

Operational Instruction

2.48

# Overshoot Signage



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# TRAFFIC MANAGEMENT

## Operational Instructions

### Overshoot Signage - 2.48

#### AMENDMENT RECORD

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## 1. Scope

This operational instruction provides advice regarding the application and installation of standard signage for intersections with identified deficiencies resulting in a risk or a history of vehicles overshooting the intersection and failure to give way crash types.

## 2. Purpose

To provide guidance to traffic engineering practitioners for consistency in the installation of advance warning intersection signage.

## 3. Background

Intersections with a risk of vehicle overshoot may result from various site conditions in which drivers on the side road fail to recognise the upcoming main road intersection. These may occur where drivers on the side road have an uninterrupted view of the road beyond the main road intersection, or where the side road has had priority through previous intersections for some distance. Locations subject to use by tourist traffic or non-local traffic, or where there are differing speed environments between the side road and the main road may exacerbate the issue.

There are 3 levels of signage for overshoot location treatments. Individual sites should satisfy most or all of the site criteria for an applicable signing level.

Signs will either be Stop or Give Way based on the type of controls at subject intersections. For simplicity, the following layouts are using the Give Way control signs for example.

Refer to Section 5 for conversion to Stop control TES numbers.

## 4. Overshoot Signing Levels

### 4.1. Level 1 (OSL1)

Level 1 Overshoot (OSL1) has a total of 4 signs which consist of duplicated primary warning signs followed by duplicated control signs at the intersection. All 4 signs have a yellow backing board to improve sign conspicuity.



Duplicated primary warning  
(TES 16402)



Duplicated control signs  
with backing boards at  
intersection (TES 13496)

*Figure 1: Level 1 Overshoot signage*

**Site Criteria:**

- i. No crash history.
- ii. No sight distance restrictions from minor road.
- iii. Minor road is unsealed or is a narrow two-lane, two-way road which has no delineation (no centre line or edge lines).
- iv. There is a speed discrepancy between minor and main roads, where the minor road has a lower-speed environment approaching a high-speed main road.

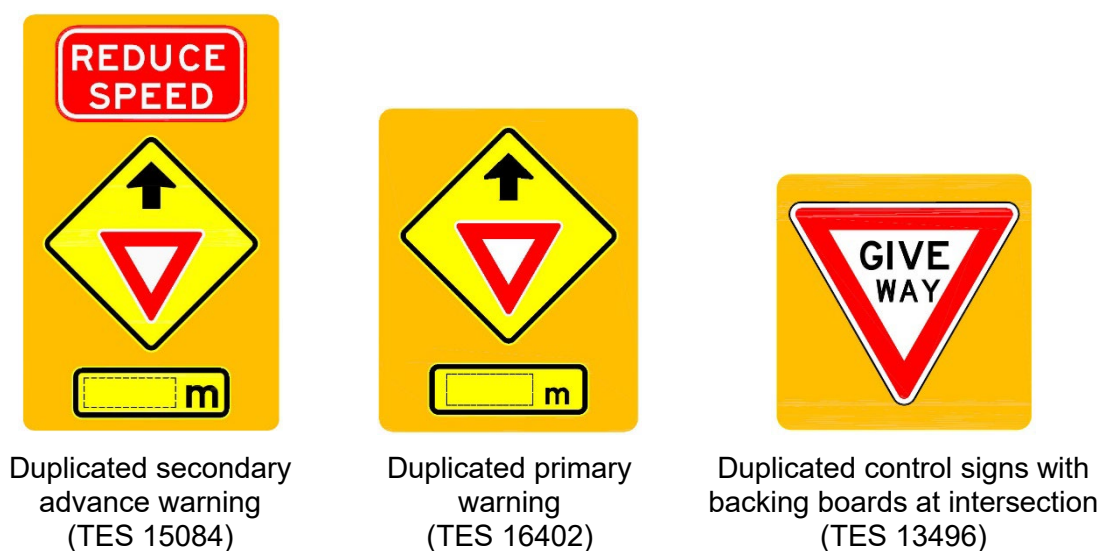
**Site Improvements:**

Additional site improvements may include increasing visibility of the intersection on the major road by:

