

# TRAFFIC MANAGEMENT LEARNER GUIDE



Training support material for:

RIIWHS302E –  
Implement traffic  
management plan

Produced by:



# CONTENTS

About this guide.....	5
Language – Literacy – Numeracy (LLN).....	6
LLN core skills – customising training.....	7
Acknowledgements.....	8
<b>Introduction</b>	<b>9</b>
<b>Prepare to implement traffic management plan</b>	<b>13</b>
<b>Set out the traffic guidance scheme (TGS)</b>	<b>52</b>
<b>Monitor the traffic guidance scheme (TGS)</b>	<b>85</b>
<b>Close down the traffic guidance scheme (TGS)</b>	<b>93</b>
<b>Glossary</b>	<b>103</b>



PICTURE BASED. PLAIN ENGLISH. LEARNING MADE EASY.



## Acknowledgements

Easy Guides would like to thank the following people for kindly volunteering their time and expertise in assisting with this set of training materials.

### **Lionel Skinner**

MultiSkills Training  
Phone: 1300 217 249  
Mobile: 0418 522 257

### **Randall Trayler**

SME - Traffic (RST Group)  
Mobile: 0400 561 361  
Email: randytrayler@gmail.com

### **Jim Gascoigne**

Construction Training Group  
Mobile: 03-9763 5449  
Email: [www.constructiontraininggroup.com.au](http://www.constructiontraininggroup.com.au)

### **Danko Piskulic**

MC Traffic  
0417 391 117  
[www.mclabour.com.au](http://www.mclabour.com.au)

### **Diogo Oliveira**

Star Training and Assessing  
0424 839 928  
[www.startraining.com.au](http://www.startraining.com.au)

# INTRODUCTION



## Implement traffic management plan

The unit of competency RIWHS302E Implement traffic management plan develops a person's skills and knowledge in order to implement a traffic management plan in Civil construction. A person implementing a traffic management plan must be able to understand documents associated with the plan. These could include an environmental management plan, a safe work method statement (SWMS) and the traffic guidance scheme.

### What is a traffic management plan?

Anyone conducting works on or near a road must have a traffic management plan. The plan must be prepared by a qualified person. For example, someone who has done the unit of competency RIICC503A Prepare Work Zone Traffic Management Plans.

The plan will provide a means to move likely road users through, past or around a road works site. The plan is designed to make sure the roads are not unduly affected during the road works. The plan must keep all users of the road safe. This includes people such as pedestrians, school children, people with disabilities, cyclists and emergency vehicles.

The road management plan manages the risks associated with work activities undertaken in a traffic environment. A safe work method statement (SWMS) is one tool used to control the risks.

Traffic management plans must be prepared and approved by the local state or territory road traffic authority before the road works can begin. The traffic management plan includes a traffic guidance scheme (TGS) which gives the specific layout of signs and devices.



## What is a traffic guidance scheme (TGS) ?

The traffic management plan includes the traffic guidance scheme (TGS). The TGS is the arrangement of temporary signs and devices to warn traffic and guide it through, past or around a work area or temporary hazard. It is a visual representation of the traffic control devices to be implemented to change existing road/footpath conditions so that an area can be isolated for contractors to carry out their works/event.

A person who has successfully completed the unit of competency RIIWHS302D Implement traffic management plan should be able to correctly set out the TGS. This would include signs and devices such as cones, bollards, signs and variable message sign (VMS) etc.



# PREPARE TO IMPLEMENT TRAFFIC MANAGEMENT PLAN



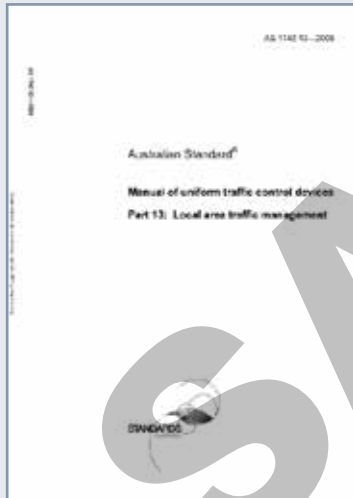


Compliance (continued)

## Australian standards

- Australian Standard AS1742: Manual of Uniform Traffic Control Devices
- Australian Standard AS4602: High visibility safety garments
- Australian Standard AS1906: Retroreflective materials and devices for road traffic control purposes.

