

KEY INFORMATION

Working in Proximity to Traffic Awareness

Part 2





Working in Proximity to Traffic – Awareness Part 2 Works Protection Methods, qualifies you to select and apply appropriate work protection methods in accordance with the MUTCD Part 3 for short term low impact work.

Work permits, your organisations procedures and WHS requirements must also be followed.

REFERENCING THE MUTCD

As a Working in Proximity to Traffic Awareness (WPTA) Part 2 qualified person you may be the responsible person on site. You **MUST** be able to refer to and decide on the correct works protection method to be used to maintain you, your fellow workers, pedestrians and motorist's safety.

The most frequently referred to sections of the *Manual of Uniform Traffic Control Devices* and the Australian Standard AS1742 (MUTCD) you are likely to use are:

- Short-Term Low Impacts works – Open Road areas
- Short-Term Low Impacts works – Built-up areas

Key terms you need to know

Before you decide on the correct protection methods you need to classify the type of work being undertaken. To do this, there are a few terms you need to understand.

Knowing these terms will help you reference the MUTCD, classify the work and identify the Works Protection Methods that need to be implemented on the work site.




Short term work (MUTCD extract)	The description which applies when a traffic guidance scheme is required only while work personnel are in attendance and is generally limited to the duration of a single work shift or lesser period where road conditions are returned to normal when the shift or lesser period ends. Short term work = Single shift or less. Personnel MUST be in attendance and road conditions restored at completion of the work.
Low impact work	No impact on traffic flow. For example, an off-road activity. No adverse effects on road condition that would affect traffic flow/passage. For example, minor pothole repairs, marking the roadway for future works.
Long term work	Where a traffic guidance scheme is required to operate both day and night, may be left unattended.
Open Road Area	Roadside development less frequent than that specified for a built-up area. Property accesses average spacing greater than 100m over a minimum of 500m.
Multilane	Two or more traffic lanes in one direction.
High Speed Road	Speed Limit of 80 km/h and above.
Low Speed Road	Speed Limit of less than 80 km/h.
Built-up Area	Roadside development comprising property accesses at spacings averaging less than 100m over distances of at least 500m.

WORKING IN PROXIMITY TO TRAFFIC AWARENESS PART 2



CAN AND CAN'T DO'S

What you can and can't do in "Working in Proximity to Traffic – Awareness Part 2 Works Protection Methods"

CAN DO		
✓	Set up basic warning signage, so road users are aware of your presence and that work is occurring. (MUTCD requirements MUST be met.)	T2-Q06 
✓	Install or remove signs and other devices included on a TGS under direct supervision and instruction by a TMI Competent Person. The supervising TMI MUST be present (in close proximity) and able to intervene if required.	T1-3-1 
✓	Identify the scope of work and the process that must be applied under MUTCD part 3.	T1-5 
✓	<p>Prepare or participate in the preparation of a SWMS (Safe Work Method Statement) or JSEA (Job Safety Environment Analysis) and carry out an on-site risk assessment.</p> <ul style="list-style-type: none"> This MUST be carried out before any work starts, or workers move to a position that may be hazardous. You must be confident and appropriately trained to carry out risk assessments. If you are not, speak with your Supervisor or Manager. 	
✓	<p>Identify when higher protection measures beyond your training and experience are required and flag this with your supervisor or manager.</p> <p>Refuse to carry out work that you are not appropriately qualified and/or trained for. You must inform your supervisor and remain on site in a safe position.</p>	
CAN'T DO		
✗	Act as a Traffic Controller.	
✗	Design or develop a traffic management plan or traffic guidance scheme.	
✗	<p>Implement a traffic management plan or traffic guidance scheme.</p> <p><i>Unless under the direct supervision and instruction by a TMI (Traffic Management Implementation) Competent Person.</i></p>	
✗	Audit or inspect traffic management systems.	
✗	Stop and control traffic.	
✗	Put out more signs than specified under the MUTCD.	
✗	Any of these activities would be a breach of legislation and safety.	



KEY RULES

Risk Assessment and Management

To manage and reduce the risks that you and others will face when working in proximity to traffic a thorough risk assessment and management process must be carried out by a suitably trained and qualified person in conjunction with the work team.

