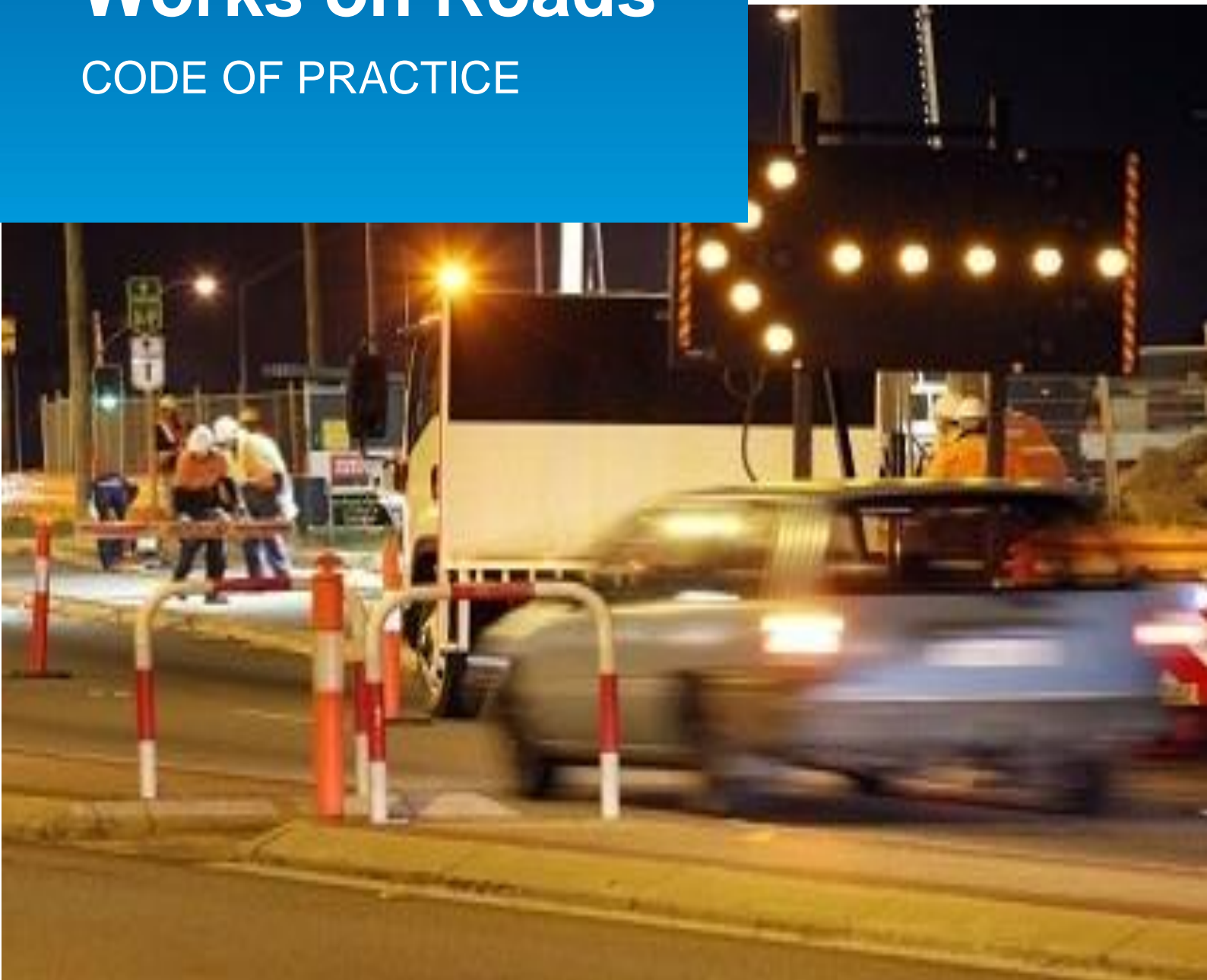




mainroads
WESTERN AUSTRALIA

Traffic Management for Works on Roads

CODE OF PRACTICE



MARCH 2018

TRAFFIC MANAGEMENT FOR WORKS ON ROADS

CODE OF PRACTICE

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Main Roads Western Australia
Planning and Technical Services Directorate
Road Safety Branch

March 2018

This document was originally endorsed by the Traffic Management for Works on Roads Advisory Group on 3 March 2004. Revisions are endorsed by the Advisory Group and approved by MRWA Executive Director Planning and Technical Services. The Advisory Group consists of members from Main Roads Western Australia (MRWA), Australian Institute of Traffic Planning and Management (WA division) (AITPM), Civil Contractors Federation (CCF), Institute of Public Works Engineering Australia (WA division) (IPWEA), Traffic Management Association of WA (TMAWA), WA Local Government Association (WALGA), WA Police (WAPOL), Traffic Management Training Providers, Utility Providers and Engineers Australia (WA division).

A specialist Technical Committee comprising members from MRWA, IPWEA (WA division) and WALGA has provided technical advice in regard to various sections of this document.

Amendments to this document may be made from time to time reflecting the changes in technology, standards or legislation as well as the feedback from the industry, subject to endorsement by the Advisory Group. Users of this document are warned to make sure that they are using the current document which is available on MRWA website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Workzones on Roads'.

AMENDMENT / REVISION STATUS RECORD

Date	Section/ Page	Amendment / Revision Description
March 2018	Whole Document	Terminology Change - Traffic Guidance Scheme to replace Traffic Control Diagram
	Section 4.5	New section – Authorising Traffic Management Plans
	Section 5.2.1	Requirement to use the Main Roads TMP template
	Section 5.2.2	Complex traffic arrangements updated; complex TMPs prepared by RTMs to be endorsed by another RTM
	Section 5.2.3	Requirements for Temporary Road Safety Barrier Details updated
	Section 5.3	Risk Management requirements updated
	Section 5.6	Amendments to Variation to the code and standards requirements
	Section 5.7	More details added for reviewing, auditing and approving traffic management
	Section 6.1.8	New sign – Narrow Temporary Hazard Marker
	Section 6.1.9	New sign – STOP HERE WHEN DIRECTED
	Section 6.3.2	MMS amendments – allowing Lane Status and Road Condition signs to have more than 2 Panels the same colour
	Section 6.5.4	Amendments to delineation of temporary barriers
	Section 6.8.1	Amendments to requirements at traffic signals
	Section 6.8.2	Amendments to requirements at railway crossings
	Section 6.11	Adoption of the Guidelines for the use of TMAs in WA
	Section 7.5	New section – Securing signs
	Section 7.6	New section – Innovative traffic control devices
	Section 8.2	BWTM accreditation – allowing BWTM to directly supervise implementation of signs on low speed local roads
	Section 8.5	AWTM accreditation - Addition of one year experience added to prerequisites
	Appendix 2	New appendix – Traffic Risk Classification
	Appendix 4	Inclusion of HVS requirements in Notification of Roadworks form

	Appendix 5	Signs added – MMS-ADV-79; MMS-ADV-80; MMS-ADV-81; MMS-ADV-82. MMS combination examples added
Feb 2017	Section 5.5	Amendment to record keeping requirements
	Section 6.1.1	Clarification – regulatory and warning signs shall not be altered or modified
	Section 6.1.7	New sign – Cyclist dismount
	Section 6.4.3	Amendment to temporary speed limit approvals
	Section 6.4.7	Amendment to figure 1
	Section 6.5.5	New subsection – Overhead Works on or Near Roads
	Section 6.11	Link to Draft Guidelines for the use of TMAs
	Section 6.14.2	Clarification - the use traffic controller advance warning signs
	Section 6.15	New section – Illuminated Flashing Arrow Sign
	Section 7.4	New section - Video Evidence
	Section 8.2	Clarification – BWTM accreditation required on site when road workers are present
	Section 8.2; 8.5; 8.6	Addition of RIIWHS201D for TC, BWTM and AWTM accreditations
	Section 8.5	Addition of RIIGOV401D for AWTM accreditations
	Section 8.3	Operate TMA accreditation prerequisites amended
	Appendix 4	Signs added – MMS-ADV-9B, MMS-ADV-52B, MMS-ADV-60, MMS-POS-(13-15), MMS-DIV-(8-9), MMS-PED-(7-8); MMS-REG-7, Incident, Fire and Emergency Signs Added.
October 2015	Section 3.1.1	New subsection – MRWA Policy for Works on High Volume Roads
	Section 3.1.2	New subsection – MRWA Traffic Management Company Registration Scheme
	Section 5.2.2	Clarification – emergency lane included as a lane
	Section 5.2.3	Metropolitan Fwy, CAH and MRWA works section removed

Section 6.4.7	Link to MRWA Generic TCD examples
Section 6.8.2	Requirement of a Rail Safety Management Plan added; notification time amended
Section 8.3	Operate TMA pre-requisites amended
Appendix 4	Sign MMS-ADV-55 removed

Foreword

Western Australia has over 170 000 kilometres of roads, which periodically require re-construction, maintenance or work on services within their road reserve. Unfortunately these tasks have the potential to create hazardous situations for both road workers and users that may produce serious or even fatal consequences.

Main Roads Western Australia has adopted the Safe System approach to managing the road network. This Code provides mechanisms to protect all road users (including road workers), acknowledging that people are fallible and have limited tolerances to force.

I have authority under Regulation 297 of the Road Traffic Code 2000, to erect, establish or display, alter or take down any road sign or traffic control signal. With this comes a duty of care to facilitate the safe and appropriate use of road signs and devices. These requirements have been developed in conjunction with key stakeholders in recognition of this obligation.

The requirements promote safe and consistent traffic management practice at work sites on roads in accordance with state legislation and national standards. They require general compliance with the Australian Standard 1742.3 - 2009, provide details of additional requirements necessary to meet Western Australian requirements and advise of variations to the requirements of the Australian Standard that I am prepared to allow on Western Australian roads. The requirements also outline the competency requirements for personnel responsible for managing traffic on work sites and the need to hold a qualification relevant to the specific task in traffic management.

This document, initially released in March 2004, supersedes the MRWA 'Traffic Management for Roadworks Code of Practice. It has been prepared following extensive consultation with Local Government, industry and other stakeholders through Advisory Group meetings, Technical Committee meetings, a technical workshop and other forums.

I encourage all persons involved in managing traffic at work sites on roads to fully familiarise themselves with these requirements, to apply them with due consideration to the situations that present to them and to carefully comply with the mandatory requirements. This will result in safer work sites for yourselves, your fellow workers and all road users.

Richard Sellers
COMMISSIONER OF MAIN ROADS

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1. INTRODUCTION

Roadworks can create potential hazards that can give rise to injury or damage resulting in loss, litigation or prosecution, if reasonable care is not taken to protect both road users and road workers.

Road users are not limited to motorists - they include pedestrians, such as school children and people with disabilities, cyclists and emergency vehicles. Management of work on roads requires consideration of all road user needs and obligations and attention should not focus just on the management of vehicular traffic through, past or around the work site.

Main Roads has adopted the Safe System approach to the management of the road network, recognising that humans make mistakes which can lead to death or serious injury. The Safe System philosophy demands that we make changes to the road network to prevent road trauma and reduce crash forces to survivable limits.

This Code of Practice (herein after referred to as the 'Code') describes the Main Roads Western Australia's (MRWA) requirements for managing traffic at work sites on roads. It requires traffic management for works on roads to be based on AS 1742.3 – 2009, unless otherwise specified by a requirement in this Code. In the event that there is a conflict between this Code and AS 1742.3 – 2009, the Code shall take precedence.

The purpose of this Code is to specify any variations or additional requirements to AS 1742.3 – 2009 which are required at works on roads in Western Australia. The underlying principles of this Code are to:

- Ensure the safety of all road users and road workers in line with the safe system principles.
- Minimise the disruption and inconvenience to all road users resulting from works on roads and;
- Establish uniform procedures for traffic management at work sites that can be easily recognised and understood by road users.

The prescribed practices are the minimum requirements, on which the Traffic Management Plans (TMPs) for all Western Australian roads shall be based. MRWA recognises that situations sometimes arise where application of these requirements is not appropriate and that variation to these requirements will be necessary. When it becomes apparent that deviation is necessary from the requirements of this Code, persons arranging the works should carefully consider all possible options, using common sense and judgment based on 'risk management' carried out in accordance with sections 5.3 and 5.6. Further, they shall ensure that their actions are consistent with related legislation.

Practitioners should be aware of the document titled [Traffic Management for Events Code of Practice](#) that has been placed on Main Roads' website - see 'Our Roads' > 'Temporary Traffic Management' > 'Events on Roads'. This document has been designed to complement the Traffic Management for Works on Roads Code of Practice in respect to the various traffic management issues that are common to works on roads and to events, particularly in respect to the design and implementation of Traffic Management Plans.

2. SCOPE

This Code applies to all work conducted within all road reserves throughout Western Australia and the planning of any proposed works. Definitions of terms such as 'work' and 'road reserve' are provided in Appendix 1.

3. APPROVAL TO WORK WITHIN ROAD RESERVES

Prior to commencing works, approval shall be obtained from the agency responsible for the care, control and management of the relevant roads. Care should also be taken to ensure that all other required authorisations are obtained prior to the commencement of works. These might include agreement to any variations to the application of this Code of Practice and/or Australian Standards, as well as any development, heritage, environmental, and cultural clearances. Lengthy delays may be experienced if all necessary approvals are not obtained, increasing the risk of undesired traffic incidents.

In addition to obtaining approval to work within the road reserve from the relevant Road Authority, other agencies such as emergency services, Police, public transport etc. in the area may need to be notified in advance of the impending works as detailed in section 5.3.

All approvals to conduct works on roads issued by MRWA, Local Governments or other Authorities responsible for roads, shall be suitably noted on the Traffic Management Plan. A mandatory condition requiring traffic management to be carried out in accordance with the requirements of this Code, subject to any agreed variations, shall be included with the approval.

3.1 ROADS FOR WHICH MRWA IS RESPONSIBLE

The Commissioner of Main Roads (CMR) is responsible for the care, control and management of the land over which any declared 'highway' or 'main road' exists. Any party intending to conduct work on any 'highway' or 'main road' reserve shall obtain prior approval from MRWA.

MRWA has developed comprehensive guidelines and an application kit for those intending to undertake work within any 'highway' or 'main road' reserve in regard to 'complex works', 'low complexity works' or 'utility service works'. These guidelines including contact details and the application kit are available on Main Roads website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Conducting Works on Roads' > 'Applications to Undertake Works'.

To facilitate prompt approval of applications to work on roads, persons arranging works should contact the relevant MRWA Regional Office at an early stage, to obtain traffic information, the level of service required on the road during the works and details of any other requirements that need to be considered whilst preparing their Traffic Management Plans. Further information on preparing TMPs is provided in section 5.2.

MRWA requires submission of a TMP with all applications to work within its road reserves. TMPs for metropolitan area shall be sent to enquiries@mainroads.wa.gov.au. If the works are occurring outside the metropolitan area TMPs shall be submitted to the relevant regional office using the generic email address in Appendix 4.

MRWA will, as it considers necessary, conduct audits of TMPs and refer those that do not comply with the requirements of this Code, back to the proponent for submission of an acceptable TMP prior to allowing commencement of works.

Any organisations with statutory authority to enter MRWA road reserves in emergency situations shall advise the MRWA Customer Information Centre (Ph. 138 138) of their work either prior to, or as soon as possible after commencing any emergency service.

3.1.1 Main Roads WA Policy for Works on High Volume Roads

Main Roads requires roadworks on its high volume roads to be managed with due consideration to traffic efficiency. A policy is established which puts in place elevated standards of traffic management for long term projects on high volume roads. This Policy and Application Guideline is titled [Traffic Management at Roadworks on State Roads](#). The policy can be found on Main Roads' website www.mainroads.wa.gov.au go to 'Building Roads' > 'Road and Traffic Engineering' > 'Standards and Technical' > 'Traffic Management' > 'Temporary Traffic Management'

This policy applies to works of duration greater than 4 weeks on the freeways and Tonkin, Reid, Roe and Leach Highways. It also applies to works of duration greater than 6 weeks on other high volume highways and main roads. For this purpose, a high volume road is one with traffic volumes exceeding 4 000 vehicles per day per lane.

The policy sets controls on roadwork speed limits, lane closures, approach tapers, and auditing requirements. Further advice, tools and recommendations are provided, such as real time traffic monitoring and a congestion calculator for traffic management planners.

3.1.2 Traffic Management Company Registration Scheme

Any party implementing temporary traffic management on MRWA controlled roads shall be registered with MRWA. The Traffic Management Company Registration Scheme applies to all parties, including Local Governments and Authorised Bodies. The guidelines including contact details and the application kit are available on Main Roads website at www.mainroads.wa.gov.au ; go to 'Our Roads' > 'Temporary Traffic Management' > '[Company Registration](#)'.

3.2 ROADS FOR WHICH LOCAL GOVERNMENT OR OTHERS ARE RESPONSIBLE

Any party including utility service providers who are Authorised Bodies intending to conduct works on a road reserve that is not a declared 'highway' or 'main road', shall prior to commencing the works, contact the relevant Local Government or the other Authority that is responsible for the care, control and management of the road to confirm their requirements.

Location	Contact
Main Road reserve in Perth Metropolitan Region	enquiries@mainroads.wa.gov.au
Main Road reserve outside Perth Metropolitan Region	The relevant MRWA Regional Office - see Appendix 4
Local Government road reserve	The relevant Local Government
Other road reserves	The Authority responsible for the road

Table 1 - Where to obtain approval to work in road reserves

3.3 WORKS AFFECTING TRAFFIC SIGNAL OPERATION

Where the proposed traffic management involves modification to existing signal phasing, number of traffic lanes and / or timing on local OR state roads; the proposed changes to these devices are to be submitted to enquiries@mainroads.wa.gov.au (see section 6.8.1).

Note: The Traffic Management Plan's (with RTM endorsement) shall be approved by the relevant road authority before being sent to Main Roads as per Table 1.

4. AUTHORITY TO ERECT TRAFFIC CONTROL DEVICES

4.1 MRWA

The CMR has authority under the Road Traffic Code, to erect, establish or display and alter or take down any road sign or traffic control signal (subsequently referred to herein as 'to utilise traffic signs and devices'). The CMR has delegated specified officers of MRWA to administer the utilisation of traffic signs and devices in accordance with the MRWA Delegation of Authority Manual.

4.2 MRWA AGENTS

MRWA agents or contractors shall, subject first to the approval of their MRWA Contract Manager, utilise traffic signs and devices in accordance with this Code for the purpose of managing traffic at works on roads. MRWA Contract Managers will comply with the MRWA Delegation of Authority Manual in regard to providing such approvals.

4.3 AUTHORISED BODIES AND THEIR AGENTS

The CMR authorises Authorised Bodies and their agents, in accordance with the provisions of the Road Traffic Code, to utilise traffic signs and devices subject to any conditions attached to their Instrument of Authorisation. An example of a typical 'authorisation' is contained in Appendix 3.

A register of Authorised Bodies is available on MRWA's website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Workzones on Roads' > '[Authorised Bodies](#)'.

4.4 OTHERS NOT PARTY TO AN INSTRUMENT OF AUTHORISATION

Others that are not party to an Instrument of Authorisation but need to utilise traffic signs and devices for the purpose of managing traffic for works on a road, shall first contact the Authority responsible for the care, control and management of the road to confirm their requirements.

If the Authority responsible for the care, control and management of the road is an Authorised Body, it will determine the requirements and approval process for others not party to an Instrument of Authorisation. Unless advised otherwise by such Authority, the responsibility for ensuring signs and devices are erected and maintained in accordance with this Code will, at all times, remain with the party undertaking the works.

If the Authority responsible for the care, control and management of the road is not an Authorised Body, authority to utilise traffic signs and devices either by such Authority itself, its agents or contractors or, by a third party, shall be obtained from MRWA with the concurrence of such Authority.

4.5 AUTHORISING TRAFFIC MANAGEMENT PLANS

General Requirements

By signing the 'Road Authority Authorisation' section of a Traffic Management Plan (TMP) the Road Authority (Main Roads and/or LGA) is endorsing the implementation of temporary traffic management on that road. The Road Authority is not responsible for ensuring every aspect of the TMP is compliant with AS1742.3-2009, this code and/or the Traffic Management for Events Code of Practice (Events Code).

It is the responsibility of the TMP designer (AWTM or RTM), the person who checks the TMP and the RTM who reviews and endorses (if applicable) the TMP to ensure that the plan is compliant with AS1742.3-2009, this code and/or the Events Code. The Road Authority also has a duty of care to the safety of road users and road workers within their jurisdiction, and as a result their review focuses on the TMP's suitability in catering for all road users, speed zone appropriateness, traffic efficiency and ensuring after care and staging TGSs are provided.

Traffic Management on Roads Controlled by Main Roads

Main Roads, or Main Roads contractors with an Instrument of Authorisation, shall review and authorise the plan as per the general requirements above.

Traffic Management on Local Government Roads

The Local Government Authority shall review and authorise the plan as per the general requirements section above.

At permanent traffic signals on local government roads Main Roads will review and authorise the required changes to the Main Roads Traffic Signals only (see section 6.8.1). Additionally, where works are on local government roads but it is identified that there may be an impact to nearby roads that are controlled by Main Roads, then Main Roads shall review and authorise the TMP as per the general requirements section above.

5. PLANNING THE WORKS

5.1 DUTY OF CARE

Any party who undertakes work on a road that is open to traffic, by law has a 'duty of care' to take all steps that are reasonably necessary to prevent any person being injured or damage being caused to the property of others while carrying out those works.

The Occupational Safety and Health Act specifically requires:

- An employer to provide a safe place of work for its employees and
- Any person in control of a workplace, to take measures to ensure persons who have access to that workplace (including road users in case of a roadworks site) are not exposed to hazards.

5.2 TRAFFIC MANAGEMENT PLANS

5.2.1 General

Any party undertaking work on a road shall prepare a Traffic Management Plan (TMP) that adequately provides for the safety of workers and road users while maintaining an adequate level of service to road users. To ensure a consistent approach is taken when developing a TMP one of the Main Roads WA TMP templates¹ (see [here](#)) shall be used as a basis for the development of the plan. Any section headings that are not applicable to the TMP being developed shall be kept in the document and noted as not applicable (with the intent of keeping the TMP section numbers the same throughout all TMPs).

All TMPs shall be prepared by a person holding Main Roads accreditation in Advanced Worksite Traffic Management (AWTM). A person holding Main Roads accreditation in Worksite Traffic Management (WTM) may make on-site adjustments to the traffic guidance schemes in accordance with the scope and objectives of the TMP. Further information regarding requirements for WTM / AWTM tasks and accreditation is provided in section 8.

TMPs shall be signed by the person that prepared them, along with his/her name in block print, AWTM certificate number and the date of endorsement of the plan. In addition, the person preparing a TMP shall also include a statement on the plan confirming that a site visit² was undertaken by him/her or another person under his/her direction, prior to preparing the plan. For Generic TMPs a site visit by the AWTM that prepared the TMP is not required, however the person responsible for implementing the TMP shall ensure it is applicable for the site and shall complete the generic/site specific TMP checklist (see below). Where the generic TMP is not a suitable a site specific TMP shall be developed.

The amount of details and information to be provided in a TMP can vary depending upon the nature and complexity of the project. For routine/repetitive type works [see AS 1742.3 Clause 2.2.1 (a) and (b)] such as minor pavement maintenance, a generic TMP may be appropriate. See [Generic/Site Specific TMP Checklist](#) to assist in determining the need for the traffic management setup to be generic or site specific, on the MRWA website www.mainroads.wa.gov.au ; go to 'Our Roads' > 'Temporary Traffic

¹ Note: the basic TMP template may be used when conditions in the Basic TMP checklist (section 5) are met. Go to www.mainroads.wa.gov.au > 'Our Roads' > 'Temporary Traffic Management' > 'Plan Preparation' > 'How to prepare a traffic management plan'

² It is good practice to include photographs as evidence that the site visit was undertaken.

Management' > 'Plan Preparation' > 'How to Prepare a Traffic Management Plan'. However, those implementing the plan need to be very aware of the scope of situations covered by the plan. Comprehensive details on the preparation of TMPs are available on MRWA website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Plan Preparation'.

Where a TMP is to be used on more than one occasion or at a number of generic locations, continuous improvement must be considered. This will ensure the quality of traffic management is maintained or improved where required. The process should include debrief meetings to discuss any issues or risks associated with the plan. TMP's must be kept up to date taking into account changes in; traffic volumes, vehicle types, the road environment, work practices, legislation and/or standards. As a minimum, TMPs should be reviewed at least once in any 12 month period.

With the exception of repositioning of traffic control devices within the allowable tolerances specified in AS1742 .3 - 2009, where any on-site changes to a TMP are proposed, such changes shall be endorsed by a person holding current Worksite Traffic Management (WTM) or AWTM accreditation. A copy of all documentation relating to the endorsement of the changes shall be held on-site by the person managing the works.

All TMP's must contain a contingency plan for fatality and serious injuries which must detail arrangements for preserving the worksite. See section 6.10.

All Traffic Guidance Schemes (TGSs) shall be signed and dated by the person that prepared the TMP and be appropriately labelled so that those implementing the TGSs implement the correct Traffic Management for the particular work situation (Labelling example: 'when clearance to traffic is less than 1.2 m'). It is recommended that all site specific TGSs contain the days and times the TGS is to be implemented.

5.2.2 Traffic Management Plans Involving 'Complex Traffic Arrangements'

'Complex traffic management arrangements' are those activities and traffic management arrangements that include any of the following:

- i. Any plan assessed as having a residual risk-rating of H (high-risk) or greater as a result of a risk assessment undertaken during the planning stage.
- ii. Any plan that meets all of the following:
 1. Occurs on a multilane road in the metropolitan area; and
 2. Closes or diverts one or more lanes (includes emergency lanes); and
 3. Occurs on any Freeway OR road with a permanent speed limit of 90 km/h or more (or a section of these roads reduced to 80km/h due to traffic signals); and
 4. Has a traffic volume of 15,000 vpd or more.
- iii. Any plan at permanent traffic signals that requires:
 1. Alteration to the function of the traffic signals or signal display (e.g. flashing yellow, masking displays, modifying movements or phasing); or
 2. Closure of a traffic lane (including tapers or road closures):
 - a. within a signalised intersection, or
 - b. within 30 m of the stop line on the approach, or
 - c. within 30 m of the adjacent stop line on the departure, or
 3. Closure of any part of a signalised dedicated turning lane;

See section 6.8.1 for more details.

- iv. Any Traffic Management arrangement involving Temporary Road Safety Barriers.
- v. Any plan that involves the removal or replacement of permanent road safety barriers that are preventing a potentially catastrophic outcome, e.g. commuter rail or freeway barriers.
- vi. Temporary diversion of traffic into the opposite lane of a multilane road creating a free flowing contra-flow situation (does not apply to contraflow implemented at overtaking lanes).
- vii. Plans that will redistribute traffic, significantly lowering the level of service and safety of the surrounding road network, including isolated intersections.
- viii. Any other situation where the road authority or authorised body consider the traffic arrangement sufficiently complex to warrant RTM review and endorsement.

TMPs for works involving 'complex traffic arrangements' shall be reviewed and endorsed by a Roadworks Traffic Manager (RTM) in the form of his/her signature, the date, block printed name and RTM accreditation number. Further information regarding requirements for RTM accreditation is provided in section 8.

TMPs for works involving 'complex traffic arrangements' that have been prepared by a person holding RTM accreditation shall be reviewed and endorsed by another person with RTM accreditation.

RTMs shall only endorse finalised Traffic Management Plans that include a documented risk assessment of the proposed works in accordance with AS/NZS ISO 31000, Risk Management – Principles and Guidelines – Risk Management (2009) and Appendix 2 of this Code, during the planning stage. A TMP shall not contain a residual risk rating VH (very high-risk) for any proposed traffic management treatment. A TMP involving a residual risk rating H (high-risk)³ shall be reviewed and endorsed by a RTM.

Regardless of whether a particular TMP involves 'complex traffic arrangements' or not, the Road Authority/Authorised Body that grants approval for the works to proceed may determine that the TMP requires to be endorsed by a RTM.

With the exception of repositioning of traffic control devices within the allowable tolerances specified in AS1742.3 - 2009, where any on-site changes to a TMP involving 'complex traffic arrangements' as determined in the planning stage are proposed, such changes shall be subject to a risk assessment using the same methodology documented in the TMP (unless an alternative methodology has been specified in the TMP). The risk assessment shall be undertaken by a person holding current Worksite Traffic Management or Advanced Worksite Traffic Management accreditation. These changes shall be within the scope and objectives of the TMP (see table 5), anything outside this will need to be endorsed by the RTM and authorised by the relevant road authority.

A copy of all documentation relating to the risk assessment shall be held on-site by the person managing the works. Additionally, following the on-site implementation of the changes, a copy of this documentation shall be referred back to the Roadworks Traffic Manager that endorsed the design of 'complex traffic arrangements', as soon as practicable for review and feedback to the person/contractor managing the works.

Roadworks Traffic Managers must abide by the Code of Conduct in discharging their

³ Traffic flow may be exempted, traffic flow less than 135 % of the allowable capacity as detailed in AS1742.3 may be endorsed by a person with AWTM accreditation as part of a variation to standards form, see section 5.6.

professional duties at all times. The [Code of Conduct for Roadworks Traffic Managers](#) is available on MRWA's website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Roadworks Traffic Managers'.

5.2.3 Temporary Road Safety Barrier Detail in TMPs

As required in section 5.2.2 of this code any TMP involving Temporary Road Safety Barriers shall be reviewed and endorsed by a RTM. It is the responsibility of the RTM to ensure the TMP contains adequate barrier detail. Where temporary barriers are required these shall be designed in accordance with manufacturer's requirements, Austroads and MRWA technical guidelines. Calculations shall be appended to the TMP.

TGSs shall provide sufficient detail so