer [Appendix A](#)):

- end bicycle path signs or end bicycle path pavement markings (preferred), or
- regulatory signs or pavement markings designating the continuation of the path as a different type of path.

8.2.3.3 Shared Paths

The *Road Traffic Code 2000* allows bicycle riders of any age to legally share any path unless bicycle riding is specifically prohibited by regulation. Therefore, the shared path sign and pavement marking are not required.

Shared path pavement markings are to be used on paths designated as a Primary Route (including all PSP's) to highlight a higher order path. The shared path pavement marking should only be applied when another path joins the through route of the Primary Route or where the path crosses a carriageway and not at any mid-block locations. Shared path pavement markings may also be installed on secondary routes at the request of the relevant road authority.

8.3 Warning Pavement Marking/ Signage Requirements

8.3.1 Advance Warning on Through Routes

Side Junction Ahead warning pavement markings should be located approximately 20m from the centreline of intersecting paths under Stop control (refer [Figure 2](#)).

8.3.2 Stop Advance Warning on a Terminating Leg (if criteria met at 8.2.1)

Advance “Stop Ahead” warning pavement markings or signs shall be installed on both approaching legs of the path and the terminating leg of a path if the ASD is less than 20m and shall be measured from an eye height of 1.4m (refer [Figure 2](#)).

Stop Ahead warning pavement markings should be located approximately 20m from the Stop line.

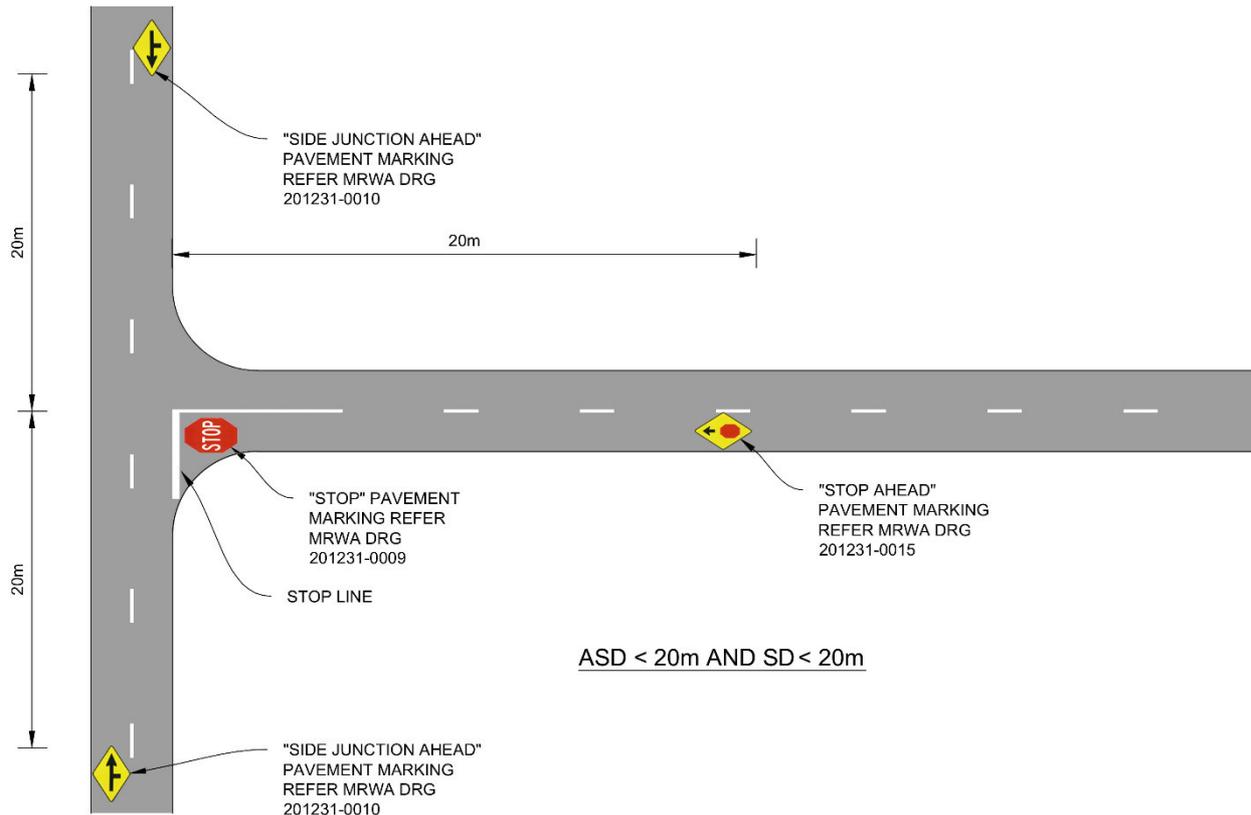


Figure 2: Form of Stop Control on Paths

Section 8.2 shall be used to determine the type of regulatory control that is appropriate for path intersections.

