

Operational Instruction

2.15

Overtaking Lanes



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TRAFFIC MANAGEMENT Operational Instructions

Overtaking Lanes - 2.15

AMENDMENT RECORD

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1	5-9	08/01	Updated Section 2 and 6	BZ
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3	9-20	08/07	Merge arrows and sign change	CT
4	10-20	11/06/10	Sign change to Merge Right	CT
5	All	11/08/16		VV
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1. Scope

This Operational Instruction provides guidance to DIT personnel and contractors for the signing and delineation of overtaking lanes. It should be read in conjunction with and the Australian Standard *AS 1742.2 Manual of Uniform Traffic Control Devices Part 2: Traffic Control Devices for General Use*.

For design guidance, refer to the Austroads *Guide to Road Design Part 3 – Geometric Design (GRD)*. The Operating Speed should be assumed to be 10 km/h above the posted speed limit for the road. If the designer cannot provide this the overtaking lane lengths specified in the guide due to site constraints, this will need to be documented within the EDD/departure process as per the DIT Master Specification.

The selection of appropriate locations for overtaking lanes in terms of the strategic importance to improving overtaking opportunities along a particular route is not covered in this document. Slow vehicle turnouts are also not covered.

2. Background

Overtaking lanes in South Australia are often constructed in flat terrain and on high speed roads, with often little speed differential between an overtaking vehicle and the vehicle being overtaken. As a result, the safety of the merge area is very important. This Operational Instruction has additional signage to that specified in *AS 1742.2 MUTCD Part 2: Traffic Control Devices for General Use* in the merge area.

3. Signs

The signing detailed in this section is based on Australian Standard *AS 1742.2 MUTCD Part 2: Traffic Control Devices for General Use* with additional signs for application in South Australia shown on Figure 3.1 and detailed below.

3.1 Advance Warning Signs

Advance warning of an overtaking lane is given through the use of the G9-38 'OVERTAKING LANE x km AHEAD' and G9-37 'OVERTAKING LANE x m AHEAD' signs, as shown in Figure 3.1.



G9-38

The **OVERTAKING LANE x km AHEAD** (G9-38) sign is used to encourage drivers not to “push” to overtake but wait for the opportunity provided by the overtaking lane and should be placed in advance of a section of road prior to an overtaking lane which does not provide adequate safe overtaking opportunities.

This may be as close as 3 km or as far as 5 km prior to the overtaking lane, depending on the road alignment and traffic conditions. Typically 5 km (3.5 minutes at 90 km/h) should be used where overtaking opportunity is not significantly restricted prior to the lane.

Installing a G9-38 sign more than 5 km in advance should be avoided as more than 3.5 minutes of travel may not be considered acceptable and drivers are likely to continue looking for other overtaking opportunities.

Advance warning of overtaking lanes should not be given in advance of a town or significant commercial roadside facility where a change in speed limit and interaction with other traffic may remove the need to overtake. In this instance a G9-38 sign should be placed shortly after the town.



G9-37

The **OVERTAKING LANE 300 m AHEAD** (G9-37) sign shall be placed nominally 300 m in advance of the start of the diverge taper. Where the sign cannot be accommodated at this location the sign may be placed further in advance of the lane and the legend changed accordingly.

3.2 Treatment near an Intersection

If an overtaking lane develops immediately after an intersection or access and that intersection or access has an exclusive acceleration lane leading into the overtaking lane, then a continuous 50 m line shall be used at the start of these lanes to separate the acceleration lane and through lane.



R6-29

The **KEEP LEFT UNLESS OVERTAKING** (R6-29C) signs shall be installed where the continuous line terminates, and the **OVERTAKING LANE 300m AHEAD** sign (G9-38) **must not** be installed as this may cause confusion to some drivers who believe that the intersection or access forms part of the taper of the overtaking lane.

3.3 Start of Overtaking Lane (Diverge area)



R6-29

A **KEEP LEFT UNLESS OVERTAKING** (R6-29C) sign shall be placed at the start of the diverge area, as shown in Figure 3.1.

3.4 End of Overtaking Lane (Merge Area)



W4-9



W8-5



W8-15

A **LEFT LANE ENDS** (W4-9C) sign supplemented with a **500 m** (W8-5C) distance plate on the left side of the road shall be placed 500 m prior to the start of the merge taper.