**These documents can be found at [www.saiglobal.com](http://www.saiglobal.com)**



## Worksite rules and procedures

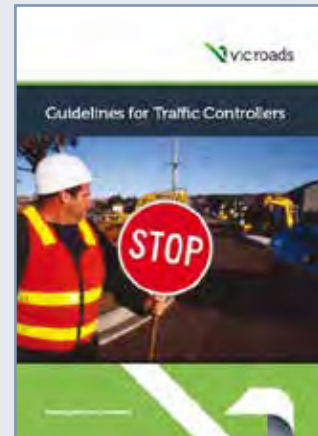
The rules, procedures and policies of the company you are working for or the site you are working at should be made available during site induction or from your supervisor.



## Guidance notes

- Guidelines for traffic controllers
- Traffic controller handbook

(Check what's available from your state or territory roads regulator).



Australian Standards (continued)

## Australian Standard 1742.3 Manual of uniform traffic control devices. Part 3: Traffic control for works on roads.

This Standard is the main document that applies to traffic control and management.

*"The objective of this Standard is to provide organizations carrying out works on roads with a set of uniform practices for the signing and delineation of construction and maintenance works which will promote the safety of both workers and road users at the work site."*

The Standard explains the devices and control measures to warn and guide road users in safely passing around or through a worksite on a road. It includes footpaths, shared paths and bicycle paths adjacent to the roadway.

The Standard is used when works obstructs the normal use of a road by a road user.

The Standard also gives guidance for traffic guidance schemes (TGS) which are used to guide traffic and keep workers safe.



## Traffic flow requirements

In making your traffic management plan you must know the approximate traffic flow of the affected road area. Your traffic flow data should include movement of light vehicles, heavy vehicles, pedestrians etc. Your plan and TGS should keep traffic flowing as smoothly as possible. Ideally, traffic delays should be a maximum of 15 minutes. Longer delays may require the use of a detour or other modifications to your traffic management plan.

Your traffic flow assessment should include forecasted traffic flow data for roads and intersections of adjoining roads. If a detour is necessary, include streets where traffic is proposed to be detoured.

Your TMP must make sure that queues of waiting vehicles will not block intersections, railway crossings, schools, or entry and exit to nearby shopping centres.

If traffic volumes are high causing long queues it may be necessary to have a second traffic controller to slow or stop the traffic before the queue. If sprayed bitumen works are taking place the location of the traffic controller may need to be varied in keeping with traffic flows.



*Traffic flow requirements (continued)*

Traffic flow data helps you to know the traffic flow of the affected road area. This data is usually collected by the relevant road traffic authority in each state or territory. Mainroads Western Australia for example, undertakes traffic counting throughout Western Australia. Data is collected for both state road networks and local government roads.

The data is collected by installing counting equipment on the roads. The equipment is usually installed at night when traffic volumes are lower. Pneumatic road tubes are generally used for temporary studies to study a sample of traffic.

Traffic counters can also be used to count and classify vehicles. This will help in making the traffic control plan.

For example:

- What traffic density is expected.
- How long can delays in traffic be expected.
- What percentage of the traffic is made up of heavy vehicles.
- Will the traffic flow be one-way or two-way.
- What speeds will the traffic need to move at.
- Will any detours be needed.
- What traffic warning signs and devices will be needed.
- Will traffic controllers be needed and if so, how many.
- Will a media communication plan be needed to let residents know what is happening.
- A traffic impact engineering report may be needed.



## The traffic guidance scheme (TGS)

The TGS is the arrangement of temporary signs and devices to warn traffic and guide it through, past or around a work area or temporary hazard.

Any traffic guidance systems which need to be set up will be detailed in the TMP.


A TGS shows on a sketch or diagram the arrangement of signage and devices such as:

- temporary warning signs
- traffic cones
- vehicle mounted signs and flashing lights
- speed limit signs
- guide signs
- warning signs
- warning lights
- barriers
- hazard markers
- portable traffic signals
- bollards
- arrow boards
- detours
- traffic controllers.



# Sample information on a traffic guidance scheme (TGS)

You would expect to find some of the following information on a TGS:



Plan number	CLIENT: LOCATION: MUNICIPALITY: WORKS:
EG-1300-733-220	
Metways Ref	

POSITION OF SIGNAGE MAY BE ALTERED TO GIVE CLEAR VISIBILITY TO THE PUBLIC. FLAGS ARE REQUIRED ON ALL MULTI MESSAGE FRAMES.