As part of the planning process and in accordance with established procedures:

- hazards should be identified
- WHS and environmental risks assessed
- control measures:
 - prioritised
 - implemented
 - monitored
 - according to established procedures.

A Risk Assessment **MUST** be carried out on site to confirm the works protection method or methods are suitable for the work, site, terrain and environment, reducing the risk to an acceptable level.

It is vital that a risk assessment be made of the proposed adoption of these treatments in particular environments taking particular account of factors such as traffic volume and speed, road geometry and width, and the general behaviour of road users.

If in doubt talk it out and get the right information.

Contact your supervisor or manager and speak with them if you are unsure about anything.

A Risk Assessment **MUST be carried out.**

MUTCD **MUST be referred to identify suitable works protection methods.**

Work in Proximity to Traffic – Application of Works Protection Methods

Process steps checklist

Step 1	
<input type="checkbox"/> <i>Tick when complete</i>	Identify the type of work to be undertaken and the conditions this work will be carried out in, including: <ul style="list-style-type: none"> location of the worksite clearance between the traffic stream and the work site speed limit traffic volume and composition geometry of the road approaching and past the work site (for example sight distance etc.).
	Notes/comments
Step 2	
<input type="checkbox"/> <i>Tick when complete</i>	Identify the conditions the work will occur under and the required controls for this type of work in the MUTCD Part 3 and its supplement.
	Notes/comments
Step 3	
<input type="checkbox"/> <i>Tick when complete</i>	Identify other safe work procedures and instructions that MUST be adhered to. This could include: <ul style="list-style-type: none"> traffic management plans/TGS Safe Work Method Statement (SWMS) permits any other relevant safe working documentation.
	Notes/comments
Step 4	
<input type="checkbox"/> <i>Tick when complete</i>	Carry out a Risk Assessment—this should occur on site so all environmental and other conditions present on the day that work is to occur are captured.
	Notes/comments
Step 5	
<input type="checkbox"/> <i>Tick when complete</i>	Implement all MUTCD requirements and safe work procedures and instructions.
	Implement all other hazard and risk management strategies, identified in SWMS and/or onsite risk assessments.
	Notes/comments
Step 6	
<input type="checkbox"/> <i>Tick when complete</i>	Monitor conditions and all hazard/risk mitigation methods implemented to ensure they are working and in place.
	Notes/comments
Step 7	
<input type="checkbox"/> <i>Tick when complete</i>	Maintain personal and continual vigilance during work. <ul style="list-style-type: none"> Where possible and safe to do so, try to look at oncoming traffic as often as practical.
	Notes/comments
Step 8	
<input type="checkbox"/> <i>Tick when complete</i>	Ensure the work site is cleared, made safe and signage is removed or covered in a secure and appropriate manner at the end of work activities.
	Ensure all permits and other required documentation is completed and closed out where required.
	Notes/comments