8.3.3 Give Way Advance Warning on a Terminating Leg (if criteria met at 8.2.2)

An advance warning pavement marking or sign shall be installed on the terminating leg if the proposed Give Way pavement marking or sign is not visible from a distance of 20m.

Give Way Ahead warning pavement markings or signs should be located approximately 20m from the Give Way line (refer [Figure 3](#)).

At 4-way intersections, each leg that is under give way control shall be independently checked to determine whether advance warning is required.

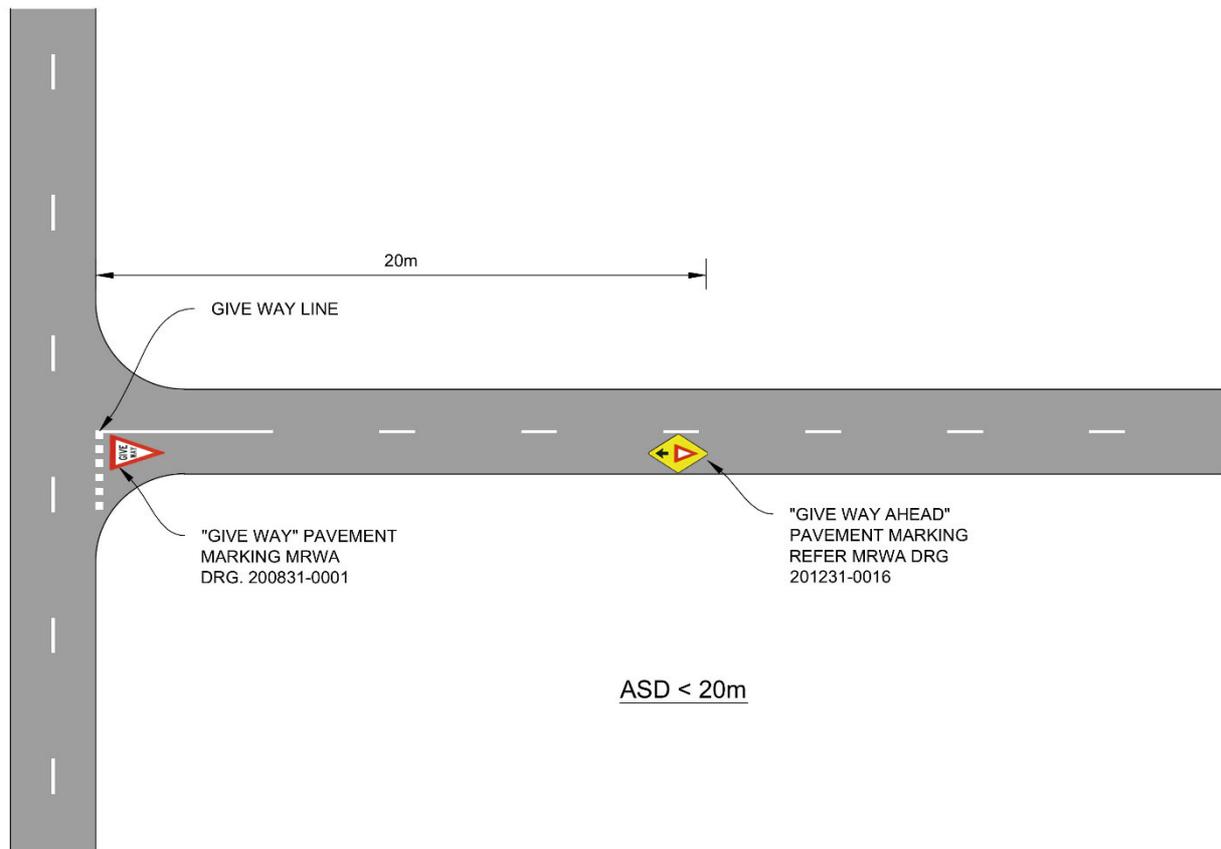


Figure 3: Form of Give Way Control on Paths

8.3.4 Yellow Diamond Pavement Markings

Elongated Yellow diamond warning pavement markings that comply with AS1742.3 can be installed to highlight approaching permanent hazards to path users. Typical Yellow Diamond Pavement Markings are shown in [Appendix A](#).