THIS PLAN IS PREPARED UNDER AS 1742.3 2009 AND IS A GUIDE AND NOT MADE TO SCALE. NO RESPONSIBILITY WILL BE TAKEN FOR COMPLIANCE OF TMPs WHEN IMPLEMENTED BY OTHERS.

**Legend**

- Boided
- Work Area
- Traffic Controller
- Existing Speed Limit 50 km/h

Speed limit	Distance (B) in metres
50	50
60	60
70	70
80	80
90	90
100	100

End Road Work speed limit must match sites existing speed limit. If within other road works or work sites then end road work to match that speed

**1. SCOPE OF WORKS:**

**2. TRAFFIC MANAGEMENT LOGISTICS:**  
Works require a closed pedestrian and also road traffic.

**3. PEDESTRIANS:**  
A traffic controller will be on hand to safely direct pedestrians around the worksite.

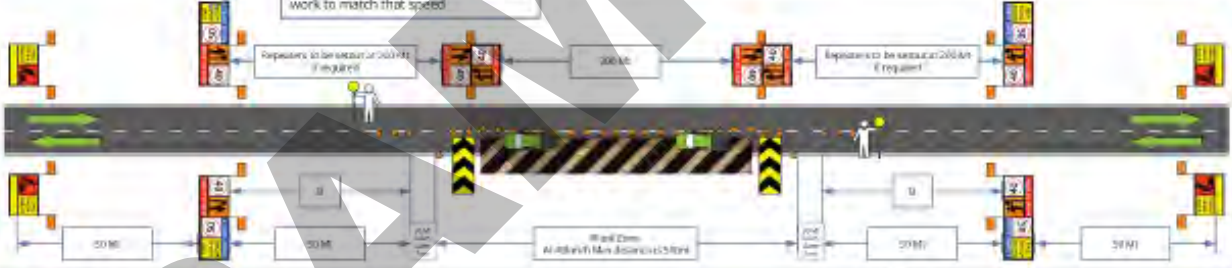
**4. SPEED LIMIT:**  
Local Roads 50km/h

**5. SCHEDULE OF WORKS:** TBA

**6. FLAGS ARE REQUIRED ON ALL MULTI MESSAGE FRAMES:**

**7. COMPLIANCE:**  
When installed as per the Plan, Signage will be in accordance with Australian Standard AS 1742.3 2009 & the Road

Manage it per AS 2004 Worksite Safety - Traffic Management  
**8. CONE / BOLLARD SPACING:**  
 1) 50km/h or less: 4 metres  
 2) 60km/h: Taper 6-8metres - Straight 9-12metres  
 3. LATERAL SHEET WARNERS: placed every 24metres  
 10. Position of Signage may be altered to give clear visibility  
 11. Duplicate signage where possible, otherwise use repeaters  
[www.walton.com](http://www.walton.com)



**Traffic Controller Notes:**

1. Traffic Controllers to be equipped with a UHF two way at all times
2. Queue lengths must be maintained. If queue lengths exceed approach sign distance then repeaters will have to be setup on the approach to the worksite
3. All existing speed signs are to be covered within the work site and on the approach to the site
4. Access to local properties is to be maintained as best as possible at all times
5. Traffic Controllers should remain courteous and patient with motorists and pedestrians at all times
6. Traffic furniture may require adjustment due to many situations including queue length, space, availability, access roads and driveways etc

**Plan Notes:**

1. If the workers are more than 1.2 Mt away from the bollards then the speed does not need to be reduced to 40km/h

If this is the case then the 40km/h core blue can be replaced with a "Road Work Ahead"

## Memorandum of authorisation (MOA)

Once you have collected all the information needed, you can go ahead and get a properly trained and authorised person to prepare your traffic management plan. *RIICC503A Prepare work zone traffic management plans* is one example of a unit of competency that would qualify a person to create traffic management plans and traffic guidance systems.

Once you have your plan you will need to submit it to your road traffic authority and/or local council for approval. You will then be issued with a MOA which authorises the erection, removal or alteration of traffic control devices such as roadwork signs, temporary speed limits and traffic cones.

You may be exempt from an MOA if you are a works manager for a utility company or a public transport operator. You may be allowed to put up works advisory devices, hand-held stop signs, work zone signs and temporary works speed limit signs (with a minimum speed of 40 km/h). You would not be exempt if you needed to use temporary traffic signals, temporary works speed limit signs 'Less than 40 kph' and regulatory signs other than speed limit signs such as 'No right turn', 'No entry' etc.