Duplicated **LEFT LANE ENDS** (W4-9C) signs supplemented with a **250 m** (W8-

5C) distance plate on the right side of the road and a **MERGE RIGHT** (W8-15C) plate on the left side of the road shall be placed 250 m prior to the start of the merge taper.



G9-73

A **MERGE RIGHT** (G9-73B) sign shall be installed on the left side of the road at the start of the merge taper.

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3.5 Non Overtaking (Single Lane) direction



W4-10

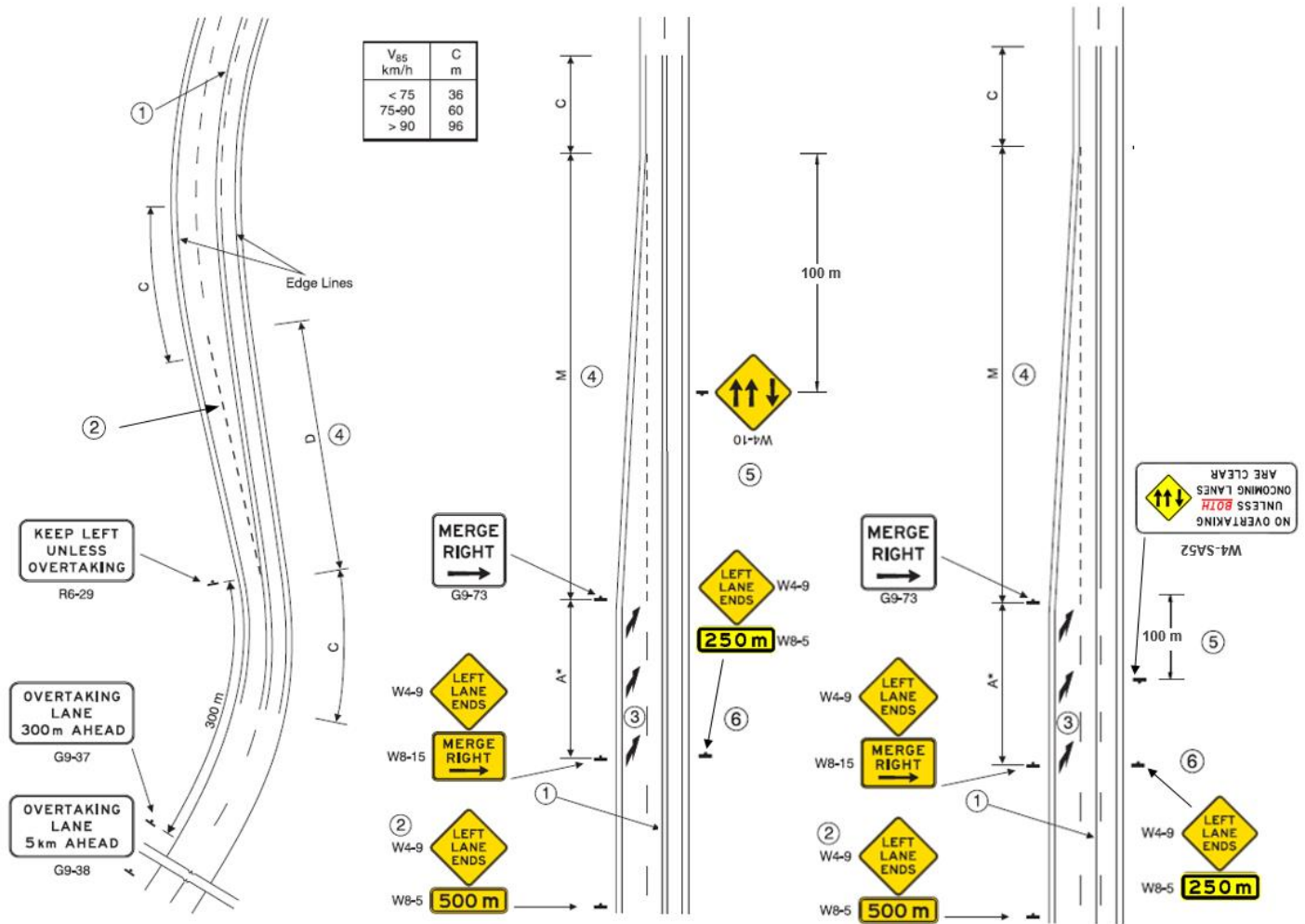
A **LANE ALLOCATION** (W4-10C) sign shall be installed 100 m from the end of the merge taper on the non-overtaking lane approach when overtaking is not permitted for traffic travelling in this direction. Refer Figure 3.1(b) and Section 4.4.