SIGN PLACEMENT AND DIMENSION D

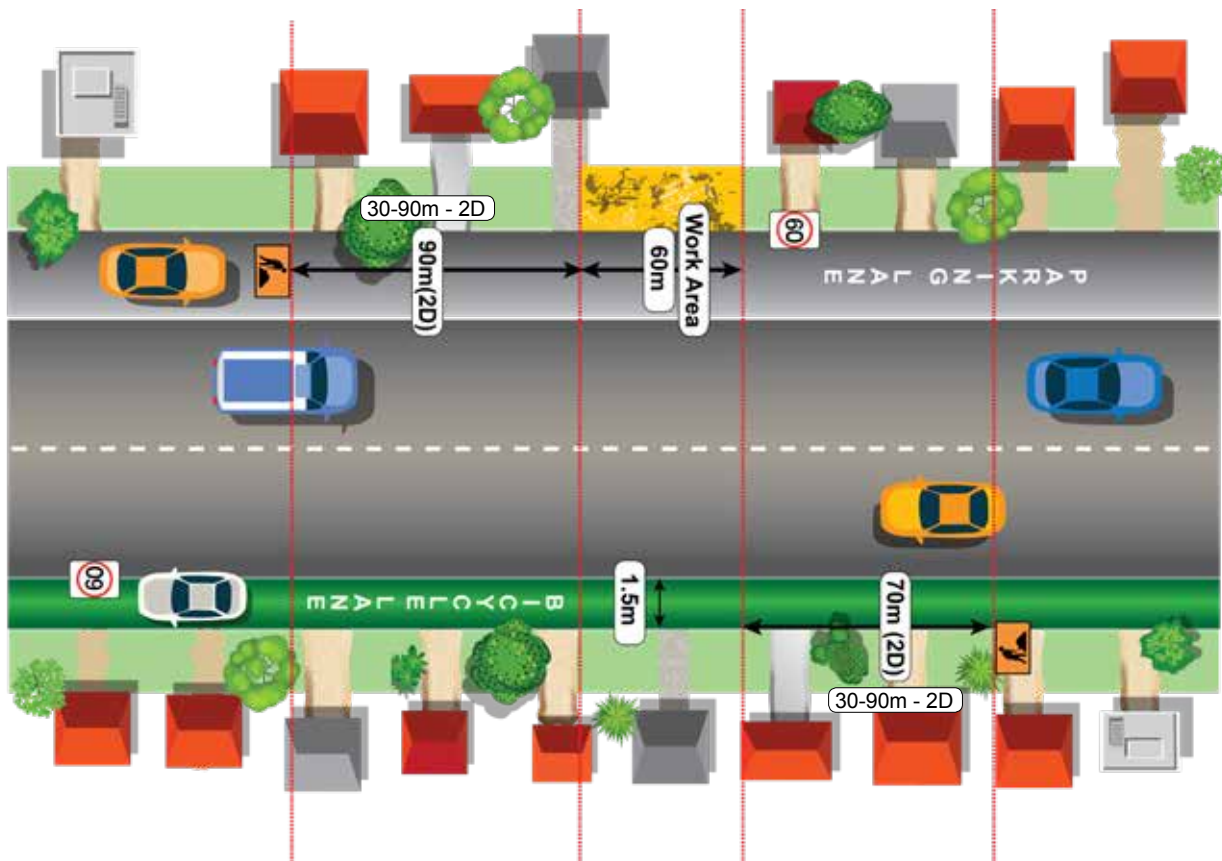
- Sign placement will be at either D or 2 D dependent on posted road speed.
- Advance warning distances, signs MUST be placed at 2D metres when the posted approach speed limit is 60 km/h or more.

TABLE 4.2 - Value of Dimension D

Posted speed limit (prior to roadworks) (km/h)	Dimension D (m)	TC to PTS Sign (m) minimum
40 or less	5 to 10	10 to 20
50	10 to 15	20 to 30
60	15 to 45	30 to 90
70, 80	60 to 80	120 to 160
90, 100	80 to 100	160 to 200
110	100 to 120	200 to 240

NOTE: The Traffic Controller/PREPARE TO STOP sign (T1-Q05) shall be placed at least 2D (where value of D is the greater value of the range of dimensions shown in the Table) in advance of the traffic controller.

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Example diagram of potential works protection setup for Short term Low Impact work on low speed road in a built up area.

