Preface

This field guide has been prepared by the Department of Planning, Transport and Infrastructure (DPTI) to assist in the preparation of Workzone Traffic Guidance Plans intended for use on or adjacent roads within South Australia.

The illustrated figures in this guide are examples only and this guide is not intended to cover all instances. Users remain at all times responsible for compliance with the provisions of the South Australian Road Traffic Act 1961 and Regulation and to the Manual of Legal Responsibilities and Technical Requirements for Traffic Control Devices.

DPTI does not warrant the accuracy or completeness of this Field Guide and DPTI, the Minister for Transport and the Crown in Right of the State of South Australia are not jointly (or severally) liable for any claim, damages, injuries, deaths or liabilities with (or arising out of) the use of this Field Guide.

DPTI wishes to acknowledge the participation of the expert individuals that contributed to the development of this guide during the consultation period.

DPTI encourages readers to notify the department immediately of any apparent inaccuracies or ambiguities.

Notification of works

When planning to work on or adjacent to a road under the care and control of DPTI a permit number must be obtained from the department’s Traffic Management Centre (TMC). For further information contact the department’s 24 hour free call number on 1800 018 313.

Roads not controlled by the department that are within a local government area are under the control of the respective local council.

Reporting work site inaccuracies

Road users are encouraged to report specific instances of deficient or unsafe workzone traffic management to the department (for roads under the care and control of the department) via the 24 hour enquiry line.
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**Divided carriageway**

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**With intersections**

**Undivided carriageway**

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**Divided carriageway**

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**On roundabout**

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Description

Dimension D
Dimension \( D \), as shown on illustrate examples within this guide, is for the positioning of advance signs and is related to the speed of traffic. The value of \( D \) is shown in the following table.

<table>
<thead>
<tr>
<th>Speed of traffic (km/h)</th>
<th>Dimension D (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 45</td>
<td>0-5</td>
</tr>
<tr>
<td>46-55</td>
<td>15</td>
</tr>
<tr>
<td>56-65</td>
<td>45</td>
</tr>
<tr>
<td>Greater than 65</td>
<td>Equal to speed of traffic, in km/h</td>
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</table>

Ref: AS1742.3 Table 4.2

Dimension D is the speed of traffic in the speed zone immediately preceding the zone where advance signs are placed, see figure below.

Ref: AS1742.3 Figure 4.2 (a)

If there has been no zone change for at least the preceding 200m, Dimension D is the speed of traffic at the advance sign, see figure below.

Ref: AS1742.3 Figure 4.2 (b)
Use of 25km/h temporary speed zone
Use of a 25km/h temporary speed zone shall only be applied for hazardous work areas.

Hazardous work area means a work area –
   a) where –
      i) workers may be working on a part of a carriageway for vehicles proceeding in a particular direction and there is no adjoining marked lane outside the work area for vehicles proceeding in the same direction; or
      ii) workers may be working less than 1.5 metres from vehicles proceeding on a carriageway, and the work is carried out on foot and not exclusively through the use of vehicles; or
   b) where an unusually high level of hazard for workers or persons using the road is created as a consequence of the existence of the work area.

Repeater signs
Repeater speed restriction signs shall be provided to confirm and remind road users of the speed limit where it is imposed over a considerable length and locations where it may appear that the limit no longer applies, e.g. between work areas in an extended work site and work sites through an intersection.

For examples refer to example figures with intersections and roundabouts.

Duplication of signs
Multiple signs that are placed together and are duplicated and facing in the same direction as traffic must have the Regulatory sign facing closer to the road (refer to figure below).
Example traffic management plans
**FIGURE 1.1.1.1**
EXAMPLE : TWO LANE - TWO WAY ROADS, MID BLOCK ONE LANE OPERATION, WITH TRAFFIC CONTROLLERS (SHORT TERM)

Most roads consist of a painted centre-line

Containment fence or tape placed at the boundary of the work area - see Note 4

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage)

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Temporary Hazard Markers - See Note 8

**REFER TO TABLES AND NOTES - FIGURE 1.1.1.1**

**DISTANCE LEGEND:**
- BZ = Buffer Zone (m)
- AW = Advance Warning Area (m)
- TA = Taper Area (m)
- SB = Safety Buffer (m)
- WA = Work Area (m)
- ML = Termination Area (m)
- LW = Minimum Residual lane width (m)
- CL = Minimum clearance from traffic to cones/bollards (m)
- Q = Predicted longest end of queue length (m) including site distances
- A = Distance of Q + Aw

**Note:** Drawing is not to scale

Reference : AS1742.3 4.2 & 4.10
# TABLES AND NOTES - Figure 1.1.1.1

## TWO LANE - TWO WAY ROADS, MID BLOCK – ONE LANE OPERATION WITH TRAFFIC CONTROLLERS (SHORT TERM)

### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
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<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
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<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a 60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80 60</td>
</tr>
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### DESIRABLE MAXIMUM LENGTH OF SINGLE-LANE OPERATION UNDER REVERSIBLE FLOW

<table>
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<th>Traffic Volume (vph)</th>
<th>Length of single-lane section – measured from one control point to the other (m)</th>
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<tr>
<td>&gt;= 701</td>
<td>70</td>
</tr>
<tr>
<td>601 - 700</td>
<td>100</td>
</tr>
<tr>
<td>501 - 600</td>
<td>150</td>
</tr>
<tr>
<td>301 - 500</td>
<td>250</td>
</tr>
<tr>
<td>&lt;= 300</td>
<td>500</td>
</tr>
</tbody>
</table>

### NOTES:

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
3. For the conditions of use:
   - Observe the desirable maximum length of single-lane operation under reversible flow table (as above)
   - High visibility clothing shall be worn by traffic controllers
   - Stop/Slow traffic bat shall be used (except if a boom gate is installed)
Continue for Figure 1.1.1.1

- For night works an illuminated wand must be used
- Portable two-way radios or similar shall be used (unless in blasting area) for communication between controllers unless they are able to communicate by sight
- Traffic controllers shall not be located where the sight distance is less than 1.5D between controller and on-coming traffic. Determine “D” from Length of Zone table above selecting values from “AW” zone
- Traffic controllers shall take rest breaks of 15 minutes or more for at least every 2 hours
- Minimise the risk of end-of-queue collisions - see AS1742.3 Clause 4.7.8

4. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
6. Provision shall be made for pedestrians (including disabled persons) and bicycles
7. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required

8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
9. For additional information on night works, please refer to AS1742.3 section 2.3.6
10. If distance A exceeds 4D, repeater sign(s) (prepare to stop) are required at evenly spaced distance(s)
FIGURE 1.1.1.2
EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK
ONE LANE OPERATION, WITH TRAFFIC CONTROLLERS (LONGTERM)

Most roads consist of a painted centre-line

Containment fence or tape placed at the boundary of the work area - see Note 4

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes < 1500 vpd with no less than one lamp visible from any direction

Temporary Hazard Markers - See Note 8

Refer to Tables and Notes - Figure 1.1.1.2

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale

Reference: AS1742.3
4.2 & 4.10

Length of closed lane - See Note 3
If required prohibit parking
If cones/bollards are not adequately visible, install Temporary Hazard markers

Cones/bollards at 4 m

Return Speed (Temporary Speed)
Prep To Stop

Buffer Speed - See Table
End Road Work
Return to Road Speed Limit (Permanent Speed)

See Note 2
See Note 7
See Note 8
See Note 10
## TABLES AND NOTES - Figure 1.1.1.2

### TWO LANE - TWO WAY ROADS, MID BLOCK – ONE LANE OPERATION WITH TRAFFIC CONTROLLERS (LONG TERM)

#### LENGTH OF ZONE (m)

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<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“No” = AW</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“Yes” = 300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
</tr>
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<td>15</td>
<td>15</td>
<td>30</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
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<td></td>
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<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
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</tr>
</tbody>
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* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

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* Cone height >= 700 mm

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<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

#### DESIRABLE MAXIMUM LENGTH OF SINGLE-LANE OPERATION UNDER REVERSIBLE FLOW

<table>
<thead>
<tr>
<th>Traffic Volume (vph)</th>
<th>Length of single-lane section – measured from one control point to the other (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 701</td>
<td>70</td>
</tr>
<tr>
<td>601 - 700</td>
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</tr>
<tr>
<td>501 - 600</td>
<td>150</td>
</tr>
<tr>
<td>301 - 500</td>
<td>250</td>
</tr>
<tr>
<td>&lt;= 300</td>
<td>500</td>
</tr>
</tbody>
</table>

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site
NOTES:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
3. For the conditions of use:
   - Observe the desirable maximum length of single-lane operation under reversible flow table (as above)
   - High visibility clothing shall be worn by traffic controllers
   - Stop/Slow traffic bat shall be used (except if a boom gate is installed)
   - For night works an illuminated wand must be used
   - Portable two-way radios or similar shall be used (unless in blasting area) for communication between controllers unless they are able to communicate by sight
   - Traffic controllers shall not be located where the sight distance is less than 1.5D between controller and on-coming traffic. Determine “D” from Length of Zone table above selecting values from “AW” zone
   - Traffic controllers shall take rest breaks of 15 minutes or more for at least every 2 hours
   - Minimise the risk of end-of-queue collisions - see AS1742.3 Clause 4.7.8
4. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
6. Provision shall be made for pedestrians (including disabled persons) and bicycles
7. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A
8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
9. For additional information on night works, please refer to AS1742.3 section 2.3.6
10. If distance A exceeds 4D, repeater sign(s) (prepare to stop) are required at evenly spaced distance(s)
FIGURE 1.1.1.3
EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK
ONE LANE OPERATION, WITH TRAFFIC SIGNALS (SHORT TERM)

Most roads consist of a painted centre-line

Containment fence or tape placed at the boundary of the work area - see Note 4

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Temporary Hazard Markers - See Note 8

Refer to Tables and Notes - Figure 1.1.1.3

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale

Reference: AS1742.3
4.2 & 4.11

Optional

Length of closed lane - See Note 3

If required prohibit parking

If cones/bollards are not adequately visible, install Temporary Hazard markers

Return to Road Speed Limit

Buffer Speed - See Table
TABLES AND NOTES - Figure 1.1.1.3

TWO LANE - TWO WAY ROADS, MID BLOCK – ONE LANE OPERATION
WITH TRAFFIC SIGNALS (SHORT TERM)

**LENGTH OF ZONE (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
 *** A Safety Buffer Zone is recommended

**MAXIMUM SPACING OF CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

**MINIMUM RESIDUAL LANE WIDTH (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

**MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**BUFFER SPEED (km/h)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>60</td>
</tr>
</tbody>
</table>

**DESIRABLE MAXIMUM LENGTH OF SINGLE-LANE OPERATION UNDER REVERSIBLE FLOW**

<table>
<thead>
<tr>
<th>Traffic Volume (vph)</th>
<th>Length of single-lane section – measured from one control point to the other (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 701</td>
<td>70</td>
</tr>
<tr>
<td>601 - 700</td>
<td>100</td>
</tr>
<tr>
<td>501- 600</td>
<td>150</td>
</tr>
<tr>
<td>301 - 500</td>
<td>250</td>
</tr>
<tr>
<td>&lt;= 300</td>
<td>500</td>
</tr>
</tbody>
</table>

**NOTES:**
1. Undertake a risk assessment
2. Speed through Work Site shall be <= 60 km/h
   • Length of 60 km/h speed zone shall be >= 200 metres
   • Length of 40 km/h speed zone shall be <= 500 metres
   • Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. For the conditions of use:
   • Observe the desirable maximum length of single-lane operation under reversible flow table (as above)
Continue for Figure 1.1.1.3

- Sight distance on approach to the primary face of traffic signals shall be >= 150 metres
- Minimise the risk of end-of-queue collisions - see AS1742.3 Clause 4.7.8
- Monitor signals for safe and effective operation and to ensure traffic delays are not excessive

4. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

6. Provision shall be made for pedestrians (including disabled persons) and bicycles

7. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required

8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited

9. For additional information on night works, please refer to AS1742.3 section 2.3.6

10. If distance A exceeds 4D, repeater sign(s) (prepare to stop) are required at evenly spaced distance(s)
FIGURE 1.1.1.4
EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK
ONE LANE OPERATION, WITH TRAFFIC SIGNALS (LONG TERM)

Most roads consist of a painted centre-line
See Note 10

When workers are present, set up sign as shown in box

Containment fence or tape placed at the boundary of the work area - see Note 4

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Temporary Hazard Markers - See Note 8

REFERENCE: AS1742.3
4.2 & 4.11

REFER TO TABLES AND NOTES - FIGURE 1.1.1.4

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
### TABLES AND NOTES - Figure 1.1.1.4

**TWO LANE - TWO WAY ROADS, MID BLOCK – ONE LANE OPERATION WITH TRAFFIC SIGNALS (LONG TERM)**

#### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“No” = AW</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“Yes” = 300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
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</tr>
<tr>
<td>ML – if installed</td>
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</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM RESIDUAL LANE WIDTH (m)

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<th>Road Speed (km/h)</th>
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</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
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Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

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<thead>
<tr>
<th>Road Speed (km/h)</th>
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<th>70</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
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</table>

#### BUFFER SPEED (km/h)

<table>
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<tr>
<th>Road Speed (km/h)</th>
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</tr>
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<tr>
<td>100 or 110</td>
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</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

#### DESIRABLE MAXIMUM LENGTH OF SINGLE-LANE OPERATION UNDER REVERSIBLE FLOW

<table>
<thead>
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<tr>
<td>601 - 700</td>
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<td>&lt;= 300</td>
<td>500</td>
</tr>
</tbody>
</table>

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site.
NOTES:
1. Undertake a risk assessment
2. Speed through Work Site shall be <= 60 km/h
   • Length of 60 km/h speed zone shall be >= 200 metres
   • Length of 40 km/h speed zone shall be <= 500 metres
   • Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. For the conditions of use:
   • Observe the desirable maximum length of single-lane operation under reversible flow table (as above)
   • Sight distance on approach to the primary face of traffic signals shall be >= 150 metres
   • Minimise the risk of end-of-queue collisions - see AS1742.3 Clause 4.7.8
   • Monitor signals for safe and effective operation and to ensure traffic delays are not excessive
4. When workers or small items of plant are in use:
   • If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance
     area being infringed, a containment fence of tape must be installed
   • If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment
     fence or tape, then these devices may be excluded
5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of
   traffic as defined e.g. cones, bollards or edge lines
6. Provision shall be made for pedestrians (including disabled persons) and bicycles
7. Install appropriate signs:
   • Advance Warning -
     o T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     o Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   • Termination - T2-16A or T2-17A
8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the
   cone spacing, or T5-5 may be used where space is limited
9. For additional information on night works, please refer to AS1742.3 section 2.3.6
10. If distance A exceeds 4D, repeater sign(s) (prepare to stop) are required at evenly spaced distance(s)
FIGURE 1.1.1.5
EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK
ONE LANE OPERATION, WITH GIVEWAY SIGN (SHORT TERM)

Containment fence or tape placed at the boundary of the work area - see Note 3

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Temporary Hazard Markers - See Note 7

Give Way Ahead - may be used

Buffer Speed - See Table

Most roads consist of a painted centre-line

See Note 2

Optional

DNS/YY 80 END WORKING ON

Length of closed lane - See Note 2

If required prohibit parking

If cones/bollards are not adequately visible, install Temporary Hazard markers

Return to Road Speed Limit

Return to Road

Refer to Tables and
Notes - Figure 1.1.1.5

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
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Note: Drawing is not to scale
TABLES AND NOTES - Figure 1.1.1.5

TWO LANE - TWO WAY ROADS, MID BLOCK – ONE LANE OPERATION
WITH GIVE WAY SIGN (SHORT TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
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<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

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</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

NOTES:
1. Undertake a risk assessment
2. For the conditions of use:
   - Traffic volume is <= 150 vpd
   - Traffic speed is <= 70 km/h
   - Length of Work Area is < 100 metres
   - The work area entrances are visible from one another
   - Sight distance to the opposing traffic is >= 200 metres past the furthest end of the work area (as seen from the give way assembly)
   - Install a No Overtaking or Passing sign at the start of the single lane for traffic in the opposite direction
   - Monitor Give Way setup for safe and effective operation and to ensure traffic delays are not excessive
   - Give way assembly and no overtaking or passing signs may both be placed at the opposite end of the work area as shown in the figure above
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
Continue for Figure 1.1.1.5

- If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
**FIGURE 1.1.1.6**

**EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK**

**ONE LANE OPERATION, WITH GIVEWAY SIGN (LONG TERM)**

- When workers are present, set up sign as shown in box
- Containment fence or tape placed at the boundary of the work area - see Note 3
- Flashing Arrow Board - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage)
- OR
  - Two Rotating Flashing Lamps - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction
- Temporary Hazard Markers - See Note 7
- Give Way Ahead - may be used

**REFER TO TABLES AND NOTES - FIGURE 1.1.1.6**

- Distance Legend:
  - BZ = Buffer Zone (m)
  - AW = Advance Warning Area (m)
  - TA = Taper Area (m)
  - SB = Safety Buffer (m)
  - WA = Work Area (m)
  - ML = Termination Area (m)
  - LW = Minimum Residual lane width (m)
  - CL = Minimum clearance from traffic to cones/bollards (m)

**Note:** Drawing is not to scale
TABLES AND NOTES - Figure 1.1.1.6

TWO LANE - TWO WAY ROADS, MID BLOCK - ONE LANE OPERATION WITH GIVE WAY SIGN (LONG TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, "D" = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

NOTES:

1. Undertake a risk assessment
2. Speed through Work Site shall be <= 60 km/h
   • Length of 60 km/h speed zone shall be >= 200 metres
   • Length of 40 km/h speed zone shall be <= 500 metres
   • Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. For the conditions of use:
   • Observe the desirable maximum length of single-lane operation under reversible flow table (as above)
   • Sight distance on approach to the primary face of traffic signals shall be >= 150 metres
   • Minimise the risk of end-of-queue collisions - see AS1742.3 Clause 4.7.8
   • Monitor signals for safe and effective operation and to ensure traffic delays are not excessive
4. When workers or small items of plant are in use:
   • If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   • If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
6. Provision shall be made for pedestrians (including disabled persons) and bicycles
7. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds $\geq 90$ km/h)
   - Termination - T2-16A or T2-17A
8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
9. For additional information on night works, please refer to AS1742.3 section 2.3.6
FIGURE 1.1.2.1
EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK
TWO WAY OPERATION, WITH SINGLE TRAFFIC CONTROLLER (SHORT TERM)

Most roads consist of a painted centre-line

This figure assumes that it is not practicable to use a containment fence or tape at limit of work area

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage)

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Traffic Controller stops traffic for SHORT PERIODS of time while workers are on roadway

If required prohibit parking

Refer to Tables and Notes - Figure 1.1.2.1

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
TWO LANE - TWO WAY ROADS, MID BLOCK - TWO LANE OPERATION
WITH SINGLE TRAFFIC CONTROLLER (SHORT TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>Approach D** = 70</td>
<td>Approach D** Departure 2D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, "D" = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

NOTES:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. For the conditions of use:
   - High visibility clothing shall be worn by traffic controllers
   - Stop/Slow traffic bat shall be used
   - For night works an illuminated wand must be used
   - Traffic Controller shall not be located where the sight distance is less than 1.5D between controller and on-coming traffic. Determine “D” from Length of Zone table above selecting values from “AW” zone
   - Traffic controllers shall take rest breaks of 15 minutes or more for at least every 2 hours
   - Minimise the risk of end-of-queue collisions - see AS1742.3 Clause 4.7.8
4. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
Continue for Figure 1.1.2.1

- If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded.