W4-SA52

However, on overtaking lanes in high-speed level terrain environments where overtaking is permitted in the non-overtaking (or single) lane direction, the **LANE ALLOCATION** sign (W4-10C) **shall not** be used.

Instead, the **NO OVERTAKING UNLESS BOTH ONCOMING LANES ARE CLEAR** (W4-SA52) sign shall be installed approximately 100 m after the end of double barrier lines wherever they terminate on the overtaking lanes (refer to Figure 3.1(c) and Section 4.4).



(a) Diverge treatment (b) Merge treatment
(no overtaking in single lane direction) (c) Merge treatment
(overtaking permitted in single lane direction)

Notes:

1. A double barrier line is required if warrants for a no-overtaking zone are met in the single lane direction. It should also be considered if the overtaking lane section is on a curved alignment even though overtaking sight distance is available. Refer to AS 1742.2 (2009) Clause 5.3.3. Also refer Note 5 for appropriate sign for the single-lane direction traffic.
2. Continuity line parallel to edge line
3. Typical pavement arrow arrangement for merge area. Refer DIT Pavement Marking Manual Part C Section 3.4.8.2 for A*
4. M and D are the merge and diverge distances calculated in accordance with the Austroads Guide to Road Design Part 3
5. For the single lane direction, if overtaking is not permitted along the full length of the overtaking lane, a double barrier line is installed, and the W4-10C sign is installed at the end of the merge taper. If overtaking is permitted in the single lane direction, the W4-10C sign is omitted and the W4-SA52 sign is installed approximately 100 m after the end of the double barrier line.
6. Duplicated W4-9C signs shall be installed at the start of the merge taper. On the left side of the road, this shall be supplemented with the W8-15 sign. On the right side of the road, this shall be supplemented with the W8-5C (250 m) sign.

Figure 3.1: Overtaking lane signs and pavement marking

(adapted from AS 1742.2 (2009) and Queensland Government's MUTCD Part 2 (2018))

4. Pavement Marking

The pavement marking detailed in this section is based on Australian Standard *AS 1742.2 MUTCD Part 2: Traffic Control Devices for General Use*. Pavement marking shall be installed in accordance with the *DIT Pavement Marking Manual*, Figure 3.1 and as detailed below.

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4.1 Start of Overtaking Lane (Diverge area)

The edge lines and continuity line at the diverge area should be marked to give the appearance of a smooth transition to the left, possibly using large radius curves rather than a sudden direction change on the line marking.

If an overtaking lane develops immediately after an intersection or access and that intersection or access has an exclusive acceleration lane leading into the overtaking lane, then a continuous 50 m line shall be used at the start of these lanes to separate the acceleration lane and through lane.

4.2 End of Overtaking Lane (Merge area)

Through the merge area a continuity line shall extend from the lane line to meet the edge line where the road width returns to normal.

4.3 Merge Pavement Arrows

Merge pavement arrows shall be installed at the merge area as shown on Figure 3.1 and the *DIT Pavement Marking Manual Part C Section 3.4.8.2*.

4.4 Dividing Line Treatment

Generally, separation between the overtaking (dual) lane and non-overtaking (single) lane direction shall be provided with either a double (one-way) barrier line or double (two-way) barrier line. Where double (one-way) barrier line is used, the continuous line shall be marked on the dual lane side for the full length of the overtaking lane. Refer Figure 3.1 Note 1.

Where necessary due to vertical or horizontal site restrictions overtaking may be prohibited from the non-overtaking lane direction by the provision of a double two-way barrier line along the full or partial length of the lane. To determine the need for this restriction it will be necessary to conduct a "barrier line survey" immediately after construction of the overtaking lane. Refer to *AS 1742.2 (2009) Clause 5.3.3*.

In any case, a double two-way barrier line should be marked at each merge and diverge taper in accordance with *AS 1742.2*, the *DIT Pavement Marking Manual* and shown as Dimension C in Figure 3.1.

Wide Dividing Line Treatment in accordance with the *DIT Pavement Marking Manual* may be used. Refer to *Austrroads Guide to Traffic Management Part 10: Traffic Control and Communication Devices* and *Austrroads Guide to Road Design Part 3: Geometric Design*.