8.3.5 Yellow Diagonal Marking

Yellow cross hatch box markings are used to designate where maintenance and service vehicles cross primary routes. These markings can be installed adjacent to railway lines where the PTA may need to allow vehicles to access the railway. The markings also highlight to drivers crossing the path that they should not stop at that location to avoid blocking the path.

In this situation, yellow cross hatch box pavement marking should be used that are 300mm in width and that have a 600mm gap between diagonal lines. Pavement marking should be installed at a 45-degree angle.

8.3.6 One Way Bike Path

Along with installing bicycle pavement markings to designate the path is for bicycle use only, the addition of a direction arrow is required. The arrow ensures that users know which direction they must travel (refer drawing 200531-0009).

8.3.7 Pavement Messages

Warning messages for path users can be applied in advance of permanent hazards. Each message uses black writing on a yellow box as described below:

i) SLOW DOWN

The “Slow down” message may be used when the path ahead has a permanent hazard or conditions require path users to travel at a slower speed than would normally be expected. Hazards and conditions may include approaching high pedestrian areas or very narrow or restricted visibility areas.

ii) ROAD AHEAD

The “Road Ahead” message may be used when a path is approaching a road, where the ASD to the road is less than 20m or the path has not had any interruptions for an extended distance (such as distance exceeding 1.5km in length) as bicycle riders may not expect to give way or stop.

iii) CARS X-ING AHEAD or PEDS X-ING AHEAD

“Cars Xing Ahead” or “Peds Xing Ahead” messages may be used when path users may not necessarily be aware of cars or pedestrians crossing the path. Note that if the path is approaching a road crossing, the “Road Ahead” message should be used.

These warning messages are illustrated on Main Roads Drawing 200731-0072.

8.3.8 Interface Treatments

An interface treatment using the “shared zone” pavement marking and green surface treatment can be used to highlight an area of a path that has a significant change in use or the potential for pedestrians to either cross or join onto the path. For example, a railway station with access across or onto the path or a location where pedestrians congregate to cross an adjacent road. The treatment may also be used where a path hazard requires users, both pedestrians and bicycle riders, to use a narrower section of path or a section of path with reduced sight lines.

The “Shared Zone” wording may be used in combination with a green surface treatment to highlight the change in conditions (Refer to Main Roads Drawing No. 201431-0040).

Warning (rumble) strips may also be used on the approach to locations where pedestrians are crossing a path.

8.3.9 Pavement Markings for Landings

Landings are flat areas created on steep grades to allow path users with a disability to more easily be able to use the path. Landings shall be used in locations where gradients are above 3% on paths that accommodate both pedestrians and bicycle riders. It should be noted that on bicycle only paths, these landings are not required.

Piano key markings should be applied at all landings where bicycle riders have access. Where ASD is less than 20m on a downhill approach to the initial landing then the addition of a ‘BUMP’ warning pavement marking should be used (See Main Roads standard drawing. 201131-0071).

8.4 Bicycle Directional Signs

Refer to Main Roads Policy and Technical Guidelines for Bicycle Directional Signage.

9 VARIATIONS TO THIS POLICY

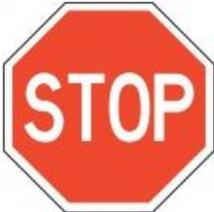
These guidelines may be varied for specific purposes or situations, as required, by the Manager Traffic Management Services.

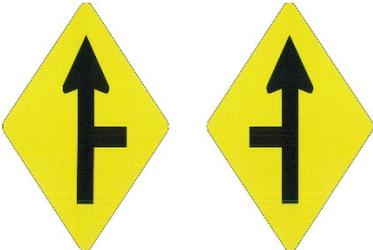
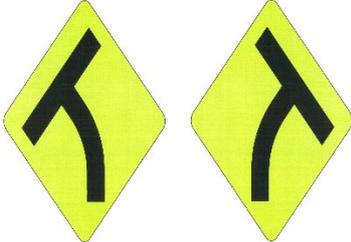
10 APPENDICES