5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

6. Provision shall be made for pedestrians (including disabled persons) and bicycles.

7. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required

8. For additional information on night works, please refer to AS1742.3 section 2.3.6.

9. If distance A exceeds 4D, repeater sign(s) (prepare to stop) are required at evenly spaced distance(s).
FIGURE 1.1.2.2
EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK
TWO WAY OPERATION, WITH SINGLE TRAFFIC CONTROLLER (LONG TERM)

Most roads consist of a painted centre-line

This figure assumes that it is not practicable to use a containment fence or tape at limit of work area

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

When workers are present, set up signs associated with Workers (symbolic) Combination; add prepare to Stop combination when Traffic Controller is operating

See Note 9

REFER TO TABLES AND NOTES - FIGURE 1.1.2.2

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale

Buffer Speed - See Table

See Note 7

END ROAD WORK

Return to Road Speed Limit (Permanent Speed)

See Note 2

Return Speed (Temporary Speed)

When workers are present, set up signs as shown in box

Centre-line will normally be cleared of devices when workers are not present

Traffic Controller stops traffic for SHORT PERIODS of time while workers are on roadway

If required prohibit parking

Reference: AS1742.3
4.2 & 4.10

PREPARE TO STOP

Return Speed (Temporary Speed)

See Note 2

PREPARE TO STOP

Return to Road Speed Limit (Permanent Speed)

See Note 7

ROAD WORK AHEAD

Buffer Speed - See Table
**TABLES AND NOTES - Figure 1.1.2.2**

**TWO LANE - TWO WAY ROADS, MID BLOCK - TWO LANE OPERATION WITH SINGLE TRAFFIC CONTROLLER (LONG TERM)**

**LENGTH OF ZONE (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;No&quot; = AW</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;Yes&quot; = 300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td></td>
<td>Approach D** = 70</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Departure 2D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>See Note 2</td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, "D" = speed of approaching traffic
*** A Safety Buffer Zone is recommended

**MAXIMUM SPACING OF CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

**MINIMUM RESIDUAL LANE WIDTH (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

**MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**BUFFER SPEED (km/h)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a 60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80 60</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

**This Figure** illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

**NOTES:**

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. For the conditions of use:
   - High visibility clothing shall be worn by traffic controllers
Continue for Figure 1.1.2.2

- Stop/Slow traffic bat shall be used
- For night works an illuminated wand must be used
- Traffic Controller shall not be located where the sight distance is less than 1.5D between controller and on-coming traffic. Determine “D” from Length of Zone table above selecting values from “AW” zone
- Traffic controllers shall take rest breaks of 15 minutes or more for at least every 2 hours
- Minimise the risk of end-of-queue collisions - see AS1742.3 Clause 4.7.8

4. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

6. Provision shall be made for pedestrians (including disabled persons) and bicycles

7. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A

8. For additional information on night works, please refer to AS1742.3 section 2.3.6

9. If distance A exceeds 4D, repeater sign(s) (prepare to stop) are required at evenly spaced distance(s)
FIGURE 1.1.2.3
EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK
TWO WAY OPERATION, UNCONTROLLED (SHORT TERM)

- Buffer Speed - See Table
- See Note 2
- See Note 5
- Return to Road Speed Limit
- Install road condition sign(s), and/or signs advising status of line-marking(s), as appropriate

Most roads consist of a painted centre-line

Allow for a Safety Buffer and Advance Warning zone when workers are on site

Install temporary raised reflective pavement markers, if appropriate

If required prohibit parking

Allow for a Safety Buffer and Advance Warning zone for when workers are on site

REFER TO TABLES AND NOTES - FIGURE 1.1.2.3

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
## TABLES AND NOTES - Figure 1.1.2.3

### TWO LANE - TWO WAY ROADS, MID BLOCK - TWO LANE OPERATION UNCONTROLLED (SHORT TERM)

#### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table  
** For 70 - 110 km/h road speeds, "D" = speed of approaching traffic  
*** A Safety Buffer Zone is recommended when workers are present

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

### NOTES:

1. Undertake a risk assessment
2. Install speed zone for the work site (which may be a buffer speed – see table above), and a speed zone for the work area when workers are present (40 km/h, unless a hazardous work area; on higher speed roads, and where it is safe to do so, installing a speed limit of 60 km/h may be appropriate)
   - Length of 60 km/h speed zone shall be >= 200 metres
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Provision shall be made for pedestrians (including disabled persons) and bicycles
5. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination – none required
6. For additional information on night works, please refer to AS1742.3 section 2.3.6
FIGURE 1.1.2.4
EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK
TWO WAY OPERATION, UNCONTROLLED (LONG TERM)

Most roads consist of a painted centre-line

Allow for a Safety Buffer and Advance Warning zone when workers are on site

Install temporary raised reflective pavement markers, if appropriate

If required prohibit parking

Allow for a Safety Buffer and Advance Warning zone when workers are on site

REFERENCES AND NOTES - FIGURE 1.1.2.4

DISTANCE LEGEND:
BZ = Buffer Zone (m)
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WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
TWO LANE - TWO WAY ROADS, MID BLOCK - TWO LANE OPERATION UNCONTROLLED (LONG TERM)

### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>60</th>
<th>40</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 or 90</td>
<td>n/a</td>
<td>n/a</td>
<td>60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
<td>80</td>
<td>60</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

NOTES:
1. Undertake a risk assessment
2. Install speed zone for the work site (which may be a buffer speed – see table above), and a speed zone for the work area when workers are present (40 km/h, unless a hazardous work area; on higher speed roads, and where it is safe to do so, installinga speed limit of 60 km/h may be appropriate)
   - Length of 60 km/h speed zone shall be >= 200 metres
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Provision shall be made for pedestrians (including disabled persons) and bicycles
5. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A
6. For additional information on night works, please refer to AS1742.3 section 2.3.6
FIGURE 1.1.2.5
EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK
TWO LANE OPERATION, LATERAL SHIFT TAPER (SHORT TERM)

CONTAINMENT FENCE OR TAPE PLACED AT THE BOUNDARY OF THE WORK AREA - SEE NOTE 3

FLASHING ARROW BOARD - SHALL BE USED WHEN TRAFFIC VOLUME > 1500 VPD (REFER TO AS11742.3 FOR FURTHER DETAILS ON USAGE) OR
TWO ROTATING FLASHING LAMPS - MAY BE USED WHEN TRAFFIC VOLUME <= 1500 VPD WITH NO LESS THAN ONE LAMP VISIBLE FROM ANY DIRECTION

TEMPORARY HAZARD MARKERS - SEE NOTE 7

IF CONES/BOLLARDS ARE NOT ADEQUATELY VISIBLE, INSTALL TEMPORARY HAZARD MARKERS

REFER TO TABLES AND NOTES - FIGURE 1.1.2.5

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual Lane Width (m)
CL = Minimum Clearance from Traffic to Cones/Bollards (m)

Note: Drawing is not to scale
**TABLES AND NOTES - Figure 1.1.2.5**

**TWO LANE - TWO WAY ROADS, MID BLOCK - TWO LANE OPERATION**

**LATERAL SHIFT TAPER (SHORT TERM)**

### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>&lt; 15</td>
<td>15</td>
<td>30</td>
<td>D** = 70</td>
<td>D**</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
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</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 or 90</td>
<td>40</td>
</tr>
<tr>
<td>80 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

### NOTES:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
**FIGURE 1.1.2.6**
EXAMPLE : TWO LANE - TWO WAY ROADS, MID BLOCK
TWO LANE OPERATION, LATERAL SHIFT TAPER (LONG TERM)

Most roads consist of a painted centre-line

Containment fence or tape placed at the boundary of the work area - see Note 3

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes ≤ 1500 vpd with no less than one lamp visible from any direction

Temporary Hazard Markers - See Note 7

If cones/bollards are not adequately visible, install Temporary Hazard markers

When workers are present, set up signs as shown in box

**REFERENCE :** AS1742.3
4.2

**REFER TO TABLES AND NOTES - FIGURE 1.1.2.6**

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

**Note:** Drawing is not to scale
**TABLES AND NOTES - Figure 1.1.2.6**

**TWO LANE - TWO WAY ROADS, MID BLOCK - TWO LANE OPERATION LATERAL SHIFT TAPER (LONG TERM)**

**LENGTH OF ZONE (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“No” = AW</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“Yes” = 300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>&lt; 15</td>
<td>15</td>
<td>30</td>
<td>D** = 70</td>
<td>D**</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

**MAXIMUM SPACING OF CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

**MINIMUM RESIDUAL LANE WIDTH (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

**MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**BUFFER SPEED (km/h)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

**This Figure** illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

**NOTES:**

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
• If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded.

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

5. Provision shall be made for pedestrians (including disabled persons) and bicycles.

6. Install appropriate signs:
   • Advance Warning -
     o T1-1A or T1-1B (preferred format), or T1-3A (when space is limited)
     o Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   • Termination - T2-16A or T2-17A

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited.

8. For additional information on night works, please refer to AS1742.3 section 2.3.6.
FIGURE 1.1.2.7
EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK
TWO LANE OPERATION, WORK CLEAR OF TRAFFIC LANES (SHORT TERM)

Most roads consist of a painted centre-line

Containment fence or tape placed at the boundary of the work area - see Note 3

 See Note 2

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

See Note 2

Refer to Tables and Notes - Figure 1.1.2.7

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale

Reference: AS1742.3
4.2 (a), (b), (c)
### TABLES AND NOTES - Figure 1.1.2.7

**TWO LANE - TWO WAY ROADS, MID BLOCK - TWO LANE OPERATION WORK CLEAR OF TRAFFIC LANES (SHORT TERM)**

**LENGTH OF ZONE (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td></td>
<td></td>
<td></td>
<td>See Note 2</td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

**MAXIMUM SPACING OF CONES OR BOLLARDS (m) **

Note: Required if Work Area < 3 metres to traffic and a Road Safety Barrier System is not installed

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110**</th>
</tr>
</thead>
<tbody>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Shall be placed along kerb line or if no kerb on edge of the traffic lane with clearance as per Table below
** Cone height >= 700 mm

**MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**BUFFER SPEED (km/h)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>60</td>
</tr>
</tbody>
</table>

**NOTES:**

1. Undertake a risk assessment
2. Install speed zone and advance warning sign(s) as follows:
   - >= 6 metres clearance from the nearest edge of a lane carrying traffic to the entire work area including all vehicles and plant:
     1) Speed limit not mandated
     2) When workers or any plant are visible to passing traffic, a workers (symbolic) sign should be placed at the left side of the roadway in advance of the work area
     3) No requirement to operate a vehicle mounted warning device
   - >= 3 metres to < 6 metres clearance from the nearest edge of a lane carrying traffic to the work area including all vehicles and plant:
     1) 80 km/h speed limit shall be installed in speed zones > 80 km/h where the traffic volumes are > 10,000 vpd. Length of speed zone should be >= 500 metres
     2) Install workers sign (symbolic)
     3) Operate a vehicle mounted warning device
     4) Install a containment fence or tape as the work area draws near the 3 metres limit
   - If the clearance is < 3 metres between the nearest edge of a lane carrying traffic to the entire work area, install one of the following systems:
     1) “Road Safety Barrier System” (not shown in this figure), refer to AS1742.3 clause 4.2(c)(i)
     2) A 40 km/h speed zone, unless a hazardous work area
        - Length of 40 km/h speed zone shall be <= 500 metres
        - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres

Other signs and devices according to the following notes
3. When workers or small items of plant are in use:
• If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
• If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs (other than allowed in note 2 above):
   • Advance Warning - T1-5A or T1-5B sign
   • Termination - none required
7. For additional information on night works, please refer to AS1742.3 section 2.3.6
**FIGURE 1.1.2.8**
EXAMPLE: TWO LANE - TWO WAY ROADS, MID BLOCK
TWO LANE OPERATION, WORK CLEAR OF TRAFFIC LANES (LONG TERM)

Most roads consist of a painted centre-line

Containment fence or tape placed at the boundary of the work area
- see Note 3

**REFERENCE: AS1742.3 4.2 (a), (b), (c)**

**REFER TO TABLES AND NOTES - FIGURE 1.1.2.8**

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

**Note:** Drawing is not to scale
### TABLES AND NOTES - Figure 1.1.2.8

#### TWO LANE - TWO WAY ROADS, MID BLOCK - TWO LANE OPERATION

**WORK CLEAR OF TRAFFIC LANES (LONG TERM)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>No</strong> = AW</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Yes</strong> = 300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

*Where applicable – see Buffer Speed Table

**For 70 - 110 km/h road speeds, “D” = speed of approaching traffic

***A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m) *

**Note:** Required if Work Area < 3 metres to traffic and a Road Safety Barrier System is not installed

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110**</th>
</tr>
</thead>
<tbody>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Shall be placed along kerb line or if no kerb on edge of the traffic lane with clearance as per Table below

**Cone height >= 700 mm

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 or 90</td>
<td>25</td>
</tr>
<tr>
<td>100 or 110</td>
<td>60</td>
</tr>
</tbody>
</table>

**Note:** As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

**This Figure** illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

**NOTES:**

1. Undertake a risk assessment
2. Install speed zone and advance warning sign(s) in accordance to long term work site requirements. When workers are on site, set up any additional sign(s) as follows:
    - **>= 6 metres clearance from the nearest edge of a lane carrying traffic to the entire work area including all vehicles and plant:**
      1) Speed limit not mandated
      2) When workers or any plant are visible to passing traffic, a workers (symbolic) sign should be placed at the left side of the roadway in advance of the work area
      3) No requirement to operate a vehicle mounted warning device
    - **>= 3 metres to < 6 metres clearance from the nearest edge of a lane carrying traffic to the work area including all vehicles and plant:**
      1) 80 km/h speed limit shall be installed in speed zones > 80 km/h where the traffic volumes are > 10,000 vpd. Length of speed zone should be >= 500 metres
      2) Install workers sign (symbolic)
      3) Operate a vehicle mounted warning device
      4) Install a containment fence or tape as the work area draws near the 3 metres limit
If the clearance is < 3 metres between the nearest edge of a lane carrying traffic to the entire work area, install one of the following systems:

1) “Road Safety Barrier System” (not shown in this figure), refer to AS1742.3 clause 4.2(c)(i)
2) A 40 km/h speed zone, unless a hazardous work area
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres

Other signs and devices according to the following notes

3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

5. Provision shall be made for pedestrians (including disabled persons) and bicycles

6. Install appropriate signs (other than allowed in note 2 above):
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A

7. For additional information on night works, please refer to AS1742.3 section 2.3.6
# Tables and Notes - Figure 1.2.1.1

## Two Lane - Two Way Roads, with Intersections - One Lane Operation with Traffic Controllers (Short Term)

### Length of Zone (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>Through D** = 70 Side 2D**</td>
<td>Through D** Side 2D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>30</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 – 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

### Maximum Spacing of Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

### Minimum Residual Lane Width (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

### Minimum Clearance from Traffic to Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### Buffer Speed (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

### Desirable Maximum Length of Single-Lane Operation under Reversible Flow

<table>
<thead>
<tr>
<th>Traffic Volume (vph)</th>
<th>Length of single-lane section – measured from one control point to the other (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 701</td>
<td>70</td>
</tr>
<tr>
<td>601 - 700</td>
<td>100</td>
</tr>
<tr>
<td>501 - 600</td>
<td>150</td>
</tr>
<tr>
<td>301 - 500</td>
<td>250</td>
</tr>
<tr>
<td>&lt;= 300</td>
<td>500</td>
</tr>
</tbody>
</table>

### Notes:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
3. For the conditions of use –
   - Observe the desirable maximum length of single-lane operation under reversible flow table (as above)
   - High visibility clothing shall be worn by traffic controllers
   - Stop/Slow traffic bat shall be used (except if a boom gate is installed)
   - Night works an illuminated wand must be used
• Portable two-way radios or similar shall be used (unless in blasting area) for communication between controllers unless they are able to communicate by sight
• Traffic controllers shall not be located where the sight distance is less than 1.5D between controller and on-coming traffic. Determine “D” from Length of Zone table above selecting values from “AW” zone
• Traffic controllers shall take rest breaks of 15 minutes or more for at least every 2 hours
• Minimise the risk of end-of-queue collisions - see AS1742.3 Clause 4.7.8

4. When workers or small items of plant are in use:
   • If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   • If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
6. Provision shall be made for pedestrians (including disabled persons) and bicycles
7. Install appropriate signs:
   • Advance Warning - T1-5A or T1-5B sign
   • Termination - none required
8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
9. For additional information on night works, please refer to AS1742.3 section 2.3.6
10. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance
11. If distance A exceeds 4D, repeater sign(s) (prepare to stop) are required at evenly spaced distance(s)
FIGURE 1.2.1.2
EXAMPLE: TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS
ONE LANE OPERATION, WITH TRAFFIC CONTROLLERS (LONG TERM)

Buffer Speed - See Table
Return to Road Speed Limit (Permanent Speed)

When workers are present, set up sign as shown in box

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volume <= 1500 vpd with no less than one lamp visible from any direction

Reference: AS1742.3
4.2 & 4.10

Note: Drawing is not to scale

Refer to Tables and Notes - Figure 1.2.1.2

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
TABLES AND NOTES - Figure 1.2.1.2

TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS - ONE LANE OPERATION WITH TRAFFIC CONTROLLERS (LONG TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>Through D** = 70 Side 2D**</td>
<td>Through D** Side 2D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 – 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>60</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