5. Retro Reflective Pavement Markers (RRPMs)

Retro Reflective Pavement Markers (RRPMs) shall be installed in accordance with Australian Standard AS 1742.2 *MUTCD Part 2: Traffic Control Devices for General Use*, the DIT *Pavement Marking Manual*, and this section.

Where RRPMs are not provided on the approach to an overtaking lane they shall be installed on the dividing line and edge line for a distance of 300 m prior to the start of the diverge taper.

RRPMs shall not be installed on the continuity line on the diverge taper.

RRPMs on the merge area shall be installed in accordance with the DIT *Pavement Marking Manual* Part B Section 2.1.14.10 and Drawing TES 12408 ([https://www.dit.sa.gov.au/contractor_documents/masterspecifications/Roads RD-LM-C3 Appendix 1](https://www.dit.sa.gov.au/contractor_documents/masterspecifications/Roads_RD-LM-C3_Appendix_1)).

RRPMs shall not be installed on the continuity line in the merge taper.

Where RRPMs are not installed on the adjoining section of road leading away from an overtaking lane they shall be continued for a minimum of 300 m from the end of the merge taper on the edge line and dividing line.

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6. Guide posts

The guide posts should be installed at a consistent offset from the edge line through the full length of the overtaking lane and, with the exception of the merge area, at a spacing in accordance with Australian Standard AS 1742.2 *MUTCD Part 2: Traffic Control Devices for General Use*.

Guide posts shall be a flexible type capable of self-recovery.

Guide posts shall be installed at 15 m spacing on the left side of the road through the merge area commencing 60 m prior to the start of the merge taper and terminating 60 m after the end of the taper. On the right side of the road through the merge area they shall be installed at 30 m spacing commencing 60 m prior to the start of the merge taper and terminating 60 m after the end of the taper. Refer to TES 12408 ([https://www.dit.sa.gov.au/contractor_documents/masterspecifications/Roads RD-LM-C3 Appendix 1](https://www.dit.sa.gov.au/contractor_documents/masterspecifications/Roads_RD-LM-C3_Appendix_1)).

Construction techniques may result in a full width widening of the trafficable shoulder along the merge area, which may be sealed. The sealed shoulder widening along a merge taper should not be made readily available to drivers for use as a continuation of the left lane. Guide posts should be placed through the merge area showing the lane termination, even if this requires installing posts within the sealed portion of shoulder.

7. Installation of Signs and Pavement Markings

During construction permanent overtaking lane signs should remain covered using techniques approved by the manufacturer until the final surface treatment and associated line marking is completed.

If at any stage during construction both lanes in the dual lane direction are opened to traffic the guide post and RRPM treatment (temporary reflective markers are suitable for the short term) at the merge area shall be installed.

Care must be taken to ensure that:

- new edge lines of the overtaking lane meet and are continuous with the existing edge lines approaching and leaving the overtaking lane; and
- there is no off-set with the new dividing line and the existing dividing line of the joining road section.

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8. Maintenance Activities on Overtaking Lanes

The line marking and delineation provided at overtaking lanes, particularly at the merge and diverge taper, provide important cues to drivers about when it is safe to commence overtaking and where merging is required. Therefore all line marking and guide posts, particularly the associated reflective devices, must be regularly maintained. It may be necessary to undertake inspection and/or reinstatement or replacement of delineation devices on a more regular basis than would normally be expected for a standard section of road.

8.1 Reseal and Rehabilitation

Reseal or pavement rehabilitation shall be undertaken across the full width of the dual lanes, as a minimum.

Overtaking lanes shall not be left open to traffic in an unmarked state. As a minimum, temporary reflective raised pavement markers shall be installed:

- at 12 m spacing through the diverge and merge and for at least 36 m either side of these areas; and
- at a nominal 50 m to 100 m spacing (depending on road alignment) along the lane line and barrier line for the full length of the overtaking lane.

A minimum of two consecutive markers shall be clearly visible both during the day and at night under low-beam conditions. Where night time delineation cannot be effectively achieved prior to the installation of permanent markings, the overtaking lane signs should remain covered and the separation/barrier line clearly marked with white temporary reflective markers.

At the completion of any major works on an overtaking lane, the end guide post treatment shall be fully reinstated (if they have been disturbed) before the overtaking lane signs are uncovered.