- Installing additional intersection signs on the major road approaches, such as advance direction or advance street name signs in addition to cross road warning signs (W2-1).
- Improving delineation at the intersection with enhanced control lines and painted corner islands incorporating diagonal stripes with retro-reflective pavement markers (RRPMs). Refer to Section 7 for examples.
- Increasing the number of guide posts at the intersection.

**4.2. Level 2 (OSL2)**

Level 2 Overshoot (OSL2) has a total of 6 signs which consist of duplicated secondary warning signs, then duplicated primary warning signs followed by duplicated control signs at the intersection. All 6 signs have a yellow backing board to improve sign conspicuity.



*Figure 2: Level 2 Overshoot signage*

**Site Criteria:**

- i. Minor crash history including right angle and right turn crash types.
- ii. Minor roads are two-lane, two-way road which have centre lines and edge lines on approach to the intersection.
- iii. Slight sight distance issues on minor roads.
- iv. Major road has some kind of approach signage, either guide (advance direction or advance street name sign) or cross road warning signs (W2-1).
- v. There is a speed discrepancy between minor and main roads, where the minor road has a higher-speed environment approaching a lower-speed main road.

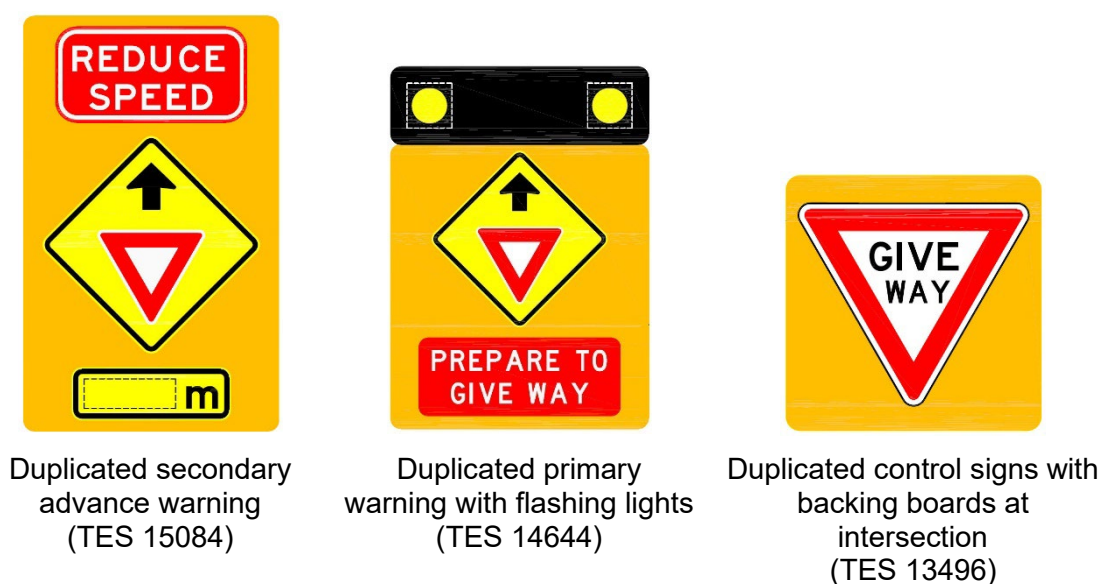
**Site Improvements:**

Additional site improvements may include increasing visibility of the intersection on the major road by:

- Installing additional intersection signs on the major road approaches, such as advance direction or advance street name signs in addition to cross road warning signs (W2-1).
- Improving delineation at the intersection with enhanced control lines and painted corner islands incorporating diagonal stripes with retro-reflective pavement markers (RRPMs). Refer to Section 7 for examples.
- Increasing the number of guide posts at the intersection.