WORKING IN PROXIMITY TO TRAFFIC AWARENESS PART 2



T2-Q06



T1-3

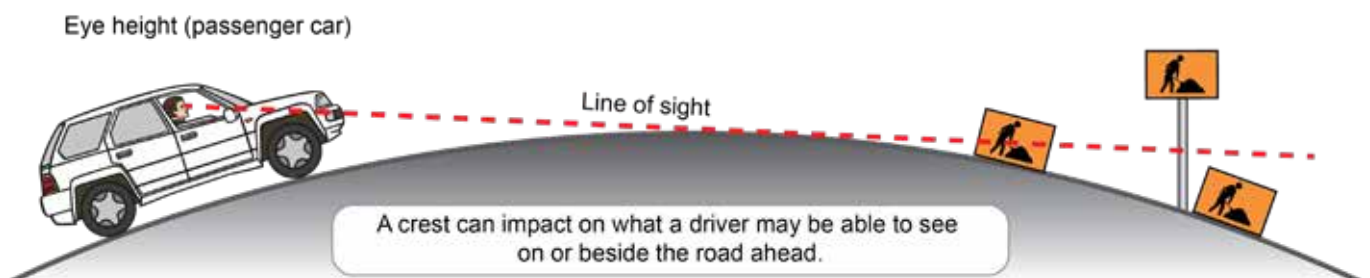
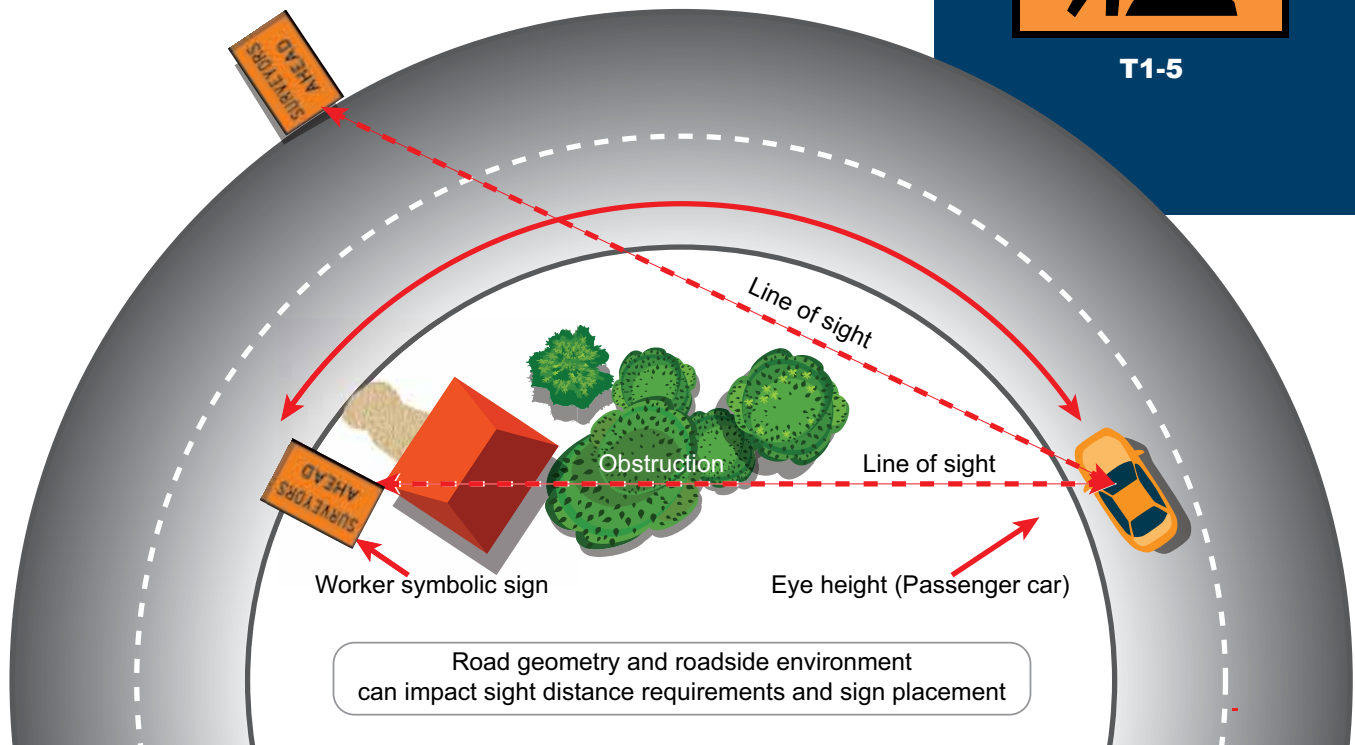


T1-5

ALL warning signs MUST be placed in Advance of the worksite and be prominently and clearly displayed to traffic.

Four (4) things that may impact on sign placement and whether drivers can see warning devices and signage:

- 1 safety barriers and fences
- 2 crests of hills
- 3 overgrown or overhanging trees and bushes
- 4 bicycle lanes. Avoid placing signs in bike lanes as they are hazardous to riders
- 5 parked vehicles.



VEHICLE MOUNTED WARNING DEVICES

Sight distance to vehicle mounted warning device:

- greater than 150 m in a 60 km/h or lower speed zone
- greater than 250 m elsewhere.

