

## Roadside Worksite Safety & Traffic Management

### PLANNING

For both a short or long term site, note the following:

- Posted speed limit, and
- Look on Melways to see what colour the road is, and
- Determine the clearance between traffic and workers.

Then use this information to determine the appropriate risk rating and traffic speeds, or traffic treatment.

In all planning tables below, the Code of Practice uses these road types:

| Melways colour | Road sign prefix                       | Road type   |
|----------------|--|---|
| BROWN          | * thin black line in country directory | Local Traffic Road                                |
| ORANGE         | 'C' prefix                             | Collector Road or Rural Arterial 'C' Road         |
| RED            | 'A' or 'B' prefix                      | Secondary Road or Rural Arterial 'A' and 'B' Road |
| BLACK          | 'M' prefix                             | Arterial Road (urban area) and Rural 'M' Road     |
| GREEN or BLUE  |  | Freeway (Urban)                                   |

### PLANNING – LONG TERM SITE

Greater than one shift, or where signs may need to be left out overnight.

#### Determine risk rating:

| Clearance to Traffic                              |                                       |               |               |         |
|---|---------------------------------------|---------------|---------------|---------|
|   | Clearance Between Traffic and Workers |               |               |         |
|   | < 1.2 m                               | 1.2 m – 3.0 m | 3.0 m – 9.0 m | > 9.0 m |
| <b>40 km/h</b>                                    |                                       |               |               |         |
| Local Traffic Road                                | L                                     | L             | L             | L       |
| Collector Road or Rural Arterial 'C' Road         | M                                     | L             | L             | L       |
| Secondary Road or Rural Arterial 'A' and 'B' Road | M                                     | L             | L             | L       |
| Arterial Road (urban area) and Rural 'M' Road     | M                                     | M             | L             | L       |
| Freeway (Urban)                                   | H                                     | M             | L             | L       |
| <b>50 km/h</b>                                    |                                       |               |               |         |
| Local Traffic Road                                | L                                     | L             | L             | L       |
| Collector Road or Rural Arterial 'C' Road         | M                                     | L             | L             | L       |
| Secondary Road or Rural Arterial 'A' and 'B' Road | M                                     | L             | L             | L       |
| Arterial Road (urban area) and Rural 'M' Road     | H                                     | M             | M             | L       |
| Freeway (Urban)                                   | H                                     | M             | M             | L       |
| <b>60 km/h or 70 km/h</b>                         |                                       |               |               |         |
| Local Traffic Road                                | L                                     | L             | L             | L       |
| Collector Road or Rural Arterial 'C' Road         | M                                     | L             | L             | L       |
| Secondary Road or Rural Arterial 'A' and 'B' Road | H                                     | M             | L             | L       |
| Arterial Road (urban area) and Rural 'M' Road     | H                                     | M             | M             | L       |
| Freeway (Urban)                                   | V                                     | H             | M             | L       |
| <b>80 km/h or 90 km/h</b>                         |                                       |               |               |         |
| Local Traffic Road                                | M                                     | L             | L             | L       |
| Collector Road or Rural Arterial 'C' Road         | H                                     | M             | L             | L       |
| Secondary Road or Rural Arterial 'A' and 'B' Road | V                                     | H             | M             | L       |
| Arterial Road (urban area) and Rural 'M' Road     | V                                     | H             | M             | M       |
| Freeway (Urban)                                   | V                                     | V             | H             | M       |
| <b>100 km/h or 110 km/h</b>                       |                                       |               |               |         |
| Local Traffic Road                                | H                                     | M             | M             | L       |
| Collector Road or Rural Arterial 'C' Road         | V                                     | H             | H             | M       |
| Secondary Road or Rural Arterial 'A' and 'B' Road | V                                     | H             | H             | M       |
| Arterial Road (urban area) and Rural 'M' Road     | V                                     | V             | H             | M       |
| Freeway (Urban)                                   | V                                     | V             | V             | M       |

(Extract from Code of Practice December 2004, table 5)

#### How detailed should the traffic management plan be?:

|                    |   |
|--------------------|---|
| Low or Medium risk | Plan must be prepared under supervision of person suitably competent and experienced in traffic management. |
|--------------------|---|

|                        |  |
|------------------------|--|
|                        | May use standard diagram, safe operating procedure or site specific plan.  |
| High or Very High risk | Plan must be site specific, prepared by a competent and experienced person, discussed with workers on the site, and reviewed by a competent and experienced person once controls are in place. |

(Extract from Code of Practice December 2004, cl 49)

#### Determine appropriate traffic speed past worksite:

Where the worksite speed limit determined below is higher than the posted speed limit on the road, then the posted speed limit should remain.