**4.3. Level 3 (OSL3)**

Level 3 Overshoot (OSL3) has a total of 6 signs which consist of duplicated secondary warning signs, then duplicated primary warning signs with flashing lights followed by duplicated control signs at the intersection. All 6 signs have a yellow backing board to improve sign conspicuity.



*Figure 3: Level 3 Overshoot signage*

**Site Criteria:**

- i. Site has a casualty crash history (Fatal and Serious Injury) including right angle and right turn crash types.
- ii. Minor roads have poor or limited sight distance restrictions due to major road geometry (curves or crests).
- iii. Minor road approach is curved or has restricted approach sight distance to intersection. Refer to Section 4.4.
- iv. Major roads have a high-speed environment (>80km/h).
- v. Severe hazards are located at the intersection.
- vi. May have flag lighting.

**Site Improvements:**

Additional site improvements may include increasing visibility of the intersection on the major road by:

- Improving delineation on all intersection legs with narrow painted centre medians with RRPMS. Refer to Section 7 for examples.
- Install rumble strips on the minor road approaches.
- Installing additional intersection signs on the major road approaches, such as advance direction or advance street name signs in addition to cross road warning signs (W2-1).
- Increasing the number of guide posts at the intersection.

**4.4. T-intersection Beyond a Curve**

According to *AS 1742.2-2022 Clause 2.9.4(b)*, where minor roads have poor or limited sight distance restrictions due to curved road geometry, the T-intersection Beyond a Curve (W2-14) shall be used where a driver may not have adequate time to react to the presence of the T-intersection, and where a curve warning sign alone may mislead a driver as to the closeness of the T-intersection to the curve.

If an intersection beyond a curve is a cross road intersection under stop or give way controls, use Level 3 (OSL3) control warning signs and sign curve independently.

The sign assembly for T-intersection Beyond a Curve is TES19461 and is considered a secondary warning sign. The primary warning sign to be used in conjunction with TES19461 is based on the control sign at the subject intersection. Refer to Section 5 for conversion to Stop control TES numbers.



Duplicated secondary advance warning (TES19461 L or R)

Duplicated primary warning (TES 16402)

Duplicated control signs with backing boards at intersection (TES 13496)

Figure 4: T-intersection Beyond a Curve signage

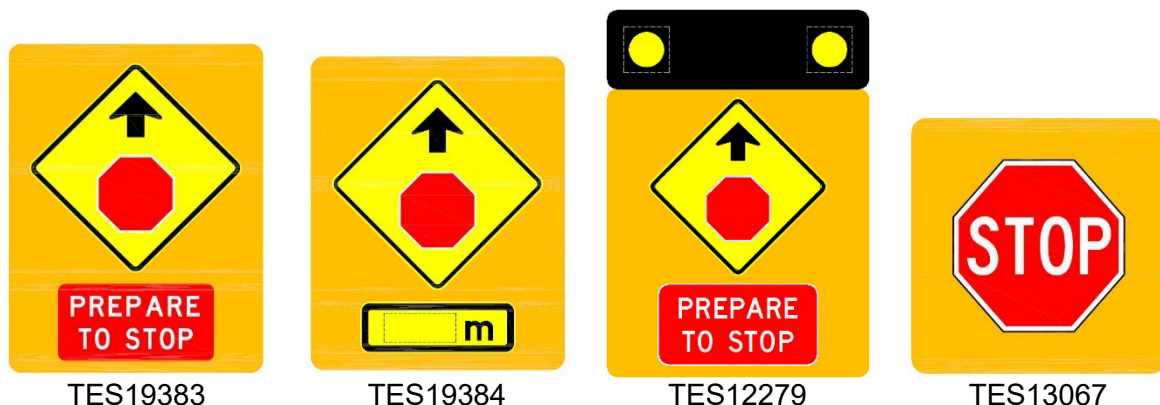
#### Site Criteria:

- i. Minor road approach has poor or limited approach sight distance to intersection.