Vehicle mounted warning devices may include:

- a single yellow beacon lamp for use on a vehicle not normally used for any works on roads
- a pair of yellow beacon lamps for use on vehicles (for example patrol trucks) used on all roads for any work being carried out without the protection of a static work site
- an illuminated flashing arrow sign as specified in the MUTCD and Austroads standards. *(Have the same sight line issues as signs; crests and curves etc. must be considered when placing.)*



ACTIVITY

1. Download a copy of the MUTCD and identify the sub-clause that the Dimension D table is located in.
2. Identify 4 of the activities that are classed as Work off the travelled path in the MUTCD and the sub-clause that identifies this.
3. Identify which section of the MUTCD has information on vehicle mounted warning devices and the sub-clause you would refer to.



LOOKOUT PROTECTION METHOD

Lookouts are used as a means of protection for workers carrying out limited works on the roadway.

Lookouts **MUST** keep a continuous watch for approaching road traffic for personnel carrying out work tasks. The lookout warns workers to vacate the roadway before road traffic arrives.

On sighting approaching road traffic, the lookout must be able to warn the workers in time to allow them to react to the warning and move themselves and their tools/materials to a safe position before the road traffic arrives.

As lookout protection relies solely on the lookout keeping watch for road traffic hazards, work on the roadway (high risk zone) must only be done where sight distances can be met, and visibility allows. Daylight hours are recommended. Where lookouts are required to be used at night the risk **MUST** be assessed and precautions taken to ensure the lookout can identify the approach of vehicles accurately and clear workers from the road in a safe and timely manner.

Under lookout protection:

- The roadway will not be made unsafe for road traffic movement or obstructed by plant or equipment.
- Only tools and equipment that can be cleared quickly can be used by the worker under lookout protection. For example, survey rods, cameras, small hand tools.
- A position of safety off the roadway must be available and accessible for workers and lookouts (no barriers or other obstacles that may impede access).
- Minimum sight distance must be maintainable at all times by the lookout and the distance confirmed through physical measurement for example, laser measure, car odometer, measuring wheel.
- The time taken to clear the high-risk zone (roadway) **MUST** be tested before work starts at the site. This should be tested off the roadway with any equipment/materials the worker will be using or carrying.
- Extra precautions must be taken when using Lookouts at night.
- Lookouts cannot do any other work while performing lookout duties.
- Lookouts must remain in close enough proximity to workers who require lookout protection to ensure warnings can be given effectively.
- Lookouts must warn workers immediately of the approach of road traffic in ample time to make sure workers and/or equipment are moved to a position of safety.
- Lookouts **MUST** use an appropriate warning method for the type of work being undertaken and the environment, for example, a verbal warning would not be suitable if the lookout is on the verge - a siren would be more appropriate.
- Workers **MUST** remain in a position of safety until the lookout gives the all clear and the road traffic has moved past the work area.

Lookouts are used as a means of protection for workers carrying out limited work on the roadway.

Lookouts must give clear timely warning to road workers of oncoming traffic.

Workers must have time to react to the warning and move themselves, their tools and materials to a safe position before the road traffic arrives.

A clear line of sight **MUST** be maintained by the lookout at all times.



Using lookouts at night

It is important to remember that:

- Distances cannot be judged accurately in low light conditions.
- Peripheral vision is severely compromised in low light.
- Vehicles become difficult to see as contrast is low.
- It is hard to identify a motorbike from a car, if only 1 headlight is working.
- It is harder to judge the speed of approaching vehicles in low light conditions

If Lookouts are to be used at night a risk assessment and other controls should be put in place to ensure the use of lookouts is appropriate for the site conditions, activities involved and safety of workers.

Considerations should include the following:

- traffic volume – low volume recommended
- traffic speed
- traffic noise (ability to hear approaching traffic)
- ability to see vehicle lights approaching on side roads
- how will the lookout identify when vehicles have entered the danger zone for workers.

Minimum warning time

Example - Minimum warning time		
	7 seconds	Time required for workers and equipment to move to position of safety. (This time will vary depending on width of roadway, work being carried out and equipment used – time must be tested)
+	3 seconds	Reaction time (includes lookout and worker)
+	5 seconds	Position of safety before road traffic arrives
=	15 seconds	Total time required (minimum)

Fifteen (15) seconds is the minimum time that can be used for determining the required sight distance.

The required sight distance will vary depending on the time required to clear the roadway to a position of safety and location speed limit.

The time required for workers and equipment to move to a position of safety **MUST** be tested and confirmed prior to workers entering the roadway.