DESIRABLE MAXIMUM LENGTH OF SINGLE-LANE OPERATION UNDER REVERSIBLE FLOW

<table>
<thead>
<tr>
<th>Traffic Volume (vph)</th>
<th>Length of single-lane section – measured from one control point to the other (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 701</td>
<td>70</td>
</tr>
<tr>
<td>601 - 700</td>
<td>100</td>
</tr>
<tr>
<td>501- 600</td>
<td>150</td>
</tr>
<tr>
<td>301 - 500</td>
<td>250</td>
</tr>
<tr>
<td>&lt;= 300</td>
<td>500</td>
</tr>
</tbody>
</table>

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site
NOTES:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
3. For the conditions of use –
   • Observe the desirable maximum length of single-lane operation under reversible flow table (as above)
   • High visibility clothing shall be worn by traffic controllers
   • Stop/Slow traffic bat shall be used (except if a boom gate is installed)
   • Night works an illuminated wand must be used
   • Portable two-way radios or similar shall be used (unless in blasting area) for communication between controllers unless they are able to communicate by sight
   • Traffic controllers shall not be located where the sight distance is less than 1.5D between controller and on-coming traffic. Determine “D” from Length of Zone table above selecting values from “AW” zone
   • Traffic controllers shall take rest breaks of 15 minutes or more for at least every 2 hours
   • Minimise the risk of end-of-queue collisions - see AS1742.3 Clause 4.7.8
4. When workers or small items of plant are in use:
   • If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   • If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
6. Provision shall be made for pedestrians (including disabled persons) and bicycles
7. Install appropriate signs:
   • Advance Warning -
     o T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     o Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   • Termination - T2-16A or T2-17A
8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
9. For additional information on night works, please refer to AS1742.3 section 2.3.6
10. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance
11. If distance A exceeds 4D, repeater sign(s) (prepare to stop) are required at evenly spaced distance(s)
FIGURE 1.2.2.1
EXAMPLE: TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS
TWO LANE OPERATION, LATERAL SHIFT TAPER (SHORT TERM)

If cones/bollards are not adequately visible, install Temporary Hazard markers

Containment fence or tape placed at the boundary of the work area - see Note 3

Optional

Most roads consist of a painted centre-line

Buffer Speed - See Table

See Note 2

Return to Road Speed Limit

Return to Road Speed Limit

Navigational

If potential road does exist, signs must be placed as similar to the other roads

Common

REFER TO TABLES AND NOTES - FIGURE 1.2.2.1

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
TABLES AND NOTES - Figure 1.2.2.1

TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS - TWO LANE OPERATION
LATERAL SHIFT TAPER (SHORT TERM)

**LENGTH OF ZONE (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>&lt; 15</td>
<td>15</td>
<td>30</td>
<td>D* = 70</td>
<td>D*</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

**MAXIMUM SPACING OF CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

**MINIMUM RESIDUAL LANE WIDTH (m) – to allow 2-way traffic to continue**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

**MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**BUFFER SPEED (km/h)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
<th>40</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 or 90</td>
<td>n/a</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
9. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance
**FIGURE 1.2.2.2**
EXAMPLE: TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS
TWO LANE OPERATION, LATERAL SHIFT TAPER (LONG TERM)

If cones/bollards are not adequately visible, install Temporary Hazard markers

Containment fence or tape placed at the boundary of the work area - see Note 3

Most roads consist of a painted centre-line

**Return to Table of Contents**

**Reference:** AS1742.3

**DISTANCE LEGEND:**
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

**Note:** Drawing is not to scale
TABLES AND NOTES - Figure 1.2.2.2

TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS - TWO LANE OPERATION LATERAL SHIFT TAPER (LONG TERM)

### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>&lt; 15</td>
<td>15</td>
<td>30</td>
<td>D* = 70</td>
<td>D*</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td></td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>
* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>
* Cone height >= 700 mm

### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>
Subject to Clause 4.13.3

### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

NOTES:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
• If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   • Advance Warning -
     o T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     o Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   • Termination - T2-16A or T2-17A
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
9. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance
FIGURE 1.2.2.3
EXAMPLE: TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS
TWO LANE OPERATION, LATERAL SHIFT TAPER THROUGH AN INTERSECTION (SHORT TERM)

FLAShING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Containment fence or tape placed at the boundary of the work area - see Note 3

Refer to Tables and Notes - Figure 1.2.2.3

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
TABLES AND NOTES - Figure 1.2.2.3

TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS - TWO LANE OPERATION LATERAL SHIFT TAPER THROUGH AN INTERSECTION (SHORT TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>&lt; 15</td>
<td>15</td>
<td>30</td>
<td>D* = 70</td>
<td>D*</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m) – to allow 2-way traffic to continue

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 or 90</td>
<td>n/a</td>
<td>60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
<td>60</td>
</tr>
</tbody>
</table>

NOTES:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area:
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited.
8. For additional information on night works, please refer to AS1742.3 section 2.3.6.
9. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance.
FIGURE 1.2.2.4
EXAMPLE : TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS
TWO LANE OPERATION, LATERAL SHIFT TAPER THROUGH AN INTERSECTION (LONG TERM)

Buffer Speed - See Table
See Note 6
Return to Road Speed Limit (Permanent Speed)

See Note 2
Return Speed (Temporary Speed)

Temporary Hazard Markers - See Note 7

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage) OR TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Containment fence or tape placed at the boundary of the work area - see Note 3

See Note 9
If required prohibit parking

Most roads consist of a painted centre line

When workers are present, set up sign as shown in box

Return to Road Speed Limit (Permanent Speed)

REFERENCE : AS1742.3

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note : Drawing is not to scale
# TABLES AND NOTES - Figure 1.2.2.4

## TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS - TWO LANE OPERATION

### LATERAL SHIFT TAPER THROUGH AN INTERSECTION (LONG TERM)

#### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ = AW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td>AW D = 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“Yes” = 300 +/- 50</td>
</tr>
<tr>
<td>TA &lt; 15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“No” = AW</td>
</tr>
<tr>
<td>SB ***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Optional, 15</td>
</tr>
<tr>
<td>ML Optional, 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Optional, 15</td>
</tr>
<tr>
<td>ML Optional, 15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Optional, 15</td>
</tr>
<tr>
<td>ML Optional, 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table

** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic

*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>SB 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>WA 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>ML – if installed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW 3.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL 0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
</tbody>
</table>

80 or 90 n/a 60
100 or 110 80 60

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

### NOTES:

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area:
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
Continue for Figure 1.2.2.4

- If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded.

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

5. Provision shall be made for pedestrians (including disabled persons) and bicycles.

6. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited.

8. For additional information on night works, please refer to AS1742.3 section 2.3.6.

9. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance.
**FIGURE 1.2.2.5**
EXAMPLE: TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS
TWO LANE OPERATION, SIDE ROAD CLOSED (SHORT TERM)

- **BZ**: Buffer Zone (m)
- **AW**: Advance Warning Area (m)
- **TA**: Taper Area (m)
- **SB**: Safety Buffer (m)
- **WA**: Work Area (m)
- **ML**: Termination Area (m)
- **LW**: Minimum Residual lane width (m)
- **CL**: Minimum clearance from traffic to cones/bollards (m)

**Reference:** AS1742.3

**4.2**

**NOTES - FIGURE 1.2.2.5**

**DISTANCE LEGEND:**
- BZ = Buffer Zone (m)
- AW = Advance Warning Area (m)
- TA = Taper Area (m)
- SB = Safety Buffer (m)
- WA = Work Area (m)
- ML = Termination Area (m)
- LW = Minimum Residual lane width (m)
- CL = Minimum clearance from traffic to cones/bollards (m)

**Note:** Drawing is not to scale
# TABLES AND NOTES – Figure 1.2.2.5

## TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS - TWO LANE OPERATION WITH SIDE ROAD CLOSED (SHORT TERM)

### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>WA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table  
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic

### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>60</td>
</tr>
</tbody>
</table>

---

### NOTES:

1. Undertake a risk assessment  
2. If deemed necessary Install speed zone - it may be possible to retain the existing speed limit on the through road. Otherwise, set up a 40 km/h speed zone, unless a hazardous work area  
   - Length of 60 km/h speed zone shall be <= 200 metres  
   - Length of 40 km/h speed zone shall be <= 500 metres  
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres  
3. When workers or small items of plant are in use:  
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed  
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded  
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines  
5. Provision shall be made for pedestrians (including disabled persons) and bicycles  
6. Signs are to be set up to suit the situation, which includes advance warning, side road closed, local traffic only, speed limits and signed detour system  
7. Install appropriate signs:  
   - Advance Warning - T1-5A or T1-5B sign  
   - Termination - none required  
8. For additional information on night works, please refer to AS1742.3 section 2.3

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FIGURE 1.2.2.6
EXAMPLE: TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS
TWO LANE OPERATION, SIDE ROAD CLOSED (LONG TERM)

Buffer Speed - See Table
See Note 7
Return to Road Speed Limit (Permanent Speed)

When workers are present, set up sign as shown in box

Most roads consist of a painted centre-line

Containment fence or tape placed at the boundary of the work area - see Note 3

Reference: AS1742.3
4.2

REFER TO TABLES AND NOTES - FIGURE 1.2.2.6

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
TABLES AND NOTES - Figure 1.2.2.6

TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS - TWO LANE OPERATION WITH SIDE ROAD CLOSED (LONG TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 170</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a 60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80 60</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

NOTES:
1. Undertake a risk assessment
2. If deemed necessary Install speed zone - it may be possible to retain the existing speed limit on the through road. Otherwise, set up a 40 km/h speed zone, unless a hazardous work area
   - Length of 60 km/h speed zone shall be <= 200 metres
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Signs are to be set up to suit the situation, which includes advance warning, side road closed, local traffic only, speed limits and signed detour system
7. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
FIGURE 1.2.2.7
EXAMPLE: TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS
TWO LANE OPERATION, WITH TRAFFIC CONTROLLERS ON SIDE ROAD (SHORT TERM)

Most roads consist of a painted centre-line
If potential road does exist, signs must be placed as similar to the other roads

Containment fence or tape placed at the boundary of the work area
If cones/bollards are not adequately visible, install Temporary Hazard markers

See Note 11

Set up repeater PREPARE TO STOP signs on the same basis as side road

See Note 2

Return to Road Speed Limit

See Note 6

Return to Road Speed Limit

See Note 2

Buffer Speed - See Table
See Note 10

Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Buffer Speed - See Table

REFERENCE: AS1742.3
4.2 & 4.10

REFER TO TABLES AND NOTES - FIGURE 1.2.2.7

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
### Length of Zone (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2 and 3, as applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table  
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic  
*** A Safety Buffer Zone is recommended

### Maximum Spacing of Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

### Minimum Residual Lane Width (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

### Minimum Clearance From Traffic to Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### Buffer Speed (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>60</td>
</tr>
</tbody>
</table>

### Desirable Maximum Length of Single-lane Operation Under Reversible Flow

<table>
<thead>
<tr>
<th>Traffic Volume (vph)</th>
<th>Length of single-lane section – measured from one control point to the other (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 701</td>
<td>70</td>
</tr>
<tr>
<td>601 - 700</td>
<td>100</td>
</tr>
<tr>
<td>501 - 600</td>
<td>150</td>
</tr>
<tr>
<td>301 - 500</td>
<td>250</td>
</tr>
<tr>
<td>&lt;= 300</td>
<td>500</td>
</tr>
</tbody>
</table>

### Notes:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area  
   - Length of 40 km/h speed zone shall be <= 500 metres  
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. For the conditions of use –  
   - Observe the desirable maximum length of single-lane operation under reversible flow table (as above)  
   - High visibility clothing shall be worn by traffic controllers
• Stop/Slow traffic bat shall be used (except if a boom gate is installed)
• For night works an illuminated wand must be used
• Portable two-way radios or similar shall be used (unless in blasting area) for communication between controllers unless they are able to communicate by sight
• Traffic controllers shall not be located where the sight distance is less than 1.5D between controller and on-coming traffic. Determine “D” from Length of Zone table above selecting values from “AW” zone
• Traffic controllers shall take rest breaks of 15 minutes or more for at least every 2 hours
• Minimise the risk of end-of-queue collisions - see AS1742.3 Clause 4.7.8

4. When workers or small items of plant are in use:
   • If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   • If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
6. Provision shall be made for pedestrians (including disabled persons) and bicycles
7. Install appropriate signs:
   • Advance Warning - T1-5A or T1-5B sign
   • Termination - none required
8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
9. For additional information on night works, please refer to AS1742.3 section 2.3.6
10. If distance A exceeds 4D, repeater sign(s) (prepare to stop) are required at evenly spaced distance(s)
11. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance
FIGURE 1.2.2.8
EXAMPLE: TWO LANE - TWO WAY ROADS, WITH INTERSECTIONS
TWO LANE OPERATION, WITH TRAFFIC CONTROLLERS ON SIDE ROAD (LONG TERM)

Buffer Speed - See Table
See Note 7
Return to Road Speed Limit (Permanent Speed)

When closing lane, set up signs as shown in box

Containment fence or tape placed at the boundary of the work area - see Note 3
If cones/bollards are not adequately visible, install Temporary Hazard markers

Reference: AS1742.3 4.2 & 4.10
When closing lane, set up signs as shown in box

REFER TO TABLES AND NOTES - FIGURE 1.2.2.8

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
### Tables and Notes - Figure 1.2.2.8

**Two Lane - Two Way Roads, with Intersections - Two Lane Operation with Traffic Controllers on Side Road (Long Term)**

#### Length of Zone (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“No” = AW</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“Yes” = 300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2 and 3, as applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D" = speed of approaching traffic
*** A Safety Buffer Zone is recommended

#### Maximum Spacing of Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### Minimum Residual Lane Width (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### Minimum Clearance from Traffic to Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### Buffer Speed (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
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<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>60</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

#### Desirable Maximum Length of Single-Lane Operation under Reversible Flow

<table>
<thead>
<tr>
<th>Traffic Volume (vph)</th>
<th>Length of single-lane section – measured from one control point to the other (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 701</td>
<td>70</td>
</tr>
<tr>
<td>601 - 700</td>
<td>100</td>
</tr>
<tr>
<td>501 - 600</td>
<td>150</td>
</tr>
<tr>
<td>301 - 500</td>
<td>250</td>
</tr>
<tr>
<td>&lt;= 300</td>
<td>500</td>
</tr>
</tbody>
</table>

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site.
NOTES:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. For the conditions of use –
   - Observe the desirable maximum length of single-lane operation under reversible flow table (as above)
   - High visibility clothing shall be worn by traffic controllers
   - Stop/Slow traffic bat shall be used (except if a boom gate is installed)
   - For night works an illuminated wand must be used
   - Length of 40 km/h speed zone shall be <= 500 metres
     - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
   - For the conditions of use –
     - Observe the desirable maximum length of single-lane operation under reversible flow table (as above)
     - High visibility clothing shall be worn by traffic controllers
     - Stop/Slow traffic bat shall be used (except if a boom gate is installed)
     - For night works an illuminated wand must be used
     - Traffic controllers shall not be located where the sight distance is less than 1.5D between controller and
       on-coming traffic. Determine “D” from Length of Zone table above selecting values from “AW” zone
     - Traffic controllers shall take rest breaks of 15 minutes or more for at least every 2 hours
     - Minimise risk of end of queue collisions (refer to AS1742.3 clause 4.7.8)
4. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance
     area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment
     fence or tape, then these devices may be excluded
5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of
   traffic as defined e.g. cones, bollards or edge lines
6. Provision shall be made for pedestrians (including disabled persons) and bicycles
7. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A
8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the
   cone spacing, or T5-5 may be used where space is limited
9. For additional information on night works, please refer to AS1742.3 section 2.3.6
10. If distance A exceeds 4D, repeater sign(s) (prepare to stop) are required at evenly spaced distance(s)
11. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a
    leg of road, erect appropriate repeater speed signs within this distance
FIGURE 1.3.1
EXAMPLE: TWO LANE - TWO WAY ROADS, ON ROUNDBOATS
PART LANE CLOSURE (SHORT TERM)

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

OR

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Contention fence or tape placed at the boundary of the work area - see Note 3

If required prohibit parking

If cones/bollards are not adequately visible, install Temporary Hazard markers

REFER TO TABLES AND
NOTES - FIGURE 1.3.1

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
### TABLES AND NOTES - Figure 1.3.1

#### TWO LANE - TWO WAY ROADS, ON ROUNDABOUTS

**PART LANE CLOSURE (SHORT TERM)**

<table>
<thead>
<tr>
<th>ROAD SPEED (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BZ</strong></td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td><strong>AW</strong></td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td><strong>TA (1)</strong></td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>TA (2)</strong></td>
<td>&lt; 15</td>
<td>15</td>
<td>30</td>
<td>D* = 70</td>
<td>D*</td>
</tr>
<tr>
<td><strong>SB</strong></td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td><strong>WA</strong></td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ML</strong></td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table

** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic

*** A Safety Buffer Zone is recommended

**TA (1)** = Traffic control at beginning of taper

**TA (2)** = Lateral shift taper

<table>
<thead>
<tr>
<th>MAXIMUM SPACING OF CONES OR BOLLARDS (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROAD SPEED (km/h)</td>
</tr>
<tr>
<td><strong>TA</strong></td>
</tr>
<tr>
<td><strong>SB</strong></td>
</tr>
<tr>
<td><strong>WA</strong></td>
</tr>
<tr>
<td><strong>ML – if installed</strong></td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

<table>
<thead>
<tr>
<th>MINIMUM RESIDUAL LANE WIDTH (m) – to allow 2-way traffic to continue</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROAD SPEED (km/h)</td>
</tr>
<tr>
<td><strong>LW</strong></td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

<table>
<thead>
<tr>
<th>MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROAD SPEED (km/h)</td>
</tr>
<tr>
<td><strong>CL</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BUFFER SPEED (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROAD SPEED (km/h)</td>
</tr>
<tr>
<td>40 or 90</td>
</tr>
<tr>
<td>80 or 110</td>
</tr>
</tbody>
</table>

#### NOTES:

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
Continue for Figure 1.3.1

- Advance Warning - T1-5A or T1-5B sign
- Termination - none required

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited

8. For additional information on night works, please refer to AS1742.3 section 2.3.6

9. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance. Place signs as close to traffic as practical, safe, as possible to ensure they are not obscured from driver's vision.
FIGURE 1.3.2
EXAMPLE: TWO LANE - TWO WAY ROADS, ON ROUNDBOUTS
PART LANE CLOSURE (LONG TERM)

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes < 1500 vpd with no less than one lamp visible from any direction

Buffer Speed - See Table
END ROAD WORK
See Note 6
Return to Road Speed Limit (Permanent Speed)

When workers are present, set up signs as shown in box

Containment fence or tape placed at the boundary of the work area - see Note 3

If required prohibit parking
If cones/bollards are not adequately visible, install Temporary hazard markers