| Clearance to Traffic (metres) | Road Type   | Safety Barrier in place | Worksite Speed Limit (km/h) |
|-------------------------------|---|-------------------------|-----------------------------|
| Within 1.2 m                  | All   | No                      | 40                          |
| 1.2 m to 3.0 m                | Local traffic road                                | No                      | 60                          |
|                               | Collector Road or Rural Arterial 'C' Road         | No                      | 60                          |
|                               |   | Yes                     | Speed limit                 |
|                               | Secondary Road or Rural Arterial 'A' and 'B' Road | No                      | 40                          |
|                               |   | Yes                     | 80                          |
|                               | Arterial Road (urban area) or Rural 'M' Road      | No                      | 40                          |
|                               |   | Yes                     | 80                          |
| 3.0 m to 9.0 m                | Freeway (urban)                                   | No                      | 40                          |
|                               |   | Yes                     | 80                          |
|                               |   | No                      | 80                          |
|                               | Collector Road or Rural Arterial 'C' Road         | No                      | 80                          |
|                               |   | Yes                     | Speed limit                 |
|                               | Secondary Road or Rural Arterial 'A' and 'B' Road | No                      | 80                          |
|                               |   | Yes                     | Speed limit                 |
| > 9.0 m                       | Arterial Road (urban area) or Rural 'M' Road      | No                      | 60                          |
|                               |   | Yes                     | 80                          |
|                               | Freeway (urban)                                   | No                      | 60                          |
|                               |   | Yes                     | 80                          |
|                               |   | No                      | 100 or 110                  |
|                               |   | Yes                     | 100 or 110                  |

(Extract from Code of Practice December 2004, table 6)

### PLANNING – SHORT TERM SITE

One shift or less.

#### Determine traffic management treatment:

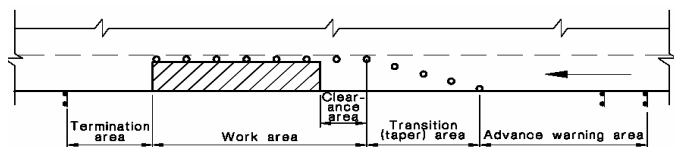
| Clearance between traffic and Workers             |        |             |         |     |
|---|--------|-------------|---------|-----|
|   | < 1.2m | 1.2m – 3.0m | 3m – 9m | >9m |
| <b>40 km/h</b>                                    |        |             |         |     |
| Local Traffic Road                                |        |             |         |     |
| Collector Road or Rural Arterial 'C' Road         |        |             |         |     |
| Secondary Road or Rural Arterial 'A' and 'B' Rd   |        |             |         |     |
| Arterial Road (urban area) and Rural 'M' Road     |        |             |         |     |
| <b>50 km/h</b>                                    |        |             |         |     |
| Local Traffic Road                                |        |             |         |     |
| Collector Road or Rural Arterial 'C' Road         |        |             |         |     |
| Secondary Road or Rural Arterial 'A' and 'B' Rd   |        |             |         |     |
| Arterial Road (urban area) and Rural 'M' Road     |        |             |         |     |
| <b>60 km/h or 70 km/h</b>                         |        |             |         |     |
| Local Traffic Road                                |        |             |         |     |
| Collector Road or Rural Arterial 'C' Road         |        |             |         |     |
| Secondary Road or Rural Arterial 'A' and 'B' Rd   |        |             |         |     |
| Arterial Road (urban area) and Rural 'M' Road     |        |             |         |     |
| Freeway (Urban)                                   |        |             |         |     |
| <b>80 km/h or 90 km/h or 100 km/h or 110 km/h</b> |        |             |         |     |
| Local Traffic Road                                |        |             |         |     |
| Collector Road or Rural Arterial 'C' Road         |        |             |         |     |
| Secondary Road or Rural Arterial 'A' and 'B' Rd   |        |             |         |     |
| Arterial Road (urban area) and Rural 'M' Road     |        |             |         |     |
| Freeway (Urban)                                   |        |             |         |     |

#### Use:

|  |   |
|--|---|
|  | Posted speed limit and vehicle mounted warning devices                            |
|  | Posted speed limit, vehicle mounted warning devices and advance warning signs     |
|  | Speed limit of 60 km/h, vehicle mounted warning devices and advance warning signs |
|  | Speed limit of 40 km/h, vehicle mounted warning devices and advance warning signs |

(Extract from Code of Practice December 2004, table 4)

## ADVANCE WARNING / SIGNAGE



### CALCULATING 'D'

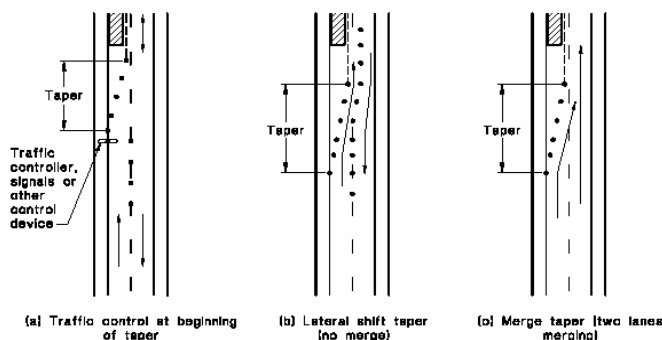
The approach speed is the speed immediately prior to the roadside worksite speed. For example:

- 100 km/h to 80 to 60 through worksite, so D=80.
- 100 km/h to 80 to 60 to 40 through worksite, so D=60.