The image shows a sample Memorandum of Authorisation (MOA) form. The form is titled "MEMORANDUM OF AUTHORISATION TO ERECT, DISPLAY, REMOVE OR ALTER TRAFFIC CONTROL DEVICES". It is divided into several sections:

- APPLICANT DETAILS:** Includes fields for Name, Address, Telephone, and Email.
- WORK DETAILS:** Includes fields for Work Description, Location, and Duration.
- LOCATION DETAILS:** Includes fields for Road Name, Direction of Traffic, and Road Width.
- EXPECTED DISPLAY DATES:** Includes a table for Start Date, End Date, and Time.
- APPROVAL:** Includes a section for the Road Traffic Authority (RTA) and a section for the Applicant's Signature.

A large "SAMPLE" watermark is overlaid on the form.

*Personal protective equipment (continued)*

When working at **night time** (in poor light or under artificial lighting) or when working **day/night** in combination, fluorescent clothing meeting or exceeding AS/NZS4602 for night use **class "N"** or day/night use **class "D/N"** must be worn.

The clothing must:

- Be either red-orange or yellow in color (Made from Class "R" retroreflective material)
- Comply with AS/NZS4602 (Class "N" night or "D/N" day/ night use)
- Contain retroreflective material, preferably hoops on the body arms and legs
- Display the company name
- Be clean and in good condition
- Be correctly worn and done up at all times.

Wet weather clothing (e.g rain jackets, pants) should be made from waterproof material which is as close to the required colors and retroreflectivity (refer to standards) as possible. Retroreflective material should be capable of reflecting in wet or dry conditions.

**Retroreflective = Reflects light**



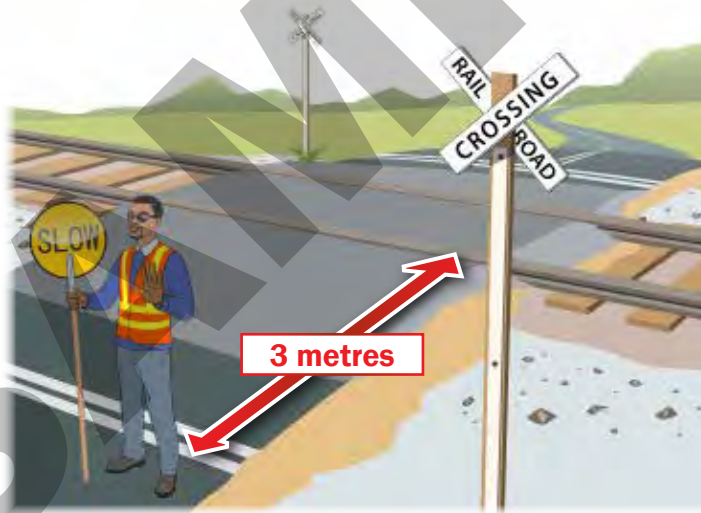


*Personal protective equipment (continued)*

If traffic control is needed near a train track, rail reserve, level crossing or boom gate there may be special rules that need to be followed. Check with the local state/territory rail authority and the traffic management authority for any special rules.

For example in Victoria:

- Traffic controllers must wear hi-visibility clothing that meets AS/NZS 1906.4 and AS/NZS 4602
- Hi-visibility clothing must be of the color “special purpose orange”
- Clothing, hats (including safety hats) or carried objects that are red or green in color are not allowed as these colors have special meanings in railway system operations, signalling and safe work procedures and may cause confusion.
- Work is not allowed within 3 metres of the nearest train track without the necessary safe working qualifications
- Safety footwear and if necessary eye protection must be worn when working in the danger zone.