Width of one lane is required

Return to Road Speed Limit (Permanent Speed)
See Note 6
Return Speed (Temporary Speed)

Return Speed (Temporary Speed)

Most roads consist of a painted centre-line

Buffer Speed - See Table
ROAD WORK AHEAD
See Note 6

Refer to Tables and Notes - Figure 1.3.2

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale

Reference: AS1742.3
4.2
TABLES AND NOTES - Figure 1.3.2

TWO LANE - TWO WAY ROADS, ON ROUNDABOUTS
PART LANE CLOSURE (LONG TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA (1)</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>n/a</td>
<td>“No” = AW</td>
</tr>
<tr>
<td>TA (2)</td>
<td>&lt; 15</td>
<td>15</td>
<td>30</td>
<td>D* = 70</td>
<td>D*</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended
TA (1) = Traffic control at beginning of taper
TA (2) = Lateral shift taper

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m) – to allow 2-way traffic to continue

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 or 90</td>
<td>n/a 60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80 60</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

NOTES:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area
   • Length of 40 km/h speed zone shall be <= 500 metres
   • Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
Continue for Figure 1.3.2

- If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
- If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
9. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance. Place signs as close to traffic as practical, safe, as possible to ensure they are not obscured from driver’s vision.
FIGURE 2.1.1.1
EXAMPLE: MULTI LANE ROADS, MID BLOCK
UNDIVIDED CARRIAGEWAY, MERGE TAPER (SHORT TERM)

Containment fence or tape placed at the boundary of the work area - see Note 3

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

If cones/bollards are not adequately visible, install Temporary Hazard markers

Temporary Hazard Makers - See Note 7

REFER TO TABLES AND NOTES - FIGURE 2.1.1.1

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
## TABLES AND NOTES - Figure 2.1.1.1

**MULTI LANE ROADS, MID BLOCK - UNDIVIDED CARRIAGeway**

**MERGE TAPER (SHORT TERM)**

### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td>5</td>
<td>Optional 15</td>
<td>5</td>
<td>Optional 15</td>
<td>5</td>
<td>Optional 15</td>
<td>5</td>
<td>Optional 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>60</th>
<th>40</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 or 90</td>
<td>n/a</td>
<td>n/a</td>
<td>60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
<td>80</td>
<td>60</td>
</tr>
</tbody>
</table>

### NOTES:

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

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5. Provision shall be made for pedestrians (including disabled persons) and bicycles.
6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited.
8. For additional information on night works, please refer to AS1742.3 section 2.3.6.
9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s).
Figure 2.1.1.2
Example: Multi Lane Roads, Mid Block
Undivided Carriageway, Merge Taper (Long Term)

Set up repeater Lane Status signs (including other end of road) as similar to Figure 2.1.1.1 - see Note 9

Containment fence or tape placed at the boundary of the work area - see Note 3

Flashing Arrow Board - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

Two Rotating Flashing Lamps - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

If cones/bollards are not adequately visible, install Temporary Hazard markers

Temporary Hazard Makers - See Note 7

Refer to Tables and Notes - Figure 2.1.1.2

Distance Legend:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
### MULTI LANE ROADS, MID BLOCK - UNDIVIDED CARRIAGEWAY

**MERGE TAPER (LONG TERM)**

#### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/− 50</td>
<td>300 +/− 50</td>
<td>300 +/− 50</td>
<td>300 +/− 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
</tr>
<tr>
<td>ML</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

**NOTES:**

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
Continue for Figure 2.1.1.2

- If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed.
- If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded.

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

5. Provision shall be made for pedestrians (including disabled persons) and bicycles.

6. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited.

8. For additional information on night works, please refer to AS1742.3 section 2.3.6.

9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s).
FIGURE 2.1.1.3
EXAMPLE: MULTI LANE ROADS, MID BLOCK
UNDIVIDED CARRIAGEWAY, MERGE AND LATERAL SHIFT TAPER (SHORT TERM)

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

if ≥ 1.5D refer to Tables and Notes - Figure 2.1.1.3 “Length of Zone”
Temporary Hazard Makers - See Note 7

REFERENCES - TABLES AND NOTES - FIGURE 2.1.1.3

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale

Return to Road Speed Limit
Set up repeater Lane Status signs as similar to other end
Buffer Speed - See Table
Return to Road Speed Limit
See Note 2
See Note 6
See Note 2

Containment fence or tape placed at the boundary of the work area - See Note 3
If cones/bollards are not adequately visible, install Temporary Hazard markers

Reference: AS1742.3
4.2

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### TABLES AND NOTES - Figure 2.1.1.3

#### MULTI LANE ROADS, MID BLOCK - UNDIVIDED CARRIAGEWAY

**MERGE AND LATERAL SHIFT TAPERS (SHORT TERM)**

<table>
<thead>
<tr>
<th>Length of Zone (m)</th>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td></td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>WA</td>
<td>Optional</td>
<td>5</td>
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<td>5</td>
<td>Optional</td>
<td>15</td>
<td>Optional</td>
<td>15</td>
<td>Optional</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Maximum Spacing of Cones or Bollards (m)</th>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td></td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td></td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA</td>
<td>**</td>
<td>4</td>
<td>4</td>
<td>18 (12**)</td>
<td>18 (12**)</td>
<td>24 (18**)</td>
</tr>
<tr>
<td>ML – if installed</td>
<td></td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm
** Apply this to cones on centre-line of the carriageway without work

#### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Minimum Residual Lane Width (m)</th>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td></td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Minimum Clearance from Traffic to Cones or Bollards (m)</th>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td></td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Buffer Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Speed (km/h)</td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

**NOTES:**

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
Continue for Figure 2.1.1.3

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)
FIGURE 2.1.1.4
EXAMPLE: MULTI LANE ROADS, MID BLOCK
UNDIVIDED CARRIAGEWAY, MERGE AND LATERAL SHIFT TAPER (LONG TERM)

Set up repeater Lane Status signs (including other leg of road) as similar to FIGURE 2.1.1.3 - see Note 9

When workers are present, set up signs as shown in box

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

if > 1.5D refer to Tables and Notes - Figure 2.1.1.4 "Length of Zone"

Temporary Hazard Markers - See Note 7

REFER TO TABLES AND NOTES - FIGURE 2.1.1.4

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale

Containment fence or tape placed at the boundary of the work area - See Note 3

If cones/bollards are not adequately visible, install Temporary Hazard markers

Return to Road Speed Limit (Permanent Speed)

Buffer Speed - See Table

Return to Road Speed Limit (Permanent Speed)

Buffer Speed - See Table

See Note 2

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### TABLES AND NOTES - Figure 2.1.1.4

**MULTI LANE ROADS, MID BLOCK - UNDIVIDED CARRIAGEWAY**
**MERGE AND LATERAL SHIFT TAPERS (LONG TERM)**

#### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>ML</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA **</td>
<td>4</td>
<td>4</td>
<td>18 (12**)</td>
<td>18 (12**)</td>
<td>24 (18**)</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm
** Apply this to cones on centre-line of the carriageway without work

#### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

#### NOTES:

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
• If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
• If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   • Advance Warning -
     o T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     o Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   • Termination - T2-16A or T2-17A
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)
FIGURE 2.1.2.1
EXAMPLE: MULTI LANE ROADS, MID BLOCK
DIVIDED CARRIAGEWAY, MERGE TAPER (SHORT TERM)

Most roads consist of a painted centre-line

"D"

Containment fence or tape placed at the boundary of the work area - see Note 3

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Temporary Hazard Makers - See Note 7

If required prohibit parking

If cones/bollards are not adequately visible, install Temporary Hazard markers

See Note 9

Refer to tables and notes - figure 2.1.2.1

Distance legend:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
### TABLES AND NOTES - Figure 2.1.2.1

**MULTI LANE ROADS, MID BLOCK - DIVIDED CARRIAGEWAY**

**MERGE TAPER (SHORT TERM)**

#### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td>Optional 5</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). If at least one lane width is not available, close the lane; this may require closing the carriageway

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>80 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

#### NOTES:

1. Undertake a risk assessment
2. Install speed zone for the work site (which may be a buffer speed – see table above), and a speed zone for the work area when workers are present (40 km/h, unless a hazardous work area; on higher speed roads, and where it is safe to do so, installing a speed limit of 60 km/h may be appropriate)
   - Length of 60 km/h speed zone shall be >= 200 metres
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.
5. Provision shall be made for pedestrians (including disabled persons) and bicycles.
6. Install appropriate signs:
   • Advance Warning - T1-5A or T1-5B sign
   • Termination - none required
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited.
8. For additional information on night works, please refer to AS1742.3 section 2.3.6.
9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s).
FIGURE 2.1.2.2
EXAMPLE : MULTI LANE ROADS, MID BLOCK
DIVIDED CARRIAGEWAY, MERGE TAPER (LONG TERM)

Most roads consist of a painted centre line

Containment fence or tape placed at the boundary of the work area - See Note 3

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Temporary Hazard Makers - See Note 7

Refer to Tables and Notes - Figure 2.1.2.2

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
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A = Distance of Q + Aw

Note: Drawing is not to scale
## TABLES AND NOTES - Figure 2.1.2.2

### MULTI LANE ROADS, MID BLOCK - DIVIDED CARRIAGEWAY

#### MERGE TAPER (LONG TERM)

<table>
<thead>
<tr>
<th>BZ</th>
<th>AW</th>
<th>AW</th>
<th>AW</th>
<th>AW</th>
<th>Buffer speed applies?</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>“No” = AW</td>
</tr>
<tr>
<td>WA</td>
<td>ML</td>
<td>Optional 5</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table

** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic

*** A Safety Buffer Zone is recommended

### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

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</tbody>
</table>

* Cone height >= 700 mm

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<tr>
<th>Road Speed (km/h)</th>
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</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
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Subject to Clause 4.13.3

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<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). If at least one lane width is not available, close the lane; this may require closing the carriageway

### BUFFER SPEED (km/h)

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<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

### NOTES:

1. Undertake a risk assessment
2. Install speed zone for the work site (which may be a buffer speed – see table above), and a speed zone for the work area when workers are present (40 km/h, unless a hazardous work area; on higher speed roads, and where it is safe to do so, installing a speed limit of 60 km/h might be appropriate)
Continue for Figure 2.1.2.2

- Length of 60 km/h speed zone shall be >= 200 metres
- Length of 40 km/h speed zone shall be <= 500 metres
- Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres

3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

5. Provision shall be made for pedestrians (including disabled persons) and bicycles

6. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited

8. For additional information on night works, please refer to AS1742.3 section 2.3.6

9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)
FIGURE 2.1.2.3
EXAMPLE: MULTI LANE ROADS, MID BLOCK
DIVIDED CARRIAGeway, MERGE AND LATerAL SHIfT TAPER TO OPPOSITE CARRIAGeway (SHORT TERM)

See Clause 4.14.8 (c) Pedestrian Management: It may be necessary to supply personnel to assist, to install containment fences, and/or to use this sign

**LOOK BOTH WAYS**
**TWO-WAY TRAFFIC**

Return to Road Speed Limit

**FLAShING ARROW BOARD** - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage) OR
**TWO ROTATING FLAShING LAMPS** - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Reference: AS1742.3
4.2

>= 1.5 D See "Length of Zone" Table

Temporary Hazard Markers - See Note 7

TA

Refer to Tables and Notes - FIGURE 2.1.2.3

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

**Note**: Drawing is not to scale
### TABLES AND NOTES - Figure 2.1.2.3

**MULTI LANE ROADS, MID BLOCK - DIVIDED CARRIAGEWAY**

**MERGE AND LATERAL SHIFT TAPERS TO OPPOSITE CARRIAGEWAY (SHORT TERM)**

### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td>Optional 5</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table

**MAXIMUM SPACING OF CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA **</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

**MINIMUM RESIDUAL LANE WIDTH (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

**MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). If at least one lane is not available, close the lane; this may require closing the carriageway

**BUFFER SPEED (km/h)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

**NOTES:**

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
• If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded.

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

5. Provision shall be made for pedestrians (including disabled persons) and bicycles.

6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited.

8. For additional information on night works, please refer to AS1742.3 section 2.3.6.

9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s).
FIGURE 2.1.2.4
EXAMPLE: MULTI LANE ROADS, MID BLOCK
DIVIDED CARRIAGEWAY, MERGE AND LATERAL SHIFT TAPER TO OPPOSITE CARRIAGEWAY (LONG TERM)

See Clause 4.14.8 (c) Pedestrian Management: It may be necessary to supply personnel to assist, to install containment fences, and/or to use this sign.

Look Both Ways
Two Way Traffic

When workers are present, set up signs as shown in box.

Buffer Speed - See Table
See Note 6

ROTATING WARNING BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

OR

ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Reference: AS1742.3
4.2

Temporary Hazard Makers - See Note 7

REFER TO TABLES AND NOTES - FIGURE 2.1.2.4

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
### Tables and Notes - Figure 2.1.2.4

**Multi Lane Roads, Mid Block - Divided Carriageway**
**Merge and Lateral Shift Tapers to Opposite Carriageway (Long Term)**

<table>
<thead>
<tr>
<th>Length of Zone (m)</th>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td></td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
<td>No = AW</td>
<td>Yes = 300 +/- 50</td>
<td></td>
</tr>
<tr>
<td>AW</td>
<td></td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td></td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td></td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td></td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, "D" = speed of approaching traffic
*** A Safety Buffer Zone is recommended

### Maximum Spacing of Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Maximum Spacing of Cones or Bollards (m)</th>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td></td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td></td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA **</td>
<td></td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td></td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm
** Apply this to cones on centre-line of the carriageway without work
Note: Cone spacing through median shall be 2 m

### Minimum Residual Lane Width (m)

<table>
<thead>
<tr>
<th>Minimum Residual Lane Width (m)</th>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td></td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

### Minimum Clearance from Traffic to Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Minimum Clearance from Traffic to Cones or Bollards (m)</th>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td></td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). If at least one lane width is not available, close the lane; this may require closing the carriageway

### Buffer Speed (km/h)

<table>
<thead>
<tr>
<th>Buffer Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Speed (km/h)</td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

**This Figure** illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

**Notes:**
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

5. Provision shall be made for pedestrians (including disabled persons) and bicycles

6. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited

8. For additional information on night works, please refer to AS1742.3 section 2.3.6

9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)
FIGURE 2.1.2.5
EXAMPLE: MULTI LANE ROADS, MID BLOCK - DIVIDED CARRIAGEWAY
WORK CLEAR OF TRAFFIC LANES (SHORT TERM)

Return to Road Speed Limit

Most roads consist of a painted centre-line

Containment fence or tape placed at the boundary of the work area - See Note 3

See Note 2

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

OR

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

See Notes 2 and 6

Buffer Speed - See Table

REFER TO TABLES AND NOTES - FIGURE 2.1.2.5

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale

Reference: AS1742.3 4.2(a), (b), (c)
TABLES AND NOTES - Figure 2.1.2.5

MULTI LANE ROADS, MID BLOCK - DIVIDED CARRIAGEWAY
WORK CLEAR OF TRAFFIC LANES (SHORT TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m) *

Note: Required if Work Area < 3 metres to traffic and a Road Safety Barrier System is not installed

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110**</th>
</tr>
</thead>
<tbody>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Shall be placed along kerb line or if no kerb on edge of the traffic lane with clearance as per Table below
** Cone height >= 700 mm

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

NOTES:
1. Undertake a risk assessment
2. Install speed zone and advance warning sign(s) as follows:
   - >= 6 metres clearance from the nearest edge of a lane carrying traffic to the entire work area including all vehicles and plant:
     1) Speed limit not mandated
     2) When workers or any plant are visible to passing traffic, a workers (symbolic) sign should be placed at the left side of the roadway in advance of the work area
     3) No requirement for a vehicle mounted warning device
   - >= 3 metres to < 6 metres clearance from the nearest edge of a lane carrying traffic to the work area including all vehicles and plant:
     1) 80 km/h speed limit shall be installed in speed zones > 80 km/h where the traffic volumes are > 10,000 vpd. Length of speed zone should be >= 500 metres
     2) Install workers sign (symbolic)
     3) Operate a vehicle mounted warning device
     4) Install a containment fence or tape as the work area draws near the 3 metres limit
   - If the clearance is < 3 metres between the nearest edge of a lane carrying traffic to the entire work area, install one of the following systems:
     1) “Road Safety Barrier System” (not shown in this figure), refer to AS1742.3 clause 4.2(c)(i)
     2) A 40 km/h speed zone, unless a hazardous work area
        • Length of 40 km/h speed zone shall be <= 500 metres
        • Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
     Other signs and devices according to the following notes
3. When workers or small items of plant are in use:
If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed.

If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded.

