

Concealed Driveways and Intersections

Operational Instruction 2.2

March 2025



Government of South Australia
Department for Infrastructure
and Transport

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Publication details

Document information

Title	Concealed Driveways and Intersections Operational Instruction 2.2
Owner	Traffic Engineering Standards
KNet reference	1585761

Change history

Version	Date changed	Nature of amendment
3	14 December 2010	Original issue approved for use
4	14 September 2018	Combined with OI 2.13
5	23 October 2018	Included reference to Public Roads
6	14 December 2020	Format changes
7	11 March 2025	Format changes, updates reference to Austroads Guide, reference to AS 1742.2 (2022) for warning signs for intersections and concealed driveway signs added; distinguished between driveway and intersection treatments

Approvals record

Approver	Position	Date	Signature
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We acknowledge the Traditional Custodians of the Country throughout South Australia and recognise their continuing connection to land and waters. We pay our respects to the diversity of cultures, significance of contributions and to Elders past, present and emerging.



Contents

1	Introduction	5
2	Definition.....	5
3	Treatments at driveways	5
3.1	Concealed driveway signs.....	6
4	Treatments at intersections	7
5	Convex traffic mirrors	7
5.1	Mirror properties.....	7
5.2	Road safety assessment.....	8
5.3	Limitations.....	8
5.4	Private property access.....	8
5.5	Intersections and single lane roads	8
5.6	Installation and maintenance.....	9
5.7	Funding	9

1 Introduction

This document provides guidance to address sight restriction problems at intersections, junctions, and private property accesses on roads under the care and control of the Department for Infrastructure and Transport (the Department). Councils may also refer to this document for guidance on the use of these signs on their roads.

This document shall be read in conjunction with Australian Standard AS 1742.2 *Manual of Uniform Traffic Control Devices Part 2: Traffic Control Devices for General Use (2022)* Clause 2.9.9 for signs warning of private driveways, and Clause 2.9.2 for signs warning of intersections.

When used in accordance with this Operational Instruction, these traffic control devices may be installed under the Minister's *Instrument of General Approval and Delegation to Council*, or the *Instrument of Authorisation and Delegation* to the Department's Network Management Services. Traffic control devices which vary from this Operational Instruction require the separate approval of the Manager, Traffic Services for each location prior to installation.

2 Definition

A Concealed Driveway is defined as a driveway where a vehicle entering the road network from this driveway cannot be seen by a vehicle approaching for a distance equal to or less than the stopping sight distance. Refer Austroads *Guide to Road Design Part 3: Geometric Design* for details of stopping sight distance.

3 Treatments at driveways

The safety of accesses to the road from private property is generally a matter for Local Government and the rules associated with a driver of the vehicle entering from a public road fall under the *Road Traffic Act* and Regulations. However, the road authority, as the manager of the road network has a responsibility to all road users for the safety of the network.

The following actions should be considered in order to resolve the sight restriction problems at accesses:

- Access relocation
- Turn restrictions
- Road realignment
- Alteration and/or relocation of property fencing
- Vegetation trimming or removal
- Site benching
- Shoulder acceleration and/or deceleration areas
- Convex mirror installation (see Section 5)

It should be noted that it is reasonable to assume that drivers will have an expectation of encountering concealed accesses in low speed geometrically restricted road environments such as urban and hilly

areas. However, as the environment becomes more open, and speeds increase the potential for serious accidents may increase.

In these cases, it is even more important that an effort be made to remedy the sight restriction problems. Wherever possible all reasonable efforts to reduce the hazard should be undertaken, subject to costs being tolerable to stakeholders, prior to resorting to traffic signs.

The Department shall be responsible for the costs associated with any improvements necessary within the carriageway. However, other remedial measures such as access relocation, vegetation clearing, site benching, convex mirror installation etc. are more likely to be the responsibility of the property owner or of the local government authority.

3.1 Concealed driveway signs

Signs on the main road approaches warning of concealed driveways should only be considered as a last resort, as they are not likely to offer any significant safety improvement. Signs directed to the main road traffic can in some instances provide some property owners with a false sense of security by giving the impression that their responsibility to enter the road safely has in some way been reduced. In addition to this, the infrequency of encountering a vehicle entering from a particular private access may also render signing treatments ineffective. The following signs are to be used and the supplementary distance plates W8-17-1 and W8-17-2 may be used if considered appropriate.

Distances shown on the W8-17-1 sign shall be shown in whole kms

Distances shown on the W8-17-2 shall be:

- Up to 500 m – to nearest 100 m
- Between 500 m and 1 km – to the nearest half a km



W5-55-1



W8-17-2



W5-55-2



W8-17-1

4 Treatments at intersections

The Australian Standard *AS 1742.2 Manual of Uniform Traffic Control Devices Part 2: Traffic Control Devices for General Use (2022)* Clause 2.9.2 provides guidance on the use of signs warning of intersections.

The following actions should also be considered in order to resolve the sight restriction problems at intersections:

- Access relocation
- Turn restrictions
- Road realignment
- Alteration and/or relocation of property fencing
- Vegetation trimming or removal
- Site benching
- Shoulder acceleration and/or deceleration areas
- Convex mirror installation (see Section 5)

5 Convex traffic mirrors

The following information provides practitioners with the fundamental considerations necessary to assist in determining whether convex mirrors are appropriate. Specific issues covered include the effect that mirrors have on driver behaviour, the environment in which mirrors are most suited, the type of mirror preferred and important considerations relating to installation and maintenance.