*Personal protective equipment (continued)*

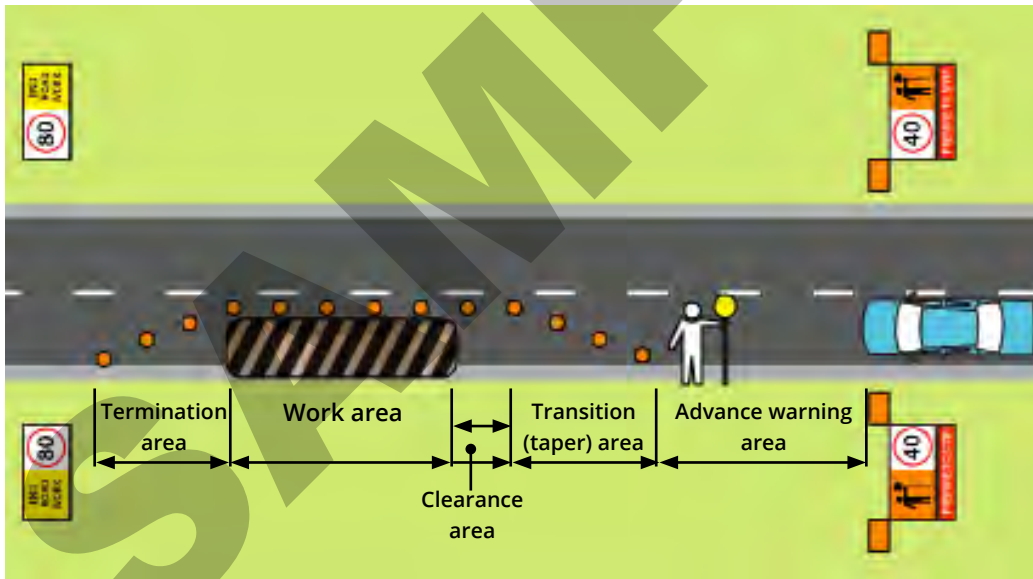
As a minimum traffic controllers must also wear safety footwear which meets Australian Standards. The work site rules will also tell you any other personal protective equipment which must be worn.

This may include:



**Note:** Traffic controllers should also consider wearing wide brimmed hats, sunglasses, long sleeved tops and pants when working in the sun. Detachable brims with neck flaps can be used if a hard hat must be worn.

# SET OUT TRAFFIC GUIDANCE SCHEME



## Traffic guidance scheme (TGS)

A Traffic guidance scheme is a visual representation of the traffic control devices that will be used to change existing road/footpath conditions so that an area can be isolated for work to be carried out. The TGS must suit the site conditions, traffic volumes and the work that will be done.

Traffic guidance schemes will normally take place at one of three levels:

1. Short-term and mobile works not involving full or part road closure.

The scheme will include all the signs and devices needed to cover the routine tasks the workers will do. Safe work method statements (SWMS) will be used as well as TMPs showing the order and separation distances of items in a mobile works gang.

Short term works generally cover work from moving vehicles or works that are in place for one work shift or less.



2. Works involving relatively simple part-roadway closures.

The scheme will have a sketch showing the devices needed and their distances apart.



### Regulatory signs

Regulatory signs tell you what you can and can't do. It is illegal to disobey these signs.  
For example:



### Warning signs

Warning signs tell you there could be danger ahead. They are not giving you instructions you have to follow but are warning you to slow down or stop in case there is danger ahead.



### Guide signs

Guide signs give you information. For example, the distance to the next town, road names or directions. These signs are there for information only, they do not have to be followed.

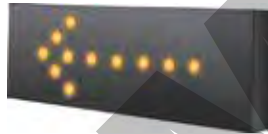


Signs and devices (continued)

## Flashing lights and signs

Flashing yellow lights may be used at work sites to highlight signs which warn of roadwork ahead. For example they may be used with a "roadwork ahead" or a "bridgework ahead" sign in an area where there is no road lighting or lighting is poor.

A flashing arrow sign or a variable message sign (VMS) can be used to give advance warning of a temporary detour. These may be mounted to a trailer or a vehicle.



## Vehicles

Vehicles such as patrol trucks should be fitted with a pair of rotating flashing yellow lights for use on vehicles when working on sites with traffic volumes up to 1500 vehicles per day (VPD). The lights must be positioned on the vehicle so that at least one light is visible from any direction.






Vehicles which are not usually used for roadwork's or those operating in an emergency situation should have a single rotating flashing light.

Inspection vehicles and plant operating in a static work area should also have a single rotating flashing light.



## Position temporary traffic signs and barriers

Worksite signing and barriers must be placed in accordance with the traffic management plan (TMP). The TMP should be developed so it is compliant with the appropriate legislation for the state or territory where the work is being done.

Prepare to stop	Symbolic traffic controller	Combined prepare to stop and symbolic traffic controller
		
<p>These signs are used to give advance warning that traffic may need to stop at the direction of a traffic controller. They must be used together with the symbolic traffic controller sign where traffic may be required to stop. It is the responsibility of the traffic controller to ensure the signs are in place while controlling traffic and are removed immediately after traffic control has finished.</p>		

## Signs and devices

Signs and traffic control devices are put in place to:

- Warn, guide and instruct road users
- Bring attention to the work area, personnel and equipment
- Control the speed or direction of traffic within and next to the work area
- To indicate the direction and width of the available travel path
- To stop access to the whole or part of the work area
- To provide physical protection for the work area and the people working in it.