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

5. Provision shall be made for pedestrians (including disabled persons) and bicycles.

6. Install appropriate signs (other than allowed in note 2 above):
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required

7. For additional information on night works, please refer to AS1742.3 section 2.3.6.
FIGURE 2.1.2.6
EXAMPLE: MULTI LANE ROADS, MID BLOCK - DIVIDED CARRIAGeway
WORK CLEAR OF TRAFFIC LANES (LONG TERM)

Most roads consist of a painted centre-line

Containment fence or tape placed at the boundary of the work area
- See Note 3

See Note 2

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Reference: AS1742.3 4.2(a), (b), (c)

REFER TO TABLES AND NOTES - FIGURE 2.1.2.6

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
TABLES AND NOTES - Figure 2.1.2.6

MULTI LANE ROADS, MID BLOCK - DIVIDED CARRIAGeway
WORK CLEAR OF TRAFFIC LANES (LONG TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m) *

Note: Required if Work Area < 3 metres to traffic and a Road Safety Barrier System is not installed

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110**</th>
</tr>
</thead>
<tbody>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Shall be placed along kerb line or if no kerb on edge of the traffic lane with clearance as per Table below
** Cone height >= 700 mm

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a 60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80 60</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

NOTES:
1. Undertake a risk assessment
2. Install speed zone and advance warning sign(s) in accordance to long term work site requirements. When workers are on site, set up any additional sign(s) as follows:
   - >= 6 metres clearance from the nearest edge of a lane carrying traffic to the entire work area including all vehicles and plant:
     1) Speed limit not mandated
     2) When workers or any plant are visible to passing traffic, a workers (symbolic) sign should be placed at the left side of the roadway in advance of the work area
     3) No requirement for a vehicle mounted warning device
   - >= 3 metres to < 6 metres clearance from the nearest edge of a lane carrying traffic to the work area including all vehicles and plant:
     1) 80 km/h speed limit shall be installed in speed zones > 80 km/h where the traffic volumes are > 10,000 vpd. Length of speed zone should be >= 500 metres
     2) Install workers sign (symbolic)
     3) Operate a vehicle mounted warning device
     4) Install a containment fence or tape as the work area draws near the 3 metres limit
Continue for Figure 2.1.2.6

- If the clearance is < 3 metres between the nearest edge of a lane carrying traffic to the entire work area, install one of the following systems:
  1) “Road Safety Barrier System” (not shown in this figure), refer to AS1742.3 clause 4.2(c)(i)
  2) A 40 km/h speed zone, unless a hazardous work area
     - Length of 40 km/h speed zone shall be <= 500 metres
     - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres

  Other signs and devices according to the following notes

  3. When workers or small items of plant are in use:
     - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
     - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

  4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

  5. Provision shall be made for pedestrians (including disabled persons) and bicycles

  6. Install appropriate signs (other than allowed in note 2 above):
     - Advance Warning -
       - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
       - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
     - Termination - T2-16A or T2-17A

  7. For additional information on night works, please refer to AS1742.3 section 2.3.6
FIGURE 2.2.1.1
EXAMPLE : MULTI LANE ROADS, WITH INTERSECTIONS
UNDIVIDED CARRIAGEWAY, MERGE TAPER NEAR INTERSECTION (SHORT TERM)

Buffer Speed - See Table

See Note 9

See Note 2

See Note 6

Return to Road Speed Limit

Temporary Hazard Makers - See Note 7

If cones/bollards are not adequately visible, install Temporary Hazard markers

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage) OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Containment fence or tape placed at the boundary of the work area - see Note 3

WA See Note 10

CL

BZ

TA

SB

ML

LW

AW

Refer to Tables and Notes - FIGURE 2.2.1.1

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
## LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>Approach D** = 70 Other 2D** = 140</td>
<td>Approach D**</td>
<td>Approach D**</td>
<td>Approach D**</td>
<td>Approach D**</td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML Optional 5</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

## MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

## MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

## MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

## BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

## NOTES:

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
Continue for Figure 2.2.1.1

- If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)
10. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance.
FIGURE 2.2.1.2
EXAMPLE: MULTI LANE ROADS, WITH INTERSECTIONS
UNDIVIDED CARRIAGEWAY, MERGE TAPER NEAR INTERSECTION (LONG TERM)

Reference: AS1742.3
4.2

REFER TO TABLES AND NOTES - FIGURE 2.2.1.2

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
### TABLES AND NOTES - Figure 2.2.1.2

**MULTI LANE ROADS, WITH INTERSECTIONS - UNDIVIDED CARRIAGEWAY**  
**MERGE TAPER NEAR INTERSECTION (LONG TERM)**

#### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>Approach D** = 70 Other 2D** = 140</td>
<td>Approach D** Other 2D**</td>
<td>Approach D** Other 2D**</td>
<td>Approach D** Other 2D**</td>
<td>Approach D** Other 2D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

##### Notes:

* Where applicable – see Buffer Speed Table  
** For 70 - 110 km/h road speeds, "D" = speed of approaching traffic  
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

#### NOTES:

1. Undertake a risk assessment  
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
Continue for Figure 2.2.1.2

- Length of 40 km/h speed zone shall be $\leq 500$ metres
- Length of 25 km/h speed zone should be $\geq 100$ metres and shall be $\leq 200$ metres

3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

5. Provision shall be made for pedestrians (including disabled persons) and bicycles

6. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds $\geq 90$ km/h)
   - Termination - T2-16A or T2-17A

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited

8. For additional information on night works, please refer to AS1742.3 section 2.3.6

9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)

10. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance.
FIGURE 2.2.1.3
EXAMPLE: MULTI LANE ROADS, WITH INTERSECTIONS
UNDIVIDED CARRIAGEWAY, MERGE TAPER THROUGH INTERSECTION (SHORT TERM)

Reference: AS 1742.3
4.2

WARNING:
- Flashing Arrow Board: Shall be used when traffic volume > 1500 vpd (Refer to AS 1742.3 for further details on usage)
- Two Rotating Flashing Lamps: May be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

RETURN TO TABLES AND NOTES - FIGURE 2.2.1.3

DISTANCE LEGEND:
- BZ = Buffer Zone (m)
- AW = Advance Warning Area (m)
- TA = Taper Area (m)
- SB = Safety Buffer (m)
- WA = Work Area (m)
- ML = Termination Area (m)
- LW = Minimum Residual lane width (m)
- CL = Minimum clearance from traffic to cones/bollards (m)
- Q = Predicted longest end of queue length (m) including site distances
- A = Distance of Q + Aw

Note: Drawing is not to scale
### TABLES AND NOTES - Figure 2.2.1.3

**MULTI LANE ROADS, WITH INTERSECTIONS - UNDIVIDED CARRIAGeway**

**MERGE TAPER THROUGH INTERSECTION (SHORT TERM)**

<table>
<thead>
<tr>
<th>LENGTH OF ZONE (m)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>110</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road Speed</strong> (km/h)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BZ</td>
<td></td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>+/− 30</td>
<td>+/− 50</td>
</tr>
<tr>
<td>AW+</td>
<td></td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>Appro</td>
<td>Approach</td>
<td>Approach</td>
<td>Approach</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D** = 70</td>
<td>D** = 140</td>
<td>D** = 140</td>
<td>D** = 140</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2D** = 140</td>
<td>2D** = 140</td>
<td>2D** = 140</td>
<td>2D** = 140</td>
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<td>2D** = 140</td>
<td>2D** = 140</td>
<td>2D** = 140</td>
</tr>
<tr>
<td>TA+</td>
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<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
</tr>
<tr>
<td>TA++</td>
<td></td>
<td>&lt;15</td>
<td>15</td>
<td>30</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>WA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional</td>
<td>5</td>
<td>Optional</td>
<td>5</td>
<td>Optional</td>
<td>15</td>
<td>Optional</td>
<td>15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table

**For 70 - 110 km/h road speeds, “D” = speed of approaching traffic**

*** A Safety Buffer Zone is recommended

+ Multi-lane road without median

++ Two-lane two-way road

### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA+</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>TA++</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB+</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>SB++</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA+</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA++</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site
NOTES:
1. Undertake a risk assessment – Allow for any permanent traffic control devices (traffic lights, stop or give-way signs) if they are present
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning -
     o T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     o Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)
10. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance. Place signs as close to traffic as practical, safe, as possible to ensure they are not obscured from driver's vision.
FIGURE 2.2.1.4
EXAMPLE: MULTI LANE ROADS, WITH INTERSECTIONS
UNDIVIDED CARRIAGEWAY, MERGE TAPER THROUGH INTERSECTION (LONG TERM)

When workers are present, set up signs as shown in box

Install repeater Lane Status signs as similar to Figure 2.2.1.3 - see Note 9

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with
no less than one lamp visible from any direction

Return to Road Speed Limit (Permanent Speed)

See Note 6

Buffer Speed - See Table

See Note 2

Return Speed (Temporary Speed)

Containment fence or tape placed at the boundary of the work area - see Note 3

See Note 10

Reference: AS1742.3
4.2

REFER TO TABLES AND NOTES - FIGURE 2.2.1.4

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
### Multi Lane Roads, with Intersections - Undivided Carriageway

**Merge Taper Through Intersection (Long Term)**

#### Length of Zone (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/-50</td>
<td>300 +/-50</td>
<td>300 +/-50</td>
<td>300 +/-50</td>
</tr>
<tr>
<td>AW+</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>Approach D** = 70</td>
<td>Departure 2D** = 140</td>
<td>Approach D**</td>
<td>Departure 2D**</td>
<td>Approach D**</td>
</tr>
<tr>
<td>AW++</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>2D**</td>
<td>2D**</td>
<td>2D**</td>
<td></td>
</tr>
<tr>
<td>TA+</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>TA++</td>
<td>&lt;15</td>
<td>15</td>
<td>30</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td></td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional 5</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td></td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table  
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic  
*** A Safety Buffer Zone is recommended  
+ Multi-lane road without median  
++ Two-lane two-way road

#### Maximum Spacing of Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA+</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>TA++</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB+</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>SB++</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA+</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA++</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm  
+ Multi-lane road without median  
++ Two-lane two-way road

#### Minimum Residual Lane Width (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### Minimum Clearance from Traffic to Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan shall be dependent on final available lane configuration

#### Buffer Speed (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>60</th>
<th>40</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 or 90</td>
<td>n/a</td>
<td>n/a</td>
<td>60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
<td>80</td>
<td>60</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site.
This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site.

NOTES:
1. Undertake a risk assessment – Allow for any permanent traffic control devices (traffic lights, stop or give-way signs) if they are present
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)
10. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance. Place signs as close to traffic as practical, safe, as possible to ensure they are not obscured from driver’s vision.
FIGURE 2.2.1.5
EXAMPLE: MULTI LANE ROADS, WITH INTERSECTIONS - UNDIVIDED CARRIAGEWAY, MERGE AND LATERAL SHIFT TAPERS THROUGH INTERSECTION (SHORT TERM)

Reference: AS1742.3 4.2

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Buffer Speed - See Table

Containment fence or tape placed at the boundary of the work area - see Note 3

If cones/bollards are not adequately visible, install Temporary Hazard markers

See Note 10

REFER TO TABLES AND NOTES - FIGURE 2.2.1.5

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
Set up repeater Lane Status signs as similar on other legs that contains cones/bollards

Buffer Speed - See Table

See Note 9

See Note 8

See Note 6

See Note 2

Return to Road Speed Limit

See Note 6

Return to Road Speed Limit

See Note 6
# Tables and Notes - Figure 2.2.1.5

## Multi Lane Roads, with Intersections - Undivided Carriageway

**Merge and Lateral Shift Tapers Through Intersection (Short Term)**

### Length of Zone (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>AW D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional 5</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td></td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table

** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic

*** A Safety Buffer Zone is recommended

### Maximum Spacing of Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA **</td>
<td>4</td>
<td>4</td>
<td>18 (12**)</td>
<td>18 (12**)</td>
<td>24 (18**)</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

** Apply this to cones on centre-line of the carriageway without work

### Minimum Residual Lane Width (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

### Minimum Clearance from Traffic to Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

### Buffer Speed (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

### Notes:

1. Undertake a risk assessment – Allow for any permanent traffic control devices (traffic lights, stop or give-way signs) if they are present
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)
10. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance. Place signs as close to traffic as practical, safe, as possible to ensure they are not obscured from driver’s vision.
### Tables and Notes - Figure 2.2.1.6

**Multi Lane Roads, with Intersections - Undivided Carriageway Merge and Lateral Shift Tapers through Intersection (Long Term)**

#### Length of Zone (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td>Optional 5</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table

** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic

*** A Safety Buffer Zone is recommended

#### Maximum Spacing of Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA **</td>
<td>4</td>
<td>4</td>
<td>18 (12**)</td>
<td>18 (12**)</td>
<td>24 (18**)</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

** Apply this to cones on centre-line of the carriageway without work

#### Minimum Residual Lane Width (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### Minimum Clearance from Traffic to Cones or Bollards (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

#### Buffer Speed (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>60</th>
<th>40</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 or 90</td>
<td>n/a</td>
<td>n/a</td>
<td>60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
<td>80</td>
<td>60</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

**Notes:**

1. Undertake a risk assessment – Allow for any permanent traffic control devices (traffic lights, stop or give-way signs) if they are present
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
Length of 25 km/h speed zone should be $\geq$ 100 metres and shall be $\leq$ 200 metres

3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed.
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded.

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

5. Provision shall be made for pedestrians (including disabled persons) and bicycles.

6. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds $\geq$ 90 km/h)
   - Termination - T2-16A or T2-17A

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited.

8. For additional information on night works, please refer to AS1742.3 section 2.3.6.

9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s).

10. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance. Place signs as close to traffic as practical, safe, as possible to ensure they are not obscured from driver's vision.
FIGURE 2.2.1.7
EXAMPLE: MULTI LANE ROADS, WITH INTERSECTIONS
UNDIVIDED CARRIAGE, SIDE ROAD CLOSED (SHORT TERM)

Note: Drawing is not to scale

Refer to Tables and Notes - Figure 2.2.1.7

Distance Legend:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
### TABLES AND NOTES - Figure 2.2.1.7

**MULTI LANE ROADS, WITH INTERSECTIONS - UNDIVIDED CARRIAGEWAY**

**SIDE ROAD CLOSED (SHORT TERM)**

#### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>WA</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table

**For 70 - 110 km/h road speeds, “D” = speed of approaching traffic**

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre-line</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Road closure</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). If at least one lane width is not available, close the lane; this may require closing the carriageway

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 or 90</td>
<td>40</td>
</tr>
<tr>
<td>80 or 90</td>
<td>25</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
<tr>
<td>100 or 110</td>
<td>60</td>
</tr>
</tbody>
</table>

#### NOTES:

1. Undertake a risk assessment
2. If deemed necessary Install speed zone - it may be possible to retain the existing speed limit on the through road. Otherwise, set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 60 km/h speed zone shall be <= 200 metres
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
Continue for Figure 2.2.1.7

6. Signs are to be set up to suit the situation, which includes advance warning, side road closed, local traffic only, speed limits and signed detour system

7. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required

8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited

9. For additional information on night works, please refer to AS1742.3 section 2.3.6
FIGURE 2.2.1.8
EXAMPLE: MULTI LANE ROADS, WITH INTERSECTIONS
UNDIVIDED CARRIAGE, SIDE ROAD CLOSED (LONG TERM)

Note: Drawing is not to scale

REFER TO TABLES AND NOTES - FIGURE 2.2.1.8

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

When workers are present, set up signs as shown in box.

Reference: AS1742.3
4.2
# TABLES AND NOTES - Figure 2.2.1.8

## MULTI LANE ROADS, WITH INTERSECTIONS - UNDIVIDED CARRIAGEWAY

### SIDE ROAD CLOSED (LONG TERM)

#### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
<td>See Note 2</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table

** For 70 - 110 km/h road speeds, "D" = speed of approaching traffic

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre-line</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Road closure</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). If at least one lane width is not available, close the lane; this may require closing the carriageway

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

**This Figure** illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

#### NOTES:

1. Undertake a risk assessment
2. If deemed necessary Install speed zone - it may be possible to retain the existing speed limit on the through road. Otherwise, set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 60 km/h speed zone shall be <= 200 metres
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
Continue for Figure 2.2.1.8

- If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Signs are to be set up to suit the situation, which includes advance warning, side road closed, local traffic only, speed limits and signed detour system
7. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A
8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
9. For additional information on night works, please refer to AS1742.3 section 2.3.6
If distance D from the end of the Termination Area (ML) cannot be obtained prior to the intersection then the speed limit signs should be placed on side road and beyond the intersection.

Return to Road Speed Limit

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction.

Containment fence or tape placed at the boundary of the work area - see Note 3

Reference: AS1742.3
4.2

REFER TO TABLES AND NOTES - FIGURE 2.2.2.1

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
MULTI LANE ROADS, WITH INTERSECTIONS - DIVIDED CARRIAGeway
MERGE TAPER NEAR INTERSECTION (SHORT TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td>Optional 5</td>
<td>Optional 5</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). If at least one lane is not available, close the lane which may require closing the carriageway

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

NOTES:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area. Install a speed limit of 60 km/h if appropriate for roads with higher speeds and where it is safe to do so
   • Length of 60 km/h speed zone shall be >= 200 metres
   • Length of 40 km/h speed zone shall be <= 500 metres
   • Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   • If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   • If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)
FIGURE 2.2.2.2
EXAMPLE: MULTI LANE ROADS, WITH INTERSECTIONS
DIVIDED CARRIAGEWAY, MERGE TAPER NEAR INTERSECTION (LONG TERM)

If distance D from the end of the Termination Area (ML) cannot be obtained prior to the intersection then the speed limit signs should be placed on side road and beyond the intersection.

See Note 6

END ROAD WORK

Return to Road Speed Limit

FLAShING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage) OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Containment fence or tape placed at the boundary of the work area - see Note 3

When workers are present, set up signs as shown in box

Reference: AS1742.3 4.2

REFER TO TABLES AND NOTES - FIGURE 2.2.2.2

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
### TABLES AND NOTES - Figure 2.2.2.2

#### MULTI LANE ROADS, WITH INTERSECTIONS - DIVIDED CARRIAGeway

#### MERGE TAPER NEAR INTERSECTION (LONG TERM)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td>Optional 5</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
<td>Optional 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>60</th>
<th>40</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 or 90</td>
<td>n/a</td>
<td>n/a</td>
<td>60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
<td>80</td>
<td>60</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

#### NOTES:

1. Undertake a risk assessment
2. Install speed zone for the work site (which may be a buffer speed – see table above), and a speed zone for the work area when workers are present (40 km/h, unless a hazardous work area; on higher speed roads, and where it is safe to do so, installing a speed limit of 60 km/h might be appropriate)
   - Length of 60 km/h speed zone shall be >= 200 metres
   - Length of 40 km/h speed zone shall be <= 500 metres
Continue for Figure 2.2.2.2

- Length of 25 km/h speed zone should be $\geq$ 100 metres and shall be $\leq$ 200 metres

3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

5. Provision shall be made for pedestrians (including disabled persons) and bicycles

6. Install appropriate signs:
   - Advance Warning –
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds $\geq$ 90 km/h)
   - Termination - T2-16A or T2-17A

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited

8. For additional information on night works, please refer to AS1742.3 section 2.3.6

9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)
FIGURE 2.2.2.3
EXAMPLE : MULTI LANE ROADS, WITH INTERSECTIONS
DIVIDED CARRIAGEWAY, SIDE ROAD CLOSED (SHORT TERM)

Buffer Speed - See Table and See Note 2

See Note 2

See Note 6

Containment fence or tape placed at the boundary of the work area - see Note 3

Referent AS1742.3
4.2

Return to Road Speed Limit

Note: Drawing is not to scale

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
**TABLES AND NOTES - Figure 2.2.2.3**

**MULTI LANE ROADS, WITH INTERSECTIONS - DIVIDED CARRIAGEWAY**

**SIDE ROAD CLOSED (SHORT TERM)**

### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>WA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road closure</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). If at least one lane is not available, close the lane which may require closing the carriageway

### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>60 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

### NOTES:

1. Undertake a risk assessment
2. If deemed necessary install speed zone - it may be possible to retain the existing speed limit on one or both carriageways (observing the maximum speed in a work site). Otherwise, install 40 km/h, unless hazardous work area. Only install a speed limit on the carriageway remote from the closed road if required through a risk assessment. Place return speed signs to correspond with speed zones set up

   - Length of 60 km/h speed zone shall be >= 200 metres
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres

3. When workers or small items of plant are in use:

   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

5. Provision shall be made for pedestrians (including disabled persons) and bicycles
Continue for Figure 2.2.2.3

6. Signs are to be set up to suit the situation, which includes advance warning, side road closed, local traffic only, speed limits and signed detour system

7. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required

8. For additional information on night works, please refer to AS1742.3 section 2.3.6
FIGURE 2.2.2.4
EXAMPLE : MULTI LANE ROADS, WITH INTERSECTIONS
DIVIDED CARRIAGEWAY, SIDE ROAD CLOSED (LONG TERM)

Buffer Speed - See Table
See Note 6

When workers are present, set up signs as shown in box

Containment fence or tape placed at the boundary of the work area - see Note 3

Reference : AS1742.3
4.2

RETURN TO TABLES AND NOTES - FIGURE 2.2.2.4

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note : Drawing is not to scale
TABLES AND NOTES - Figure 2.2.2.4

MULTI LANE ROADS, WITH INTERSECTIONS - DIVIDED CARRIAGEWAY
SIDE ROAD CLOSED (LONG TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
<th>90*</th>
<th>100*</th>
<th>110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td>= AW</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>D** = 70</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road closure</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). If at least one lane is not available, close the lane which may require closing the carriageway

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>60 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>80 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

NOTES:

1. Undertake a risk assessment
2. If deemed necessary Install speed zone - it may be possible to retain the existing speed limit on one or both carriageways (observing the maximum speed in a work site). Otherwise, install 40 km/h, unless hazardous work area. Only install a speed limit on the carriageway remote from the closed road if required through a risk assessment. Place return speed signs to correspond with speed zones set up
   - Length of 60 km/h speed zone shall be >= 200 metres
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
Continue for Figure 2.2.2.4

3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed.
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded.