It is important that the responsible person on site identifies the correct minimum warning time for workers to clear the roadway in conjunction with the lookout and tests this timeframe before lookout protection is endorsed for use and before workers move onto the roadway.

WORKING IN PROXIMITY TO TRAFFIC AWARENESS PART 2

Minimum sight distance

This indicates the sighting distance required to react appropriately to the approach of road traffic and must be the required sight distance as identified through the Minimum Sight Distance Chart (see below).

- Weather conditions or visual obstructions may affect the ability to maintain sight distance.
- A clear line of sight **MUST BE ABLE TO BE MAINTAINED AT ALL TIMES**.
- A physical marker **MUST** be used to identify the sight distance.
- At night it is suggested a physical marker with working lights be used so lookouts can clearly see when a vehicle is within the required distance for the road to be cleared of workers.

Speed limit km/hr	Minimum Warning Time			
	15 seconds	20 seconds	25 seconds	30 seconds
40	185 metres	245 metres	310 metres	370 metres
50	230 metres	310 metres	385 metres	460 metres
60	275 metres	370 metres	460 metres	550 metres
70	325 metres	430 metres	535 metres	645 metres
80	370 metres	490 metres	615 metres	735 metres
90	415 metres	550 metres	690 metres	825 metres
100	460 metres	615 metres	765 metres	920 metres
110	505 metres	675 metres	840 metres	1010 metres

Lookout responsibilities

Lookouts must:

- keep watch for road traffic approaching the worksite from any direction – maintaining continual vigilance by looking each way
- warn workers immediately if road traffic approaches the worksite
- give the all clear signal for workers to move back onto the roadway - all road traffic must be safely past the worksite before this occurs.

Responsible person on site:

The responsible person on site, is accountable for:

- risk assessing the use of lookouts
- deciding how many lookouts are needed to protect the work
- assigning lookouts to the work site and advising workers of the lookouts who have been assigned
- telling workers about the location/s of position/s of safety
- telling workers who the lookout/s are
- ensuring the time to clear the roadway is tested prior to implementation
- deciding how lookouts will warn workers by use of one or more of the following: whistles, sirens, other suitable means.

WORKING IN PROXIMITY TO TRAFFIC AWARENESS PART 2



Safety barriers or guardrails may block escape paths.