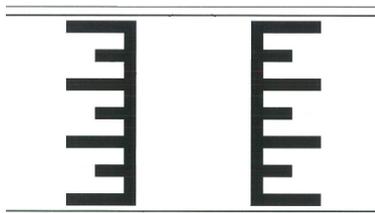
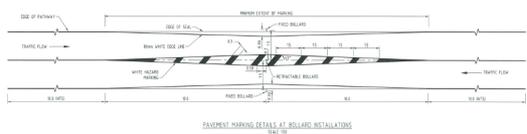
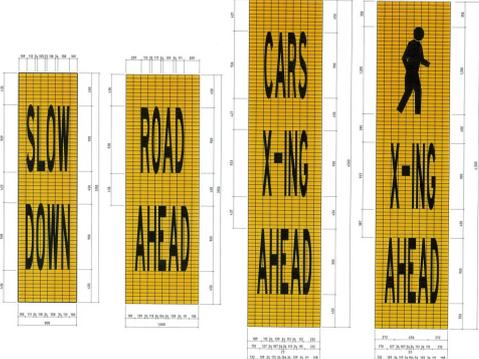
Appendix	Title
Appendix A	Signs and pavement markings on paths
Appendix B	References and Related Documents

Appendix A – Signs and pavement marking on path

<p>No bicycles sign</p>  <p>R6-10-3</p>	<p>No bicycles pavement marking</p>  <p>Main Roads Drawing 201331-0060</p>
<p>Bicycle path sign</p>  <p>R8-1</p>	<p>Bicycle path pavement marking</p>  <p>Main Roads Drawing: 201331-0058</p>
<p>End bicycle path sign</p>  <p>R8-1 R7-4</p>	<p>End bicycle path pavement marking</p>  <p>Main Roads Drawing: 201331-0058</p>
<p>Shared path pavement marking (only for use at side path junctions)</p>  <p>Main Roads Drawing: 201331-0070</p>	

<p style="text-align: center;">Separated Path signs</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>R8-3(L)</p> </div> <div style="text-align: center;">  <p>R8-3(R)</p> </div> </div>	<p style="text-align: center;">Separated Path pavement markings</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>ONLY</p> </div> <div style="text-align: center;">  <p>ONLY</p> </div> </div> <p style="text-align: center;">Pedestrian 201331-0059 Bicycle 201331-0058</p>
<p style="text-align: center;">End Separated Path sign</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>R8-3(L) R7-4</p> </div> <div style="text-align: center;">  <p>R8-3(R) R7-4</p> </div> </div>	<p style="text-align: center;">End Separated Path pavement markings</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>ONLY</p> <p>END</p> </div> <div style="text-align: center;">  <p>ONLY</p> <p>END</p> </div> </div> <p style="text-align: center;">Main Roads Drawing: refer to separated path pavement markings drawings.</p>
<p style="text-align: center;">Stop sign</p> <div style="text-align: center;">  <p>R1-1A</p> </div>	<p style="text-align: center;">Stop pavement marking</p> <div style="text-align: center;">  <p>Main Roads Drawing 201231-0009</p> </div>

<p>Give Way sign</p>  <p>R1-2A</p>	<p>Give Way pavement marking</p>  <p>Main Roads Drawing 200831-0001</p>
<p>T-junction pavement marking</p>  <p>Main Roads Drawing 200831-0005</p>	<p>Stop Ahead pavement marking</p>  <p>Main Roads Drawing 201231-0015</p>
<p>Keep Left pavement marking</p> <p>KEEP LEFT</p> <p>Main Roads Drawing 201131-0075</p>	<p>Give Way Ahead pavement marking</p>  <p>Main Roads Drawing 201231-0016</p>
<p>Side Junction pavement marking</p>  <p>Main Roads Drawing 201231-0010</p>	<p>Curved T-junction pavement marking</p>  <p>Main Roads Drawing 201431-0010</p>

<p>Shared Zone pavement marking</p>  <p>Main Roads Drawing 201431-0040</p>	<p>Pedestrian / Cyclist at Junction pavement marking</p>  <p>Main Roads Drawing 201531-0086</p>
<p>Bump pavement marking</p>  <p>Main Roads Drawing 201131-0070</p>	<p>Pavement markings for Landings</p>  <p>Main Roads Drawing 201131-0071</p>
<p>Bollard pavement marking</p>  <p>Main Roads Drawing 200531-0008</p>	<p>Pavement marking messages</p>  <p>Main Roads Drawing 200731-0072</p>

Appendix B – References and Related Documents

Document Number	Description
	AS 1742.1
	AS 1742.9
	Austroads to Road Design Part 6A
	MRWA Supplement to Austroads Guide to Road Design – Part 6A
	Road Traffic Code 2000
	DoT Shared Path Guidelines