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

5. Provision shall be made for pedestrians (including disabled persons) and bicycles.

6. Signs are to be set up to suit the situation, which includes advance warning, side road closed, local traffic only, speed limits and signed detour system.

7. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A

8. For additional information on night works, please refer to AS1742.3 section 2.3.6.
FIGURE 2.3.1
EXAMPLE: MULTI LANE ROADS, ON ROUNDABOUT
MERGE TAPER (SHORT TERM)

Buffer Speed - See Table

Buffer Speed - See Table

Set up repeater Lane Status signs similarly on all legs - See Note 9

Refer to notes on four-lane road

REFERENCE: AS1742.3
4.2

Width of one-lane is required

If cones/bollards are not adequately visible, install Temporary Hazard markers

Refer to tables and notes - figure 2.3.1

DISTANCE LEGEND:

BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
TABLES AND NOTES - Figure 2.3.1

MULTI LANE ROADS, ON ROUNDABOUT
MERGE TAPER (SHORT TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>Undivided D** = 70 Two Lane Two Way 2D** = 140</td>
<td>Undivided D** Two Lane Two Way</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TL

Optional

Optional

Optional

Optional

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>80</td>
<td>n/a</td>
</tr>
</tbody>
</table>

NOTES:
1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
Continue for Figure 2.3.1

5. Provision shall be made for pedestrians (including disabled persons) and bicycles
6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
8. For additional information on night works, please refer to AS1742.3 section 2.3.6
9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s)
10. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance
**FIGURE 2.3.2**
EXAMPLE: MULTI LANE ROADS, ON ROUNDABOUT
MERGE TAPER (LONG TERM)

When workers are present, set up signs as shown in box

Set up repeater Lane Status signs as similar to FIGURE 2.3.1 on all legs - See Note 9

Refer to notes on multi-lane road

**REFER TO TABLES AND NOTES - FIGURE 2.3.2**

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

**Note:** Drawing is not to scale

Reference: AS1742.3 4.2

When workers are present, set up signs as shown in box

Buffer Speed - See Table

Return to Road Speed Limit (Permanent Speed)

See Note 6

Return Speed (Temporary Speed)

See Note 2

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage)

OR

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

See Note 10

Set up advance and speed signs as similar to the other two-lane road

Containment fence or tape placed at the boundary of the work area - see Note 3

Return to Road Speed Limit (Permanent Speed)

See Note 6

Buffer Speed - See Table

Return Speed (Temporary Speed)

See Note 2

End Road Work

See Note 6

Return to Road Speed Limit (Permanent Speed)
## TABLES AND NOTES - Figure 2.3.2

### MULTI LANE ROADS, ON ROUNDABOUT

#### MERGE TAPER (LONG TERM)

**LENGTH OF ZONE (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>Undivided D** = 70 Two Lane Two Way 2D** = 140</td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>115</td>
<td>130</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed Table
** For 70 - 110 km/h road speeds, "D" = speed of approaching traffic
*** A Safety Buffer Zone is recommended

**MAXIMUM SPACING OF CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

**MINIMUM RESIDUAL LANE WIDTH (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

**MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: Residual width shall form a complete lane (or lanes). WZTM plan will be dependent on final available lane configuration

**BUFFER SPEED (km/h)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>60</th>
<th>40</th>
<th>25</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Area Speed Limit as set up</td>
<td>n/a</td>
<td>n/a</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

**This Figure** illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

**NOTES:**

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area. Any of the installed speed limits shall apply to the traffic in each direction
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. When workers or small items of plant are in use:
Continue for Figure 2.3.2

- If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed.
- If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded.

4. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

5. Provision shall be made for pedestrians (including disabled persons) and bicycles.

6. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited)
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
   - Termination - T2-16A or T2-17A

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited.

8. For additional information on night works, please refer to AS1742.3 section 2.3.6.

9. If distance A exceeds 4D, repeater sign(s) (Lane Status) are required at evenly spaced distance(s).

10. If no Return to Road Speed Limit signs are present within a distance of 70 meters from the intersection on a leg of road, erect appropriate repeater speed signs within this distance.
FIGURE 3.1
EXAMPLE: UNSEALED ROADS
STATIC SITE WITHOUT ADVANCE WARNING SIGNS (SHORT TERM)

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes ≤ 1500 vpd with no less than one lamp visible from any direction

Reference: AS1742.3
4.5.3 (a)

One or more of these signs can be used, see Note 4

REFER TO TABLES AND NOTES - FIGURE 3.1

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
TABLES AND NOTES - Figure 3.1

UNSEALED ROADS
STATIC SITE WITHOUT ADVANCE WARNING SIGNS (SHORT TERM)

NOTES:
1. Undertake a risk assessment
2. Unsealed road – A road surfaces that is not sealed with i.e. asphalt, concrete etc
3. Advance signs may be omitted subject to the following conditions:
   - Vehicle mounted warning device on the work vehicle can be seen by approaching traffic ≥ 250 m
   - A traffic controller is not required
   - And:
     - Traffic volume is ≤ 20 vpd, or
     - Adequate room for two-way traffic to go beyond the work area
4. One or more of the following signs can be installed at various locations if the road surface has loose material that may be a hazard:
   - Slippery (symbolic) (T3-3)
   - Loose Stones (symbolic) (T3-9)
   - Loose Surface (T3-14)
Locate signs that are ≥ 100 metres ahead of the hazard
**FIGURE 3.2**
EXAMPLE: UNSEALED ROADS
STATIC SITE WITH ADVANCE WARNING SIGNS (LONG TERM)

**REFERENCE: AS1742.3 4.2**

**Refer to tables and notes - Figure 3.2**

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

**Note:** Drawing is not to scale

When workers are present, set up signs as shown in box

Maximum length of Work Site - See Note 3

See tables on Page 2 for the following:
- Maximum spacing of cones/bollards
- Minimum residual lane width (LW)
- Clearances traffic to cones/bollards (CL) - See Tables and Notes - Figure 3.2
- Buffer speed

See Note 3
# TABLES AND NOTES - Figure 3.2

## UNSEALED ROADS

### STATIC SITE WITH ADVANCE WARNING SIGNS (LONG TERM)

### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td></td>
<td>&quot;No&quot; = AW</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;Yes&quot; = 300 +/- 50</td>
<td></td>
</tr>
<tr>
<td>AW</td>
<td>D = 15</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>D**</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 3</td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 100 km/h road speeds, "D" = speed of approaching traffic
*** A Safety Buffer Zone is recommended

### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

### MINIMUM RESIDUAL ROADWAY WIDTH (m) – to allow 2-way traffic to continue

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>6.0</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
</tbody>
</table>

| 100 | 80 | 80 | 60 |

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

### NOTES:

1. Undertake a risk assessment
2. Unsealed road – A road surfaces that is not sealed with i.e. asphalt, concrete etc
3. Set up the appropriate speed zones
   - Maximum speed in work site shall be 80 km/h
   - Where workers are present, or other conditions require a lower speed than 80 km/h, Install speed zone of 60 km/m or 40 km/h (to suit conditions), unless a hazardous work area
     - Length of 80 km/h speed zone should be >= 500 metres
     - Length of 60 km/h speed zone shall be >= 200 metres
     - Length of 40 km/h speed zone shall be <= 500 metres
Continue for Figure 3.2

- Length of 25 km/h speed zone should be $\geq$ 100 metres and shall be $\leq$ 200 metres
  - The end of a speed zone shall be marked with End Speed Limit (R4-12) displaying the speed set up in the speed zone

4. One or more of the following signs can be installed at various locations if the road surface has loose material that may be a hazard:
   - Slippery (symbolic) (T3-3)
   - Loose Stones (symbolic) (T3-9)
   - Loose Surface (T3-14)

Locate signs that are $\geq$ 100 metres ahead of the hazard
**FIGURE 3.3**
**EXAMPLE: UNSEALED ROADS**
**STATIC SITE ON ROAD (SHORT TERM)**

**REFERENCE:** AS1742.3

4.2

---

**Containment fence or tape erected at limit of work area - see Note 5**

**FLASHING ARROW BOARD** - shall be used when traffic volumes > 1500 vpd (Refer to AS1742.3 for further details on usage)

**OR**

**TWO ROTATING FLASHING LAMPS** - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

**If cones/bollards are not adequately visible, install Temporary Hazard markers**

**Temporary Hazard Markers - See Note 8**

---

**REFER TO TABLES AND NOTES - FIGURE 3.3**

**DISTANCE LEGEND:**
- **BZ** = Buffer Zone (m)
- **AW** = Advance Warning Area (m)
- **TA** = Taper Area (m)
- **SB** = Safety Buffer (m)
- **WA** = Work Area (m)
- **ML** = Termination Area (m)
- **LW** = Minimum Residual lane width (m)
- **CL** = Minimum clearance from traffic to cones/bollards (m)

**Note:** Drawing is not to scale
TABLES AND NOTES - Figure 3.3

UNSEALED ROADS
STATIC SITE ON ROAD (SHORT TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 15</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>D**</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 3</td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 100 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL ROADWAY WIDTH (m) – to allow 2-way traffic to continue

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>6.0</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>100</td>
<td>80</td>
</tr>
</tbody>
</table>

NOTES:
1. Undertake a risk assessment
2. Unsealed road – A road surfaces that is not sealed with i.e. asphalt, concrete etc
3. Set up the appropriate speed zones:
   - Where workers are present, or other conditions require a lower speed than 80 km/h, Install speed zone of 60 km/h or 40 km/h (to suit conditions), unless a hazardous work area
     - Length of 60 km/h speed zone shall be >= 200 metres
     - Length of 40 km/h speed zone shall be <= 500 metres
     - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
   - The end of a speed zone shall be marked with End Speed Limit (R4-12) displaying the speed set up in the speed zone
4. One or more of the following signs can be installed at various locations if the road surface has loose material that may be a hazard:
   - Slippery (symbolic) (T3-3)
   - Loose Stones (symbolic) (T3-9)
   - Loose Surface (T3-14)
     Locate signs that are >= 100 metres ahead of the hazard
5. When workers or small items of plant are in use:
Continue for Figure 3.3

- If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
- If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

6. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
7. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
9. For additional information on night works, please refer to AS1742.3 section 2.3.6
FIGURE 3.4
EXAMPLE: UNSEALED ROADS
STATIC SITE ON ROAD (LONG TERM)

Containment fence or tape placed at the boundary of the work area - see Note 5

FLASHING ARROW BOARD - shall be used when traffic volume ≥ 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes ≤ 1500 vpd with no less than one lamp visible from any direction

If cones/bollards are not adequately visible, install Temporary Hazard markers
Temporary Hazard Markers - See Note 8

Refer to Tables and Notes - Figure 3.4

Distance Legend:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale

Reference: AS1742.3
4.2

One or more of these signs can be used, see Note 4

Maximum length of Work Site - See Note 3

When workers are present, set up signs as shown in box

See Note 3
See Note 7
See Note 4
### TABLES AND NOTES - Figure 3.4

#### UNSEALED ROADS

**STATIC SITE ON ROAD (LONG TERM)**

<table>
<thead>
<tr>
<th>ROAD SPEED (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>Buffer speed applies?</td>
</tr>
<tr>
<td>AW</td>
<td>D = 15</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>D**</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 3</td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 100 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>ROAD SPEED (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM RESIDUAL ROADWAY WIDTH (m) – to allow 2-way traffic to continue

<table>
<thead>
<tr>
<th>ROAD SPEED (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>6.0</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>ROAD SPEED (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>ROAD SPEED (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
</tbody>
</table>

100 80 80 60

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

### NOTES:

1. Undertake a risk assessment
2. Unsealed road – A road surfaces that is not sealed with i.e. asphalt, concrete etc
3. Set up the appropriate speed zones.
   - Maximum speed in work site shall be 80 km/h
   - Where workers are present, or other conditions require a lower speed than 80 km/h, install speed zone of 60 km/m or 40 km/h (to suit conditions), unless a hazardous work area
     - Length of 80 km/h speed zone should be >= 500 metres
     - Length of 60 km/h speed zone shall be >= 200 metres
     - Length of 40 km/h speed zone shall be <= 500 metres
Length of 25 km/h speed zone should be \( \geq 100 \) metres and shall be \( \leq 200 \) metres

- The end of a speed zone shall be marked with End Speed Limit (R4-12) displaying the speed set up in the speed zone

4. One or more of the following signs can be installed at various locations if the road surface has loose material that may be a hazard:
   - Slippery (symbolic) (T3-3)
   - Loose Stones (symbolic) (T3-9)
   - Loose Surface (T3-14)

   Locate signs that are \( \geq 100 \) metres ahead of the hazard

5. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

6. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

7. Install appropriate signs:
   - **Advance Warning** -
     - T1-3-2B or T1-1A
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds \( \geq 90 \) km/h)
   - **Termination** - T2-16A or T2-17A

8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited

9. For additional information on night works, please refer to AS1742.3 section 2.3.6
FIGURE 3.5
EXAMPLE: UNSEALED ROADS
WITH SINGLE TRAFFIC CONTROLLER (SHORT TERM)

Containment fence or tape placed at the boundary of the work area - see Note 5

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes ≤ 1500 vpd with no less than one lamp visible from any direction

If cones/bollards are not adequately visible, install Temporary Hazard markers

See Note 9

REFER TO TABLES AND NOTES - FIGURE 3.5

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
Cl = Minimum clearance from traffic to cones/bollards (m)
Q = Predicted longest end of queue length (m) including site distances
A = Distance of Q + Aw

Note: Drawing is not to scale
## TABLES AND NOTES - Figure 3.5

### UNSEALED ROADS WITH SINGLE TRAFFIC CONTROLLER (SHORT TERM)

#### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 15</td>
<td>Approach D**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Departure 2D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>D**</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 3</td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 100 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
</tbody>
</table>

| Road Speed (km/h) | 100 | 80 | 80 | 60 |

### NOTES:

1. Undertake a risk assessment
2. Unsealed road – A road surfaces that is not sealed with i.e. asphalt, concrete etc
3. For the conditions of use:
   - Single lane section is <= 50 metres
   - Traffic volume is <= 20 vph
   - The traffic controller must have good view of traffic advancing from both directions when stationed at one end of the job
4. Set up a 40 km/h speed zone, unless a hazardous work area. The end of a speed zone shall be marked with End Speed Limit (R4-12) displaying the speed set up in the speed zone
5. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
6. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
7. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
8. One or more of the following signs can be installed at various locations if the road surface has loose material that may be a hazard:
   - Slippery (symbolic) (T3-3)
   - Loose Stones (symbolic) (T3-9)
   - Loose Surface (T3-14)
   Locate signs that are >= 100 metres ahead of the hazard
9. If distance A exceeds 4D, repeater sign(s) (prepare to stop) are required at evenly spaced distance(s)
FIGURE 3.6
EXAMPLE: UNSEALED ROADS
WITH GIVEWAY SIGN (SHORT TERM)

Containment fence or tape placed at the boundary of the work area - see Note 4

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

OR

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

Temporary Hazard Makers - See Note 7

REFER TO TABLES AND NOTES - FIGURE 3.6

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
TABLES AND NOTES - Figure 3.6

UNSEALED ROADS
WITH GIVE WAY SIGN (SHORT TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ = AW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AW</td>
<td>300 +/- 50</td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td>D = 15</td>
<td></td>
</tr>
<tr>
<td>SB ***</td>
<td>20 - 30</td>
<td></td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
</tr>
<tr>
<td>ML Optional, 5</td>
<td>Optional, 15</td>
<td></td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 100 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>100</td>
<td>80</td>
</tr>
</tbody>
</table>

NOTES:
1. Undertake a risk assessment
2. For the conditions of use:
   • Traffic volume is <= 150 vpd
   • Traffic speed is <= 70 km/h
   • Length of Work Area is < 100 metres
   • The work area entrances are visible from one another
   • Sight distance to the opposing traffic is >= 200 metres past the furthest end of the work area (as seen from the give way assembly)
   • Install a No Overtaking or Passing sign at the start of the single lane for traffic in the opposite direction
   • Monitor Give Way setup for safe and effective operation and to ensure traffic delays are not excessive
   • Give way assembly and no overtaking or passing signs may both be placed at the opposite end of the work area as shown in the figure above
3. The end of a speed zone shall be marked with End Speed Limit (R4-12) displaying the speed set up in the speed zone
4. When workers or small items of plant are in use:
   • If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded.

5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

6. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-5) that are placed at twice the cone spacing, or T5-4 may be used provided when installed they appear as a continuous line to an approaching driver.