## 5. Stop Controls

Stop controls can be substituted using the following TES numbers:

	Give Way Control	Stop Control
Control (at intersection)	TES13496	TES13067
Primary warning	TES16402	TES19384
Secondary advance warning	TES15084	TES19383
Flashing lights (primary warning)	TES14644	TES12279



TES19383

TES19384

TES12279

TES13067

Figure 5: Stop control signage



## 6. Sign Locations

Pending site restraints, primary warning signs should be installed at the following distances prior to the intersection. This table is based on the upper dimensions found in *AS 1742.2-2022 Table D.1*

- <75km/h at 120m prior to the intersection.
- 75 – 90km/h at 180m prior to the intersection.
- 90+km/h at 250m prior to the intersection.

Pending site restraints, secondary warning signs should be installed 120m in advance of primary warning signs.

A primary or secondary warning sign may be installed 20m either side of an on-site obstruction (such as a driveway, tree, embankment or other hazard/obstruction), with the preference to install further from the intersection first, without effecting the distances indicated on the signs.

Available sight distance can be improved by relocating the minor road control line closer to the prolongation of the major road edge line. *AS 1742.2-2022 Clause 5.4.4(a)* states that the control line shall be normally placed on the prolongation of the edge line or edge of seal, it may be set back if there is a problem of vehicles over-running the line or if it is desired to hold vehicles back some distance from the intersection road (provided there is enough unobstructed sight distance to allow). Greater prominence of the control line may be given by using an enhanced line.

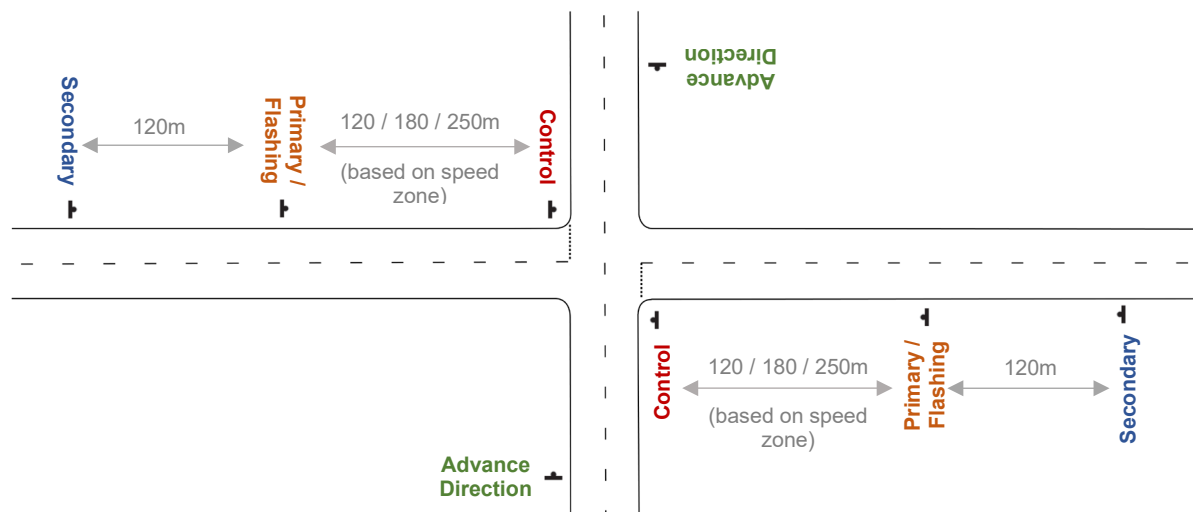


Figure 6: Location of signage

## 7. Linemarking

The following are examples of improved delineation for intersections.