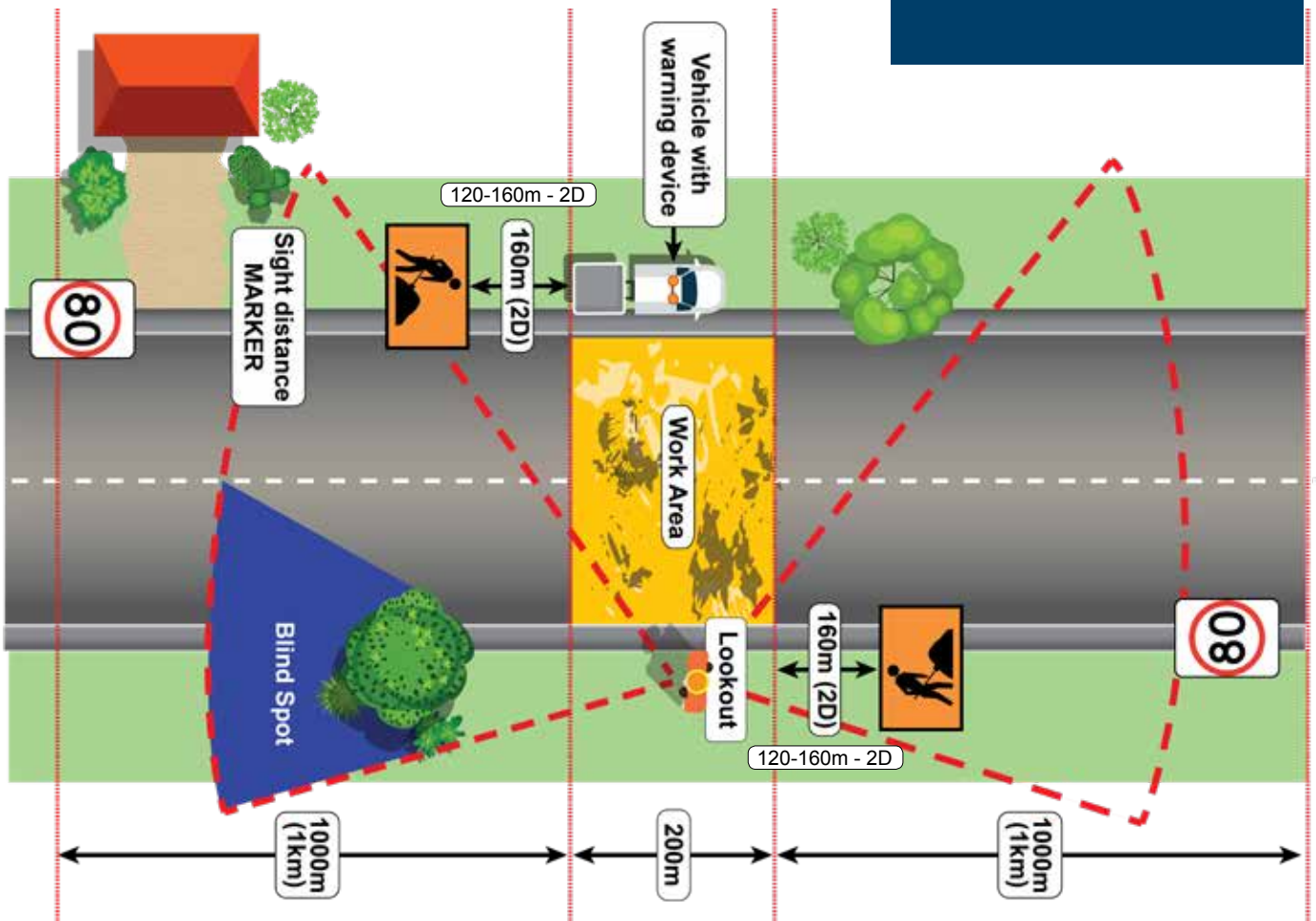
A position of safety off the roadway must be available.

If in doubt talk it out and get the right information.

ACTIVITY

- It will take workers 10 seconds to clear the roadway.
What is the minimum warning time required for workers to get to a position of safety?
- The speed of the roadway is 70km/h and it will take workers 12 seconds to clear the roadway.
What is the minimum warning time and sighting distance?

Example of a potential work area using lookout protection:





HELPFUL LINKS

Traffic volume data

<https://data.qld.gov.au/dataset/traffic-census-for-the-queensland-state-declared-road-network/resource/4e2aabf5-0432-4624-8598-bb4fe76c9fc0>

JSEA/SWMS

<https://www.worksafe.qld.gov.au/construction/health-and-wellbeing-at-work/safe-work-methodstatements>

MUTCD

<http://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Manual-of-uniformtraffic-control-devices.aspx>

Work Health and Safety

<http://www.safeworkaustralia.gov.au/sites/swa/whs-information/pages/whs-information>

<https://www.worksafe.qld.gov.au/>

**Contact your supervisor
or manager and
speak with them if you are
unsure about anything.**

ACTIVITY ANSWERS

1. Download a copy of the MUTCD and identify the sub-clause the Dimension D table is located in.
Sub-clause 4.1.5 Dimension D
2. Identify 4 of the activities that are classed as Work off the travelled Path in the MUTCD and the sub-clause that identifies these.
4.3.7 Work off the travelled path
(i) mowing and litter activities (ii) graffiti removal (iii) minor tree clearing (iv) minor cleaning of culverts, pipes and pits (v) herbicide spraying (vi) road edge guide post repairs
3. Identify which section of the MUTCD has information on vehicle mounted warning devices and the sub-clause you would refer to.
SECTION 3. DESCRIPTION AND USE OF SIGNS AND DEVICES
3.12 VEHICLE-MOUNTED SIGNS AND DEVICES
4. It will take workers 10 seconds to clear the roadway what is the minimum warning time required for workers to get to a position of safety?
18 seconds
5. If the speed of the roadway is 70km/h and it will take workers 12 seconds to clear the roadway, what is the minimum warning time and sighting distance?
20 seconds warning time – Sighting distance 490m

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<http://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Manual-of-uniform-traffic-control-devices.aspx>.

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