8. For additional information on night works, please refer to AS1742.3 section 2.3.6.

9. One or more of the following signs can be installed at various locations if the road surface has loose material that may be a hazard:
   - Slippery (symbolic) (T3-3)
   - Loose Stones (symbolic) (T3-9)
   - Loose Surface (T3-14)

   Locate signs that are >= 100 metres ahead of the hazard.
FIGURE 3.7
EXAMPLE: UNSEALED ROADS
WITH GIVEWAY SIGN (LONG TERM)

Containment fence or tape placed at the boundary of the work area
- see Note 4

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes < 1500 vpd, with no less than one lamp visible from any direction

Temporary Hazard Makers - See Note 7

REFERENCE: AS1742.3
4.5.3 (c), 4.2 & 3.5.3

LENGTH OF CLOSED LANE - See Note 2

PROHIBIT PARKING if required

IF CONES/BOULLARDS ARE NOT ADEQUATELY VISIBLE, INSTALL TEMPORARY HAZARD MARKERS

WHEN WORKERS ARE PRESENT, SET UP SIGNS AS SHOWN IN BOX

REFER TO TABLES AND NOTES - FIGURE 3.7

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

NOTE: Drawing is not to scale
TABLES AND NOTES - Figure 3.7

UNSEALED ROADS
WITH GIVE WAY SIGN (LONG TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 15</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>D**</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 100 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
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<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL LANE WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>100</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

NOTES:
1. Undertake a risk assessment
2. For the conditions of use –
   - Traffic volume is <= 150 vpd
   - Traffic speed is <= 70 km/h
   - Length of Work Area is < 100 metres
   - The work area entrances are visible from one another
   - Sight distance to the opposing traffic is >= 200 metres past the furthest end of the work area (as seen from the give way assembly)
   - Install a No Overtaking or Passing sign at the start of the single lane for traffic in the opposite direction
   - Monitor Give Way setup for safe and effective operation and to ensure traffic delays are not excessive
Give way assembly and no overtaking or passing signs may both be placed at the opposite end of the work area as shown in the figure above.

3. The end of a speed zone shall be marked with End Speed Limit (R4-12) displaying the speed set up in the speed zone.

4. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed.
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded.

5. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

6. Install appropriate signs:
   - Advance Warning -
     - T1-1A or T1-1B (preferred format), or T1-31A (when space is limited).
     - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h).
   - Termination - T2-16A or T2-17A.

7. Tapers for night works shall be formed using Temporary Hazard Markers (T5-5) that are placed at twice the cone spacing, or T5-4 may be used where space is limited.

8. For additional information on night works, please refer to AS1742.3 section 2.3.6.

9. One or more of the following signs can be installed at various locations if the road surface has loose material that may be a hazard:
   - Slippery (symbolic) (T3-3)
   - Loose Stones (symbolic) (T3-9)
   - Loose Surface (T3-14)

Locate signs that are >= 100 metres ahead of the hazard.
FIGURE 3.8
EXAMPLE: UNSEALED ROADS
WORK ON SIDE ROAD (SHORT TERM)

REFER TO TABLES AND
NOTES - FIGURE 3.8

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic
to cones/bollards (m)

Containment fence or
tape erected at limit of
work area - see Note 5

FLASHING ARROW BOARD - shall be
used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may
be used when traffic volumes <= 1500 vpd with
no less than one lamp visible from any direction

If cones/bollards are not
adequately visible, install
Temporary Hazard markers
Temporary Hazard
Markers - See Note 8

See Note 10

Note: Drawing is not to scale
### TABLES AND NOTES - Figure 3.8

**UNSEALED ROADS**  
**WORK ON SIDE ROAD (SHORT TERM)**

#### LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>= AW</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 15</td>
<td>2D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>D**</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table  
** For 100 km/h road speeds, “D” = speed of approaching traffic  
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>ML – if installed</td>
<td>4</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM RESIDUAL ROADWAY WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>6.0</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>40</td>
</tr>
</tbody>
</table>

| 100 | 80 | 80 | 60 |

#### NOTES:

1. Undertake a risk assessment  
2. Unsealed road – A road surfaces that is not sealed with i.e. asphalt, concrete etc  
3. Set up the appropriate speed zones:  
   - Maximum speed in work site shall be 80 km/h  
   - Where workers are present, or other conditions require a lower speed than 80 km/h, Install speed zone of 60 km/m or 40 km/h (to suit conditions), unless a hazardous work area  
     - Length of 80 km/h speed zone should be >= 500 metres  
     - Length of 60 km/h speed zone shall be >= 200 metres  
     - Length of 40 km/h speed zone shall be <= 500 metres  
     - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres  
   - The end of a speed zone shall be marked with End Speed Limit (R4-12) displaying the speed set up in the speed zone  
4. One or more of the following signs can be installed at various locations if the road surface has loose material that may be a hazard:  
   - Slippery (symbolic) (T3-3)  
   - Loose Stones (symbolic) (T3-9)  
   - Loose Surface (T3-14)
Locate signs that are >= 100 metres ahead of the hazard

5. When workers or small items of plant are in use:
   - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
   - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded

6. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines

7. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required

8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited

9. For additional information on night works, please refer to AS1742.3 section 2.3.6

10. Road Work on Side Road (T1-25) or Road Plant on Side Road (T1-27) shall be used in advance of an intersection to warn of activities on the side road where there is insufficient distance from the intersection to the start of the works for turning traffic to be given adequate warning. On the same basis, Worker (symbolic) (T1-5) may need to be installed. All warning and delineation of the works should be confined to the side road when the distance on the side road is > 5 seconds of travel time at the intersection turning speed.
FIGURE 3.9
EXAMPLE : UNSEALED ROADS
WORK ON SIDE ROAD (LONG TERM)

REFER TO TABLES AND
NOTES - FIGURE 3.9

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Containment fence or tape erected at limit of work area - see Note 5

FLASHING ARROW BOARD - shall be used when traffic volume > 5000 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes ≤ 1500 vpd with no less than one lamp visible from any direction

If cones/bollards are not adequately visible, install Temporary Hazard markers
Temporary Hazard Markers - See Note 8

When workers are present, set up signs as shown in box

See Note 10

Reference : AS1742.3
4.2

One or more of these signs can be used, see Note 4

Maximum length of Work Site - See Note 3

Note : Drawing is not to scale
UNSEALED ROADS
WORK ON SIDE ROAD (LONG TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>BZ = AW</th>
<th>AW D = 15</th>
<th>TA</th>
<th>SB</th>
<th>WA</th>
<th>ML</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>300 +/- 50</td>
<td>2D**</td>
<td>15</td>
<td>D**</td>
<td>See Note 3</td>
<td>Optional, 5</td>
</tr>
<tr>
<td>100</td>
<td>20 - 30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 100 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>TA</th>
<th>SB</th>
<th>WA</th>
<th>ML – if installed</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>100</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

MINIMUM RESIDUAL ROADWAY WIDTH (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>LW</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>6.0</td>
</tr>
<tr>
<td>100</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>CL</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>0.5</td>
</tr>
<tr>
<td>100</td>
<td>1.0</td>
</tr>
</tbody>
</table>

BUFFER SPEED (km/h)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: As shown on Figure, 80 km/h may represent the maximum allowable speed through a Work Site

This Figure illustrates a Long-term Work Site with a Work Area (with workers being present) commencing immediately within the Work Site. Where the need for a temporary speed zone (for whatever reason) occurs part way into a Work Site the zone should be situated at that point rather than at the beginning of the Long-term Work Site

NOTES:
1. Undertake a risk assessment
2. Unsealed road – A road surfaces that is not sealed with i.e. asphalt, concrete etc
3. Set up the appropriate speed zones:
   • Maximum speed in work site shall be 80 km/h
   • Where workers are present, or other conditions require a lower speed than 80 km/h, Install speed zone of 60 km/m or 40 km/h (to suit conditions), unless a hazardous work area
      o Length of 80 km/h speed zone should be >= 500 metres
      o Length of 60 km/h speed zone shall be >= 200 metres
      o Length of 40 km/h speed zone shall be <= 500 metres
      o Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
Continue for Figure 3.9

- The end of a speed zone shall be marked with End Speed Limit (R4-12) displaying the speed set up in the speed zone
4. One or more of the following signs can be installed at various locations if the road surface has loose material that may be a hazard:
  - Slippery (symbolic) (T3-3)
  - Loose Stones (symbolic) (T3-9)
  - Loose Surface (T3-14)
Locate signs that are >= 100 metres ahead of the hazard
5. When workers or small items of plant are in use:
  - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
  - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
6. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
7. Install appropriate signs:
  - Advance Warning -
    - T1-3-2B or T1-1A
    - Roadwork X km Ahead: T1-16A or T1-16B (on roads with speeds >= 90 km/h)
  - Termination - T2-16A or T2-17A
8. Tapers for night works shall be formed using Temporary Hazard Markers (T5-4) that is placed at twice the cone spacing, or T5-5 may be used where space is limited
9. For additional information on night works, please refer to AS1742.3 section 2.3.6
10. Road Work on Side Road (T1-25) or Road Plant on Side Road (T1-27) shall be used in advance of an intersection to warn of activities on the side road where there is insufficient distance from the intersection to the start of the works for turning traffic to be given adequate warning. On the same basis, Worker (symbolic) (T1-5) may need to be installed. All warning and delineation of the works should be confined to the side road when the distance on the side road is > 5 seconds of travel time at the intersection turning speed.
FIGURE 3.10
EXAMPLE: UNSEALED ROADS
MAINTENANCE GRADING AND RESHEETING ROAD

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with
no less than one lamp visible from any direction

If sight distance is <= 250, see Note 6

One or more of these signs can be used, see Note 7

See Note 5
ROADWORK NEXT 10km

Note: Drawing is not to scale
TABLES AND NOTES - Figure 3.10

UNSEALED ROADS
MAINTENANCE GRADING AND RESHEETING

NOTES:
1. Undertake a risk assessment
2. Unsealed road – A road surfaces that is not sealed with i.e. asphalt, concrete etc
3. If feasible, grading (i.e. road, shoulders etc) is to be avoided along the right side of the road from approaching traffic
4. Work may be carried out either with or without leaving a windrow
5. Work shall be undertaken:
   • In lengths of <= 10 km (km)
   • With the Roadwork Ahead Next 10 km (km) sign (T1-24) placed at the end of the section being worked on
6. If sight distance fall to < 250 metres from the grader’s vehicle mounted warning device then the following must be undertaken:
   • Grader Ahead (T1-4) or Road Plant Ahead (T1-3-1) sign combined with Next 2 km (T1-28) shall be installed at each end of each section with reduced sight distance
   • Signs shall be placed >= 100 metres in advance of the start any windrow
   • Length of each section shall be <= 2 km
   • Such a section shall be completed and any installed signs shall be removed or relocated before proceeding to the next section
   • If there is difficulty in turning a grader around at the end of a 2 km section, it may be extended to the next available turning point but not > 6 km in total length
   The signage in this point may be omitted provided that the specified sight distance of >= 250 metres is met
7. One or more of these signs (below) can be installed at various locations if the freshly graded surface has loose material that may be a hazard:
   • Slippery (symbolic) (T3-3)
   • Loose Stones (symbolic) (T3-9)
   • Loose Surface (T3-14)
   Locate signs that are >= 100 metres ahead of the hazard
8. The appropriate speed limits may be applied. Set up a speed zone of 60 km/h or 40 km/h (to suit conditions), unless hazardous work area
   • Length of 60 km/h speed zone shall be >= 200 metres
   • Length of 40 km/h speed zone shall be <= 500 metres
   • Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
   The end of a speed zone shall be marked with End Speed Limit (R4-12) displaying the speed set up in the speed zone
9. No advance working signs for either direction of travel are required when:
   • Grader is always to operate leaving room for opposing traffic to pass it without driving off the roadway
   • Sight distance to the grader’s vehicle mounted warning device is >= 250 m throughout the entire section of road being worked on
   Should the operating conditions in this note not be met, the work shall be carried out with advance warning signs as described above
FIGURE 4.1
EXAMPLE: PEDESTRIANS & CYCLISTS
DIRECTING PEDESTRIANS ON TO ROAD

Accessible ramp of 1 in 8 maximum gradient shall be provided

Containment fence, bollards or cones placed at the boundary of pedestrian path - see Note 4

REFER TO TABLES AND NOTES - FIGURE 4.1

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale

Reference: AS1742.3
4.2
### TABLES AND NOTES - Figure 4.1

**PEDESTRIANS**

**DIRECTING PEDESTRIANS ON TO ROAD**

**LENGTH OF ZONE (m)**

<table>
<thead>
<tr>
<th>Road Speed</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>D = 45</td>
<td>2D** = 140</td>
<td>D**</td>
</tr>
<tr>
<td>TA</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>D* = 70</td>
<td>D*</td>
</tr>
<tr>
<td>SB</td>
<td>***</td>
<td>***</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
</tr>
<tr>
<td>WA</td>
<td>See Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Optional, 5</td>
<td>Optional, 5</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
<td>Optional, 15</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

**MAXIMUM SPACING OF CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>SB</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

**MINIMUM RESIDUAL LANE WIDTH (m) – to allow 2-way traffic to continue**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 - 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Subject to Clause 4.13.3

**MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**BUFFER SPEED (km/h)**

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40</td>
</tr>
<tr>
<td>80 or 90</td>
<td>n/a</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80</td>
</tr>
</tbody>
</table>

**NOTES:**

1. Undertake a risk assessment
2. Set up a 40 km/h speed zone, unless a hazardous work area (consider deviation of pedestrians and cyclists on or near roadway)
   - Length of 40 km/h speed zone shall be <= 500 metres
   - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
3. Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines
4. Provision shall be made for pedestrians (including disabled persons) and cyclists including installing signs as illustrated. Define the path for pedestrians and cyclists to move onto roadway by installing a containment fence or tape. Appropriate surface conditions and ramps are to be provided, while maintaining existing widths
5. Install appropriate signs:
   - Advance Warning - T1-5A or T1-5B sign
   - Termination - none required
FIGURE 4.2
EXAMPLE: PEDESTRIANS
NOT DIRECTING PEDESTRIANS ON TO ROAD

Containment fence, bollards or cones placed at the boundary of pedestrian path - see Note 2

Containment fence placed at the boundary where the work area interacts with pedestrians and/or cyclists.

Refer to tables and notes - Figure 4.2

Distance legend:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale

Reference: AS1742.3
4.4.4 or 4.2
### TABLES AND NOTES - Figure 4.2

#### PEDESTRIANS

**NOT DIRECTING PEDESTRIANS ON TO ROAD**

<table>
<thead>
<tr>
<th>LENGTH OF ZONE (m)</th>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
<tr>
<td>AW</td>
<td>D = 5</td>
<td>D = 15</td>
<td>2D** = 140</td>
<td>2D**</td>
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<td></td>
</tr>
<tr>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
</tbody>
</table>

* Where applicable – see Buffer Speed table
** For 70 - 110 km/h road speeds, “D” = speed of approaching traffic
*** A Safety Buffer Zone is recommended

#### MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>MAXIMUM SPACING OF CONES OR BOLLARDS (m)</th>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
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<td>12</td>
<td>18</td>
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<td>12</td>
<td>12</td>
<td>18</td>
<td></td>
</tr>
<tr>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>300 +/- 50</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

#### MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>MINIMUM CLEARANCE FROM TRAFFIC TO CONES OR BOLLARDS (m)</th>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
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<td>0.5</td>
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<td>1.0</td>
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Subject to Clause 4.13.3

#### BUFFER SPEED (km/h)

<table>
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<th>BUFFER SPEED (km/h)</th>
<th>Work Area Speed Limit as set up</th>
</tr>
</thead>
<tbody>
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<td>Road Speed (km/h)</td>
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<td>n/a 60</td>
</tr>
<tr>
<td>100 or 110</td>
<td>80 60</td>
</tr>
</tbody>
</table>

#### NOTES:

1. Undertake a risk assessment – The result of this assessment will determine whether a Static work site can be established (AS1742.3 Clause 4.2 applies – See Note 2) or whether the site meets the requirements of Short Term Low Impact Works (Clause 4.4.4 – See Note 3)

2. The requirements for a Static work site are:
   - Set up a 40 km/h speed zone, unless a hazardous work area
     - Length of 40 km/h speed zone shall be <= 500 metres
     - Length of 25 km/h speed zone should be >= 100 metres and shall be <= 200 metres
   - Install a buffer zone speed limit, this is required, based on the table above
   - A vehicle mounted warning device is required
   - When workers or small items of plant are in use:
     - If the clearance is between 1.5 metres to less than 3 metres to traffic and there is a risk of the clearance area being infringed, a containment fence of tape must be installed
     - If the clearance is less than 1.5 metres to traffic and there is inadequate room to place the containment fence or tape, then these devices may be excluded
   - Install appropriate signs:
     - Advance Warning - T1-5A or T1-5B sign
     - Termination - none required

3. For the conditions of use to conform to the requirements of Short Term Low Impact Works (AS1742.3 Clause 4.4.4 which obviates the requirements for speed zones to be established):
   - Work shall be limited to a single shift
   - A vehicle mounted warning device may be displayed
A support vehicle is not required on the roadway.

When using large plant items only, and there are no workers on foot, clearance to edge of traffic lane shall be:
- > 1.5 metres for speed limits that are >= 90 km/h
- May be < 1.5 metres for speed limits that are <= 80 km/h; provided the plant items shall not encroach onto traffic lane.

When there are workers on foot or using small items of plant, or both, one of the following shall apply:
- The work area shall not encroach onto a moving traffic lane where speed limits are <= 60 km/h
- >= 1.5 metres clearance to edge of traffic lane
- The entire work area is >= 3 metres clear of a moving traffic lane.

Worker (symbolic) (T1-5) sign or Road Plant Ahead (T1-3) shall be displayed when either workers on foot or plant items alone (as appropriate) are working < 3 metres to a moving traffic lane.

Bollards or cones shall be placed along the kerb line or the edge of traffic lane (if there are no kerb) when either workers on foot or plant items alone (as appropriate) are working <= 3 metres to a moving traffic lane.

Distance of clearances are determined by measuring from the boundary of the work area to the edge of traffic as defined e.g. cones, bollards or edge lines.

Provision shall be made for pedestrians (including disabled persons) and bicycles including installing signs as illustrated.