### Temporary warning signs and hazard markers

Most temporary warning signs are used when works on roads and footpaths are being done. They are used to warn road users of temporary hazardous conditions which could endanger them or the workers engaged in work on the road.

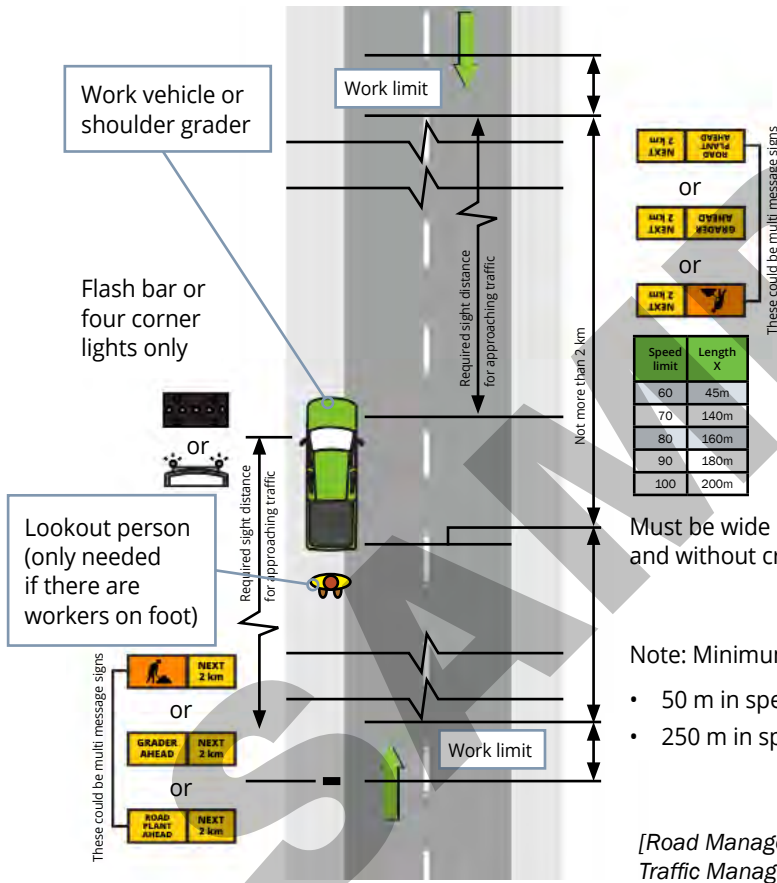
They also indicate the path through, around or past work sites which should be followed, this helps provide protection of partially completed works from damage. Temporary signs are quick and easy to put in place and remove:





Examples of traffic guidance schemes (continued)

Example 3



This traffic guidance scheme can be used when there are a series of short term works involving a frequently changing work area (e.g. shoulder grading, grass mowing, longitudinal surveys) along the road. If there are workers on foot on the roadway or shoulder, they should only work on the same side of the road as the truck and there should be a lookout person ready to warn them of approaching traffic.

Must be wide enough for two-way traffic to pass the site safely and without crossing any barrier line

Note: Minimum sight distance to vehicle-mounted lights needs to be:

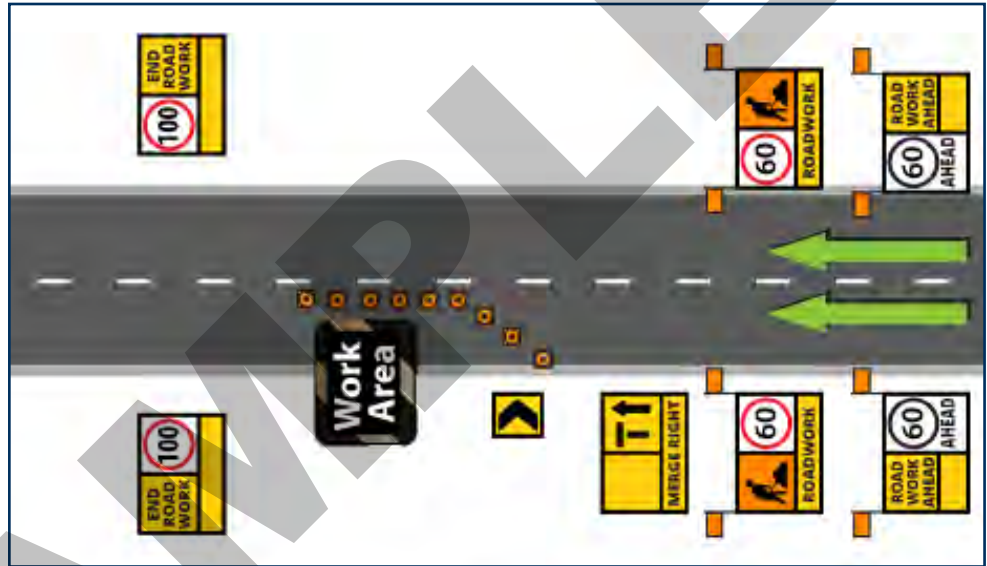
- 50 m in speed zones 60 km/h or less
- 250 m in speed zones 70 km/h or more

[Road Management Act 2004, Code of Practice, Worksite Safety - Traffic Management, Victorian Government Gazette.]

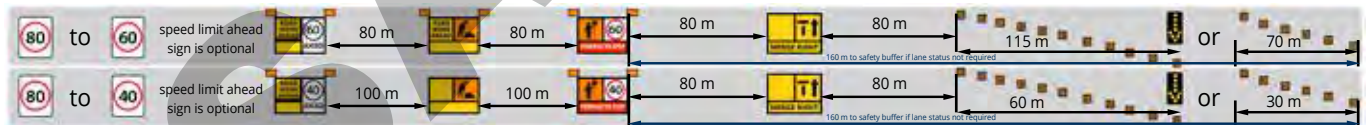
Examples of traffic guidance schemes (continued)

**Example 4**

The use of any traffic control signs on worksites in accordance with a traffic management plan should meet at least the requirements of AS 1742.3-2009.



(Code of Practice - Worksite Safety - Traffic Management No S 351 Vic Govt.)



Examples of common set-ups. Always refer to AS1742.3-2009.

# MONITOR TRAFFIC GUIDANCE SCHEME



## Check work being done

You may need to adjust your traffic guidance scheme depending on the work being done. For example:

- When setting up you should not block a driveway or entry - exit point.
- Signs may need to be placed closer together due to poor visibility, for example, fog, heavy rain, or trees.
- Additional signs may need to be placed if curves or the crest of a hill block visibility.
- A parked truck may block vision and extra signs will need to be placed.

You may need to move the position of the signs in your TGS. The National Standard allows for 10 - 25% variation of sign placement depending on the circumstances.



## Check traffic controllers

You need to check that traffic controllers are doing their work properly. You need to have a process for dealing with them if they are not doing their work properly. A common procedure is to talk to the individual. If this does not result in an improvement you will need to include the supervisor. If this still does not resolve the issue you will need to involve the manager and a written warning be given. In some work places three warnings can lead to a person losing their job. Always follow company procedures when dealing with poor behaviour.

Traffic controllers should be people who can deal reasonably with the public. Language should be polite and swearing or abusive language should never be used.

Appearance, behaviour and attitude are important in gaining respect from the public. Traffic controllers should dress in neat and tidy clothes. Clothing that might distract drivers should not be worn. High visibility clothing should be clean and done up.

Traffic controller should not be seated while trying to control traffic. The traffic controller should hold the stop-slow bat correctly, for example, not hold it upside down while giving hand signals.



## Offending motorists

You need to have procedures in place if a motorist does not obey the traffic guidance system. For example, if a driver does not obey you when facing a hand held stop sign you may need to:

- Use your escape route if necessary.
- Warn other members of your crew as soon as possible. A planned warning system should be part of your traffic management plan. For example, use a two-way radio to warn the other traffic controllers.