Convex mirrors should only be considered if all other attempts to improve sight distance fail. The Department has some reservations about such devices that should be clearly understood by practitioners, road authorities and property owners. Mirrors shall not be installed within the carriageway, including shoulders, islands and medians.

5.1 Mirror properties

To provide an image sufficient to see large areas, it is necessary to use mirrors with a convex surface. However, the convex shape of the mirror results in the image, speed and distance of the object being distorted. The degree of distortion depends on the radius of the curvature and the size of the convex mirror. The larger the radius of curvature the lesser the distortion and vice versa.

In addition to distortion effects, the image of a vehicle in a convex mirror appears to be on the wrong side of the road. This is due to the lateral inversion of the image created by the mirror. This lateral inversion or mirror image effect can result in road users misinterpreting the images. This misinterpretation is seen as a serious limitation. However, the purpose of a convex mirror is simply to indicate to the road user, the presence or absence of a moving or stationary vehicle and/or pedestrian.

Dark blue, black and other dark colours are difficult to detect in these mirrors in the early morning or late afternoon as these colours appear to be absorbed by the road surface colour.

5.2 Road safety assessment

The particular circumstances of the proposed installation of a convex mirror needs to be assessed from a road safety perspective using documented road safety audit procedures before a decision is made to install a convex mirror on a public road. Considering the problems inherent in the design and in the use of convex mirrors, the road safety assessment must show that there are safety benefits in installing the mirror over installing other traffic engineering measures.

The road safety assessment and consequent decision to install the convex mirror must be documented.

5.3 Limitations

Convex mirrors shall not be installed:

- on public roads where alternative engineering measures have been used as stated in Section 3 or Section 4.
- within the carriageway, including shoulders, islands and medians
- to enhance pedestrian crossing movements. Other solutions should be considered, such as relocation of the crossing point
- on roads with an 85th percentile greater than 60 km/h.

Convex mirrors are not considered traffic control devices and so do not require approval under the conditions of the *Road Traffic Act*. However, the road authority may be legally liable for a negligence claim where a person has been injured through reliance on a convex mirror installed on a road under its care. To minimise the exposure to such a claim, before installing a convex mirror, the road authority needs to observe the following three step process:

- use road safety audit procedures to assess the road safety benefits relative to the risk of crashes in installing a convex mirror at a particular location,
- make a decision based on the assessment of the road safety benefits and the risk of crashes arising from the installation, and
- take all necessary steps to ensure safe and proper installation, operation and use of the mirror.

5.4 Private property access

Because the mirrors are likely to be installed between the edge of the kerb/carriageway/shoulder and the road reserve boundary, advice (and approval if necessary) should be sought from the Local Government authority by the property owner (in incorporated areas) before installation.

5.5 Intersections and single lane roads

Where there is restricted sight distance at intersections, or on single lane roads with opposing traffic flows, a convex mirror may be installed in the road reserve after a road safety assessment shows that there are safety benefits in installing the mirror and it is the most appropriate treatment to address sight distance limitations.

Convex mirrors provide a distorted image which can be difficult for drivers to see, particularly on wide carriageways where a driver would need to view the image across multiple lanes of traffic. At complex locations, a convex mirror will not fully capture all approaching traffic and will not negate the need for drivers to physically check all approaching traffic directions to select a safe gap to enter the road. Therefore, they should not be used at wide or complex intersections.

Council must obtain approval from the Commissioner of Highways for installations on the Department's roads. Council will fund the cost of the convex mirror and installation and maintenance where it is installed within the road reserve maintained by the Department.

5.6 Installation and maintenance

The convex mirror should be installed at a location that provides the best view of the road and the oncoming vehicles concerned. Mirrors should be positioned such that the driver of the vehicle entering (i.e. the one required to give-way) can see the opposing vehicle in approximately the centre of the mirror.

A 'DISTORTED IMAGE' (G9-SA112) sign shall be installed below the mirror to warn road users.

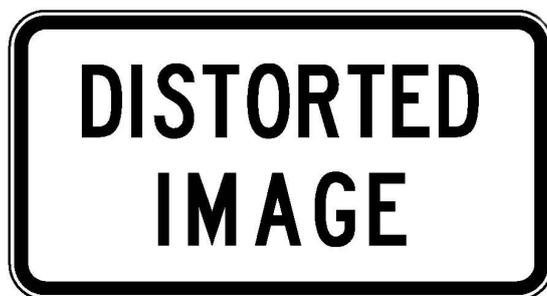


Figure 5.1 'DISTORTED IMAGE' Sign (G9-SA112)

A red/orange fluorescent coloured protective outer band (target board) will assist in improving the conspicuity of the mirror, particularly for road users who are not regular visitors to the area.

Mirrors shall not be installed within the carriageway, including traffic islands or medians. When installed within the road reserve, care should be taken to ensure that its position does not constitute a road traffic or pedestrian hazard or create a problem for general road maintenance.

5.7 Funding

Local Government is responsible for the cost of mirrors installed on local government roads. Property owners are responsible for the cost of mirrors used for entering the road reserve from concealed property access.