For additional information on night works, please refer to AS1742.3 section 2.3.6.
FIGURE 5.1
EXAMPLE: MOBILE WORKS
PAVEMENT MARKER LAYING

Dividing line on
two-way road

Lane line on multi-lane road
or edge line on any road

See Note 4

See Note 3 (a)

See Note 5

See Note 4

See Note 3 (b)

See Note 3 (a)

See Note 3 (b)

See Note 5 (c)

TAIL VEHICLE

LEAD VEHICLE

WORK VEHICLE

SHADOW VEHICLE

Refer to Tables and Notes - Figure 5.1

Note: Drawing is not to scale

Reference: AS1742.3
4.6
TABLES AND NOTES - Figure 5.1

MOBILE WORKS
PAVEMENT MARKER LAYING

NOTES:
1. This figure is based on AS1742.3 Section 4.6 and, in particular, Figure 4.5 which provides “examples of mobile works protection”. Refer to Section 4.6 of AS1742.3 for more details for operating mobile works.
2. Undertake a risk assessment.
3. Operating notes:
   (a) Workers on foot or using pedestrian-type plant
   (b) When shadow vehicle and work vehicle working on edge line, both vehicles travel in left lane
   (c) Shadow vehicle shall include a crash attenuator
   (d) Rotating yellow flashing lights may be used on the vehicle mounted warning devices subject to requirements in AS1742.3 Clause 3.12.2
4. Vehicles providing advance warning shall travel at the following spacing:
   - In locations where sight distance is good
     - Lead vehicle in advance of work vehicle:
       - Open Road Areas – 200 to 400 metres
       - Built-up Areas – 30 to 100 metres
     - Tail vehicle behind work vehicle, or behind shadow vehicle if one is being used:
       - Open Road Areas – 300 to 500 metres
       - Built-up Areas – 200 to 300 metres
       - Tail vehicle may be dispensed with if the speed limit is <= 60 kph
   - In locations where sight distance is poor
     - Lead vehicle shall move as necessary beyond the distances given for good sight distance to a point where good sight distance is regained and remain there until the work vehicle catches up
     - Tail vehicle shall hold a position of good sight distance until work vehicle has progressed to a point where the tail vehicle can move through the section with restricted sight to a point where good sight distance is regained
5. Distance between shadow vehicle and work vehicle shall be 20 to 40 metres
6. A mobile temporary speed zone may be established subject to requirements in AS1742.3 Clause 4.6.5
FIGURE 5.2
EXAMPLE: MOBILE WORKS
RIDE-ON PLANT

See Note 3 (a)

See Note 4

See Note 3 (d)

See Note 3 (c)

See Note 3 (b)

See Note 3 (a)

REFER TO TABLES AND NOTES - FIGURE 5.2

Note: Drawing is not to scale
MOBILE WORKS
RIDE ON PLANT

NOTES:
1. This figure is based on AS1742.3 Section 4.6 and, in particular, Figure 4.4 which provides “examples of mobile works protection”. Section 4.6 provides detailed provisions for operating mobile works.
2. Undertake a risk assessment.
3. Operating notes:
   (a) Operator vehicle mounted warning device showing either flashing bar or four corner lights only.
   (b) Tail vehicle may straddle edge line if practicable.
   (c) Tail vehicle may straddle separation line if practicable; may be dispensed with if speed limit <= 60 kph.
   (d) Line marking machine straddles separation line (if it is the straddle type).
   (e) Rotating yellow flashing lights may be used on the vehicle mounted warning devices subject to requirements in AS1742.3 Clause 3.12.2.
4. Vehicles providing advance warning shall travel at the following spacing:
   • In locations where sight distance is good:
     o Lead vehicle in advance of work vehicle:
       ▪ Open Road Areas – 200 to 400 metres
       ▪ Built-up Areas – 30 to 100 metres
     o Tail vehicle behind work vehicle:
       ▪ Open Road Areas – 300 to 500 metres
       ▪ Built-up Areas – 200 to 300 metres
     Tail vehicle may be dispensed with if the speed limit is <= 60 kph.
   • In locations where sight distance is poor:
     o Lead vehicle shall move as necessary beyond the distances given for good sight distance to a point where good sight distance is regained and remain there until the work vehicle catches up.
     o Tail vehicle shall hold a position of good sight distance until work vehicle has progressed to a point where the tail vehicle can move through the section with restricted sight to a point where good sight distance is regained.
5. A mobile temporary speed zone may be established subject to requirements in AS1742.3 Clause 4.6.5.
FIGURE 5.3
EXAMPLE: MOBILE WORKS
MOBILE SPEED ZONES

Dividing line on two-way road
Lane line on multi-lane road
or edge line on any road

Refer to Tables and Notes - Figure 5.3

Note: Drawing is not to scale

Reference: AS1742.3
4.6
TABLES AND NOTES - Figure 5.3

MOBILE WORKS
MOBILE SPEED ZONES

NOTES:
1. This figure is based on AS1742.3 Section 4.6 and, in particular, Figure 4.6. Refer to Section 4.6 of AS1742.3 for more details for operating mobile works. This figure does not include other signs that may be required for a particular work activity; refer to an appropriate figure.
2. Undertake a risk assessment.
3. For the conditions of use: A mobile speed zone shall be used at a mobile work site if workers are using small items of plant on the roadway, shoulder or parking lane.
4. Install speed zone of 40 km/h.
5. Speed signs shall be displayed on a vehicle.
6. If workers are required to be on foot within the lead and trailing vehicles, then the speed limit shall be reduced to 25 Kph for that time period.
FIGURE 6.1
EXAMPLE: FREQUENTLY CHANGING WORK AREA
IN OPEN ROAD AREA

AND/OR
ROAD PLANT
AHEAD
NEXT
2km

See Note 2

Most roads consist of a painted centre-line

AND/OR
ROAD PLANT
AHEAD
NEXT
2km

See Note 2

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage) OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

See Note 2

Reference: AS1742.3
4.3.4

Refer to Tables and Notes - Figure 6.1

Distance Legend:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale
FREQUENTLY CHANGING WORK AREA
IN OPEN ROAD AREA

NOTES:
1: Undertake a risk assessment
2: For the conditions of use:

Method may be applied for activities at successive locations < 2 km apart. Method may be applied provided that:

- A vehicle mounted warning device is displayed on a work vehicle or item of plant and it is not obscured at any time
- Work vehicle positioning and length of occupation of any one site <= 20 minutes
- Sight distance to the vehicle mounted warning device for approaching driver are:
  - > 150 metres in speed zones that are <= 60 km/h, or
  - > 250 metres in speed zones that are > 60 km/h
- A lookout person is placed to advise workers that are on foot on the roadway of any approaching vehicle whose speed or size might constitute a safety threat. The lookout may be dispensed with if:
  - the works are > 1.5 metres clear of moving traffic, or
  - the work will take <= 10 seconds and the advancing traffic can be viewed from a distance away that is >= 20 seconds of travel time
- Advance signs up to 2 km in advance of each work position or item of moving plant are displayed. (The distance between advance signs for opposing directions to be <= 2 km at any time).
- Appropriate advance signs are installed at each location:
  - Worker (symbolic) (T1-5A or B) where workers are on foot
  - Road Plant Ahead (T1-3-1) where moving plant only are being used
  - Next 2 km (T1-28)
**FIGURE 6.2**
EXAMPLE: FREQUENTLY CHANGING WORK AREA IN BUILT-UP AREA WITHIN TRAFFIC LANE

- Most roads consist of a painted centre-line
- See Note 2
- FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage)
  OR
- TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction
- See Note 2
- Shadow vehicle - See Note 2

**REFER TO TABLES AND NOTES - FIGURE 6.2**

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

**Note:** Drawing is not to scale

Reference: AS1742.3
4.4.3
TABLES AND NOTES - Figure 6.2

FREQUENTLY CHANGING WORK AREA
IN BUILT-UP AREA WITHIN TRAFFIC LANE

NOTES:
1. Undertake a risk assessment
2. For the conditions of use:
   • Work shall be carried out by operating work vehicle or a large plant item, and a shadow vehicle; both equipped with a mounted warning device
   • Shadow vehicle shall:
     o If work is being carried out by a large item of plant and there are no workers on foot or small items of plant present, follow behind the plant item > 15 metres and < 30 metres, either in the lane or shoulder to the left of the work lane (if free), or otherwise, within the work lane
     o If work is being carried out by workers on foot or small plant items, even though large items of plant may also be present, travel in the same lane as the work area, > 20 metres and < 40 metres behind the work vehicle
   
   Shadow vehicle may be dispensed with if traffic volumes are < 60 vph, given that sight distance to oncoming traffic is >= 50 metres or 2D metres, whichever is the greater (where D = speed of approaching traffic)
   • Speed limit <= 60 km/h
   • Time limit to apply at any one location:
     <= 20 minutes apply at any traffic volume
FIGURE 6.3
EXAMPLE: FREQUENTLY CHANGING WORK AREA
IN BUILT-UP AREA NOT WITHIN TRAFFIC LANE

Most roads consist of a painted centre-line

See Note 2

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes ≤ 1500 vpd with no less than one lamp visible from any direction

Median or Verge
Median or Verge

REFER TO TABLES AND NOTES - FIGURE 6.3

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale

Reference: AS1742.3
4.4.2
TABLES AND NOTES - Figure 6.3

FREQUENTLY CHANGING WORK AREA
IN BUILT-UP AREA NOT WITHIN TRAFFIC LANE

NOTES:
1: Undertake a risk assessment
2: For the conditions of use:
   • A vehicle mounted warning device is displayed on a vehicle parked on a shoulder or a parking lane or elsewhere where parking is permitted adjacent to moving traffic
   • Vehicle shall shadow the work area at all times, either in front or behind it
   • Speed limit is $\leq 70\ km/h$
   • Sight distance to oncoming traffic is $\geq 50$ metres
   • Time limit applies at any one location:
     o For $\leq 20$ minutes at any traffic volume
**FIGURE 7.1**
EXAMPLE : LOW IMPACT
WORK BETWEEN GAPS IN TRAFFIC (SHORT TERM)

Most roads consist of a painted centre-line

See Note 2

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd (Refer to AS1742.3 for further details on usage)

OR

TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

See Note 2

See Note 2

Median or Verge

Median or Verge

REFER TO TABLES AND NOTES - FIGURE 7.1

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note : Drawing is not to scale

Reference : AS1742.3
4.3.2 & 4.4.6
LOW IMPACT WORK
WORK BETWEEN GAPS IN TRAFFIC (SHORT TERM)

NOTES:
1. Undertake a risk assessment
2. For the conditions of use:
   Work that is of such short duration that it can be carried out within gaps in traffic may be done without advance signs or delineation provided that:
   - A lookout person is placed so that can see approaching traffic in time to warn workers to vacate the roadway before it arrives
   - The roadway at any one work site is occupied <= 20 minutes
     The lookout person may be dispensed with if the work will not take longer that 10 seconds and approaching traffic can be see for a distance that is >= 20 seconds of travel time
     This method is not recommended in Built-up Areas where traffic volumes are > 100 vph unless a significant gap is created by existing traffic control such as traffic lights
   - Work vehicles and plant items are to be parked clear of travelling traffic lanes
   - Vehicle mounted warning device is to be displayed on the work vehicle
FIGURE 7.2
EXAMPLE: LOW IMPACT
IN OPEN ROAD AREA - WORK WITHIN TRAFFIC (SHORT TERM)

Most roads consist of a painted centre-line

See Note 2 for conditions

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

REFER TO TABLES AND NOTES - FIGURE 7.2

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale

Reference: AS1742.3
4.3.3
LOW IMPACT WORK
IN OPEN ROAD AREA – WORK WITHIN TRAFFIC (SHORT TERM)

NOTES:
1. Undertake a risk assessment
2. For the conditions of use:
   Workers may work on the roadway or < 1.5 metres of moving traffic without advance signs or delineation provided that:
   - A vehicle mounted warning device is displayed on a work vehicle or item of plant and it is not obscured at any time
   - The roadway at any one work site is occupied <= 20 minutes
   - Sight distance to the vehicle mounted warning device for approaching drivers is:
     - > 150 metres in speed zones that are <= 60 km/h, or
     - > 250 metres in speed zones that are > 60 km/h
   - A lookout person is placed to advise workers that are on foot on the roadway of any approaching vehicle whose speed or size might constitute a safety threat. The lookout may be dispensed with if:
     - the works are > 1.5 metres clear of moving traffic, or
     - the work will take <= 10 seconds and the advancing traffic can be viewed from a distance away that is >= 20 seconds of travel time
   - The work does not decrease:
     - the overall width to less than that required for safe passage for two-way traffic, or one-way traffic for traffic volumes < 50 vpd, or
     - the running lane width adjacent to a barrier line to less than that needed to allow vehicles to proceed without crossing the line

If there are two or more locations that are within a distance of <= 2 km, which requires to be worked on, this site shall be considered as a frequently changing work area
FIGURE 7.3
EXAMPLE: LOW IMPACT
IN OPEN ROAD AREA - SHOULDER GRADING AND MOWING (SHORT TERM)

REFER TO TABLES AND NOTES - FIGURE 7.3

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale

Reference: AS1742.3
4.3.5
TABLES AND NOTES - Figure 7.3
LOW IMPACT WORK
IN OPEN ROAD AREA – SHOULDER GRADING AND MOWING (SHORT TERM)

NOTES:
1. Undertake a risk assessment
2. For the conditions of use:
   - Traffic volumes are < 1,500 vpd
   - Length of any section of work is <= 10 km
   - If sight distance to the vehicle mounted warning equipment on the grader or mower is:
     - >= 250 meters throughout the section of road being worked on:
       - Road Work Next 10 km (T1-24) shall be placed at each end of a section. Loose Stones (T3-9) or similar may be required at the beginning and/or along the section
     - < 250 meters at any section:
       - Grader Ahead (T1-4) or Road Plant Ahead (T1-3-1) together with Next 2 km (T1-28) shall be installed on each approach to the section of diminished sight distance. If traffic speed >= 80 km/h, install 60 km/h speed limit
       - Such 2 km sections shall be completed and signs shall be removed or relocated before proceeding to the next section
       - Should there be insufficient room to turn grader at the end of a 2 km section it may be extended to the next available turning point provided total length <= 6 km
**FIGURE 7.4**
**EXAMPLE: LOW IMPACT WORK**
**IN OPEN ROAD AREA - MOBILE INSPECTIONS (SHORT TERM)**

**OR**

**See Note 2**

**FLAShING ARROW BOARD** - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)

**OR**

**TWO ROTATING FLAShING LAMPS** - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

**Refer to Tables and Notes - Figure 7.4**

**Distance Legend:**
- BZ = Buffer Zone (m)
- AW = Advance Warning Area (m)
- TA = Taper Area (m)
- SB = Safety Buffer (m)
- WA = Work Area (m)
- ML = Termination Area (m)
- LW = Minimum Residual lane width (m)
- CL = Minimum clearance from traffic to cones/bollards (m)

**Note:** Drawing is not to scale

**Reference:** AS1742.3

4.3.6
LOW IMPACT WORK
IN OPEN ROAD AREA - MOBILE INSPECTIONS (SHORT TERM)

NOTES:
1. Undertake a risk assessment
2. For the conditions of use:
   (a) Inspection vehicle may travel in the traffic stream provided that it maintains speed that is:
       ▪  < 20 km/h below the speed limit, or
       ▪  >= 25 km/h on a road with < 200 vpd given that it shall display at least one flashing yellow light
   (b) An inspection vehicle can operate by travelling along a shoulder or verge clear of moving traffic, using
gaps in traffic to pass any obstructions in the shoulder or verge given that it shall display at least one
flashing yellow light
   (c) If the inspection vehicle is required to block or partially block a traffic lane continuously at speeds lower
than item 2(a) above, it shall operate within a mobile works convoy
FIGURE 7.5
EXAMPLE: LOW IMPACT WORK
IN BUILT-UP AREA - WORK ON MEDIANS, VERGES AND FOOTPATHS (SHORT TERM)

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with
no less than one lamp visible from any direction

Most roads consist of a painted centre-line

See Note 2

REFER TO TABLES AND NOTES - FIGURE 7.5

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale

Reference: AS1742.3
4.4.4
LOW IMPACT WORK
IN BUILT-UP AREA - WORK ON MEDIANS, VERGES AND FOOTPATHS (SHORT TERM)

LENGTH OF ZONE (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
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<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110</th>
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<td>D = 15</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>WA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* For 70 - 110 km/h road speeds, “D” = speed of approaching traffic

MAXIMUM SPACING OF CONES OR BOLLARDS (m)

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80 – 110*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>SB</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>WA</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>ML</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Cone height >= 700 mm

NOTES:
1. Undertake a risk assessment
2. For the conditions of use:
   - A support vehicle is not required on the roadway
   - A vehicle mounted warning device may be displayed
   - Work shall be limited to a single shift
   - When using large plant items only, and there are no workers on foot, clearance to edge of traffic lane shall be:
     - > 1.5 metres for speed limits that are >= 90 km/h
     - May be < 1.5 metres for speed limits that are <= 80 km/h; provided the plant items shall not encroach onto traffic lane
   - When there are workers on foot or using small items of plant, or both, one of the following shall apply:
     - The work area shall not encroach onto a moving traffic lane where speed limits are <= 60 km/h
     - >= 1.5 metres clearance to edge of traffic lane
   - The entire work area is >= 3 metres clear of a moving traffic lane
   - Worker (symbolic) (T1-5) sign or Road Plant Ahead (T1-3) shall be displayed when either workers on foot or plant items alone (as appropriate) are working < 3 metres to a moving traffic lane
   - Bollards or cones shall be placed along the kerb line or the edge of traffic lane (if there are no kerb) when either workers on foot or plant items alone (as appropriate) are working <= 3 metres to a moving traffic lane
FIGURE 7.6
EXAMPLE: LOW IMPACT WORK
IN BUILT-UP AREA - STREET SWEEPING AND GARBAGE COLLECTION (SHORT TERM)

Most roads consist of a painted centre-line

See Note 2 regarding workers on foot

See Note 2

FLASHING ARROW BOARD - shall be used when traffic volume > 1500 vpd
(Refer to AS1742.3 for further details on usage)
OR
TWO ROTATING FLASHING LAMPS - may be used when traffic volumes <= 1500 vpd with no less than one lamp visible from any direction

REFER TO TABLES AND NOTES - FIGURE 7.6

DISTANCE LEGEND:
BZ = Buffer Zone (m)
AW = Advance Warning Area (m)
TA = Taper Area (m)
SB = Safety Buffer (m)
WA = Work Area (m)
ML = Termination Area (m)
LW = Minimum Residual lane width (m)
CL = Minimum clearance from traffic to cones/bollards (m)

Note: Drawing is not to scale

Reference: AS1742.3 4.4.5
LOW IMPACT WORK
IN BUILT-UP AREA - STREET SWEEPING AND GARBAGE COLLECTION (SHORT TERM)

NOTES:
1. Undertake a risk assessment
2. For the conditions of use:
   - Figure applies for operations which do not involve workers on foot working < 1.5 metres towards the edge of a travelling traffic lane
   - Vehicle equipped with a vehicle mounted warning device
   - Speed limit <= 70 km/h, or <= 80 km/h if work vehicle can operate > 1.5 metres from the edge of the nearest running lane
   - Sight distance for the following traffic is shown in the table below

<table>
<thead>
<tr>
<th>Road Speed (km/h)</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sight distance (m)</td>
<td>7.5</td>
<td>22.5</td>
<td>67.5</td>
<td>105</td>
<td>120</td>
</tr>
</tbody>
</table>