### 7.1. Enhanced Control Lines

Standard transverse control lines (both Stop and Give Way) are 450mm wide and are installed in a speed environment < 70 km/h. Enhanced transverse control lines are 600mm wide.

A traffic impact statement would need to be submitted for non-standard approval as the *Code of Technical Requirements* states that an enhanced control line shall be applied based on the terminating road speed limit.

#### 2.1.2 TRANSVERSE LINES

##### 2.1.2.1 Stop lines

- a) Standard ( $\leq 70$  km/h)  450mm
- b) Enhanced ( $\geq 80$  km/h)  600mm

##### 2.1.2.2 Give way lines

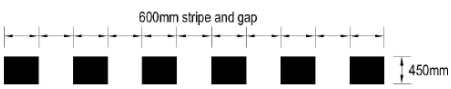

- a) Standard ( $\leq 70$  km/h)  450mm
- b) Enhanced ( $\geq 80$  km/h)  600mm

Figure 7: Pavement Marking Manual Section 2.1.2 regarding use of control lines

### 7.2. Painted Corner Islands

Improving delineation on corners at intersections can provide a simple and effective treatment which increases visibility of the intersection for all legs during both day and night conditions. Painted corner islands also have the added benefit of providing better guidance to turning movements by encouraging a high entry angle.



Figures 8a & 8b: Before & After corner treatments installed

### 7.3. Narrow Centre Medians

Narrow centre medians with RRPMS provide a visible pavement treatment which can be installed to highlight cross road intersections. Narrow centre medians in combination with painted corner islands provide the greatest visibility of an intersection at a site where it is unlikely to attract funding for a permanent solution (e.g. changes to geometric layout).



Figure 9: Narrow painted median with RRPMS

### 7.4. Rumble Strips

Rumble strips are not defined as a traffic control device, however they are intended to alert drivers of an approaching change in conditions and draw their attention to the associated warning signs. Rumble strips should be installed in accordance with *Operational Instruction 2.27 – Treatments for High Speed Rural Intersections and T-intersections*.



Figure 10: Rumble strips on approach to intersection

## 8. Definitions

According to *Austrroads Infrastructure Risk Rating Manual for Australian Roads*, the following definitions are applied.

### 8.1. Lane Widths

Lane widths is the distance measured between the centre line and the edge line or edge of seal if there is no edge line.

Narrow Lane	<3.0m
Medium Lane	3.0 – 3.5m
Wide Lane	>3.5m

### 8.2. Roadside Hazards

The following hazard types are considered severe if they are located within 5m from the road. Hazard offsets are measured from the edge line, or the edge of seal if there is no edge line.

Cliffs

Deep Water

Aggressive vertical faces

Deep drain ditches

Buildings, rigid structures, or bridges

Non-frangible hazards (including trees, signs, posts, poles >10cm diameter, large boulders >20cm diameter, unprotected barrier ends)

### 8.3. Traffic Volumes

Although not a given criteria in defining signing levels, AADT does hold an exposure risk and can be considered. Traffic volumes are determined using the average annual daily traffic of each leg of the intersection.

Low	<500
Minor	500 – 1000
Moderate	1000 – 6000
High	6000 – 12000
Very High	>12000

## 8.4. Safe Systems

Safe System elements of intersection crashes involve:

Exposure	– AADT for each approach – Intersection size
Likelihood	– Type of control – Speed – Design – Visibility – Conflict points
Severity	– Impact angles – Speeds

## 9. References

- Australian Standards AS 1742.2-2022: Traffic Control Devices for General Use
- Australian Standards AS 1742.15-2019: Direction Signs, Information Signs and Route Numbering
- DIT Manual of Legal Responsibilities and Technical Requirements for Traffic Control Devices
- DIT Pavement Marking Manual
- DIT Operational Instruction 2.27– Treatments for High Speed Rural Intersections and T-intersections.
- Austroads: Infrastructure Risk Rating Manual for Australian Roads
- Austroads: Safe System Assessment Framework