### ADVANCE WARNING

As a general rule, the advance warning distance for motorists should be at least 2D.

### TAPER DISTANCE



(Extract from AS1742.3-2002, figure 4.6)

Required taper length:

|           |                             |                             |
|-----------|-----------------------------|-----------------------------|
| 30 metres | Greater than or equal to 1D | Greater than or equal to 2D |
|-----------|-----------------------------|-----------------------------|

### CLEARANCE AREA

- Recommended clearance area length 20 to 30 metres.
- A 'clear' area – not a parking area.
- AS 1742.3 – "shall be provided where approach speeds are 60 km/h or more".

### RECOMMENDED SIGN PLACEMENT

- Lateral spacing 1 metre from traffic paths.
- Clearance of lowest edge of sign above ground:

|                                   |  |
|-----------------------------------|--|
| Short term:<br>200mm above ground | Long term:<br>Rural – 1.5 metres<br>Urban – 2.2 metres |
|-----------------------------------|--|

(Part extract from AS1742.3 – Manual of uniform traffic control devices)

## CONTROLS

### HIERARCHY OF CONTROL EXAMPLES

|                                       |   |
|---------------------------------------|---|
| Hazard elimination / substitution     | Divert traffic; close road; install a side track.   |
| Engineering controls / isolation      | Close lanes; install barriers; shadow/pilot vehicles.   |
| Administrative / behavioural controls | Speed restrictions; night works; traffic controllers; variable message signs (VMS); portable traffic signals. |

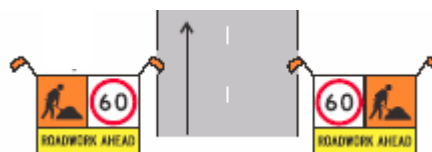
(Part extract from Code of Practice December 2004, table 2)

### MULTI-MESSAGE SIGN CHECKLIST

- Not to be used on urban freeways (eg Monash Fwy), unless the speed has been reduced to 60 km/h or less.
- Flags should be displayed on the first MMS, and each displaying a speed reduction sign.
- All frame sections should be filled (with a blank sign if no message).
- At least one section of the sign should be a symbol.
- Ideally the two square signs should be on top of the rectangular sign, and the speed limit plates should be closest to traffic (see drawing below).
- Signs should preferably be displayed on both sides of the road on high volume roads with speeds > 60 km/h.

(Part extract from Code of Practice, December 2004, appendix D)

Figures D1 to D4 (in appendix D) of the Code of Practice show example multi-message sign layouts.



### VERY SHORT TERM WORKS

For works carried out between gaps in traffic or which take < 5 minutes, advance warning signs are not required, but the following are:

- Look out person / motorists need very good sight distance (eg. up to 250 metres for traffic speed above 60 km/h, at least 150 metres for traffic speed below 60 km/h).
- Vehicle mounted warning device in use.
- Work vehicle must not encroach on to roadway.
- Must be safe for traffic to pass.

(Part extract from Code of Practice, December 2004, cl 33 - 35)

### FREQUENTLY CHANGING WORK AREA

Frequently changing worksites (eg grass mowing, shoulder grading) should display start and end signage as per figure 3 in the Code of Practice.

### SAFETY BARRIER "NO GO ZONES"

The following were calculated using theoretical analysis only. If the manufacturers instructions are available, they take precedence over the information below.

| Safety barrier type   | Maximum Speed Limit (km/h) | Recommended Clearance or No-Go Zone (metres) |
|---|----------------------------|--|
| Precast Concrete Barrier (6 metre Units) – with Units not connected.                                      | 30                         | Not recommended for use                      |
| Precast Concrete Barrier – with Units connected by steel pin or equivalent and a 30 metre minimum length. | 100<br>80<br>60            | 1.6<br>1.0<br>0.6                            |
| Plastic Water Filled Barrier – with TL3 compliance.   | 100<br>80<br>60            | 6.0<br>4.0<br>2.5                            |

(Part extract from Code of Practice, December 2004, table 7)

### HANDY MEASURING HINT

|                                       |                               |
|---------------------------------------|-------------------------------|
| Distance between cats eyes: 24 metres |                               |
| Length of white line: 3 metres        |                               |
| Gap between lines: 9 metres           | (On standard VicRoads roads.) |

**Reference note:** "Code of Practice" is the Road Management Act 2004 Worksite Safety – Traffic Management Code of Practice.

Available at <http://www.gazette.vic.gov.au/GazArchFrame.htm>