Get as much information about the vehicle as possible. For example:

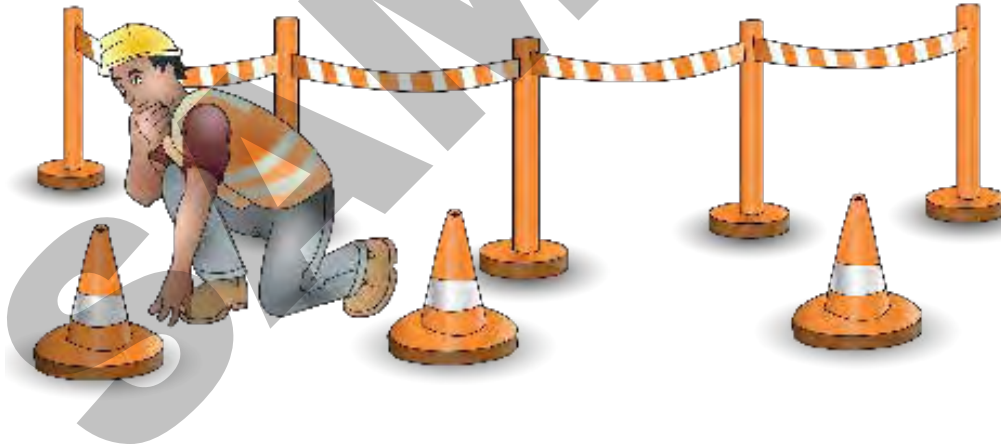
- registration number
- make, model and if possible, the year of the vehicle
- colour of the vehicle
- special features of the vehicle such as roof rack, bullbar, etc.
- description of the driver, eg. beard, long hair, male or female, etc
- number of passengers (if any)
- time the incident happened.



### Traffic Offence Report

Vehicle Registration Number	Report Time (dd/mm/yyyy, hh:mm AM)
<input type="text"/>	<input type="text"/>
Colour	Make/Model (eg. Holden, Commodore)
<input type="text"/>	<input type="text"/>
Expiry of Offence	State of Offence
<input type="text"/>	<input type="text"/>
Location of offence	
<input type="text"/>	
Direction of Travel	
<input type="text"/>	
Weather Conditions	
<input type="text"/>	
Comments	
<input type="text"/>	
Duration (From/To)	Control (Operator)
<input type="text"/>	<input type="text"/>
Special Report	Placed
<input type="text"/>	<input type="text"/>
Completed Time	
<input type="text"/>	

# CLOSE DOWN WORK ACTIVITIES



## Remove/cover signs and devices

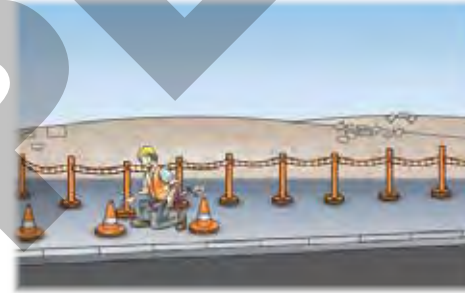
When the works have been completed or the hazard no longer exists it is important that all traffic control signs and devices are removed or concealed (hidden) from the view of motorists.

There is a correct order that this must be done:

1. Remove warning and regulatory signs including termination and end of temporary speed zone signs.



2. Remove delineation of the work area or side track.



3. Remove all delineating devices required to form the taper including the illuminated flashing arrow sign at the end of the taper where required.



4. Remove all intermediate advance warning and regulatory signs and devices required in advance of the taper or start of the work area.



5. Remove advance warning and regulatory signs.





*Remove/cover signs and devices (continued)*

For works that are being done over a long period of time it might be more appropriate to cover signs when work has finished for the day/night.

When covering signs an opaque (not able to be seen through) material should be used.

- The sign should not be visible through the covering
- The covering should not cause damage to the sign.



## Clean, check, maintain and store tools and equipment

When the job is finished and its time to pack up you should make sure that:

- Tools and equipment are clean
- Tools and equipment are checked for damage
- Any maintenance requirements are performed or reported to your supervisor. Tag any faulty tools and equipment
- Tools and equipment are stored and secured correctly. Make sure nothing can fall from the transport vehicle
- Tools and equipment are ready for the next job.



## Record keeping

You need to make sure that the details of the traffic guidance are recorded and reported as needed. A worksite diary may be provided and should include the following:

- Site set up.
- Any changes to the TMP. These should be signed off by the person authorising the change.
- Checks every so often need to be recorded.
- Any incidents or accidents.
- Each entry should be signed and the time given.

The diary and TMP should be kept as it may be required for litigation/legal proceedings in the future.

PROJECT DETAILS:						
LOCATION:						
DATE:						
CONTRACT NO.						
TMP Document no.			TCD Dwg No.		Revision No.	
Date:		Time:	Location:			
Inspection/ changes	By:	Signed:		Changes authorised	By:	Signed:
Details/Comments:						

An example of a form that can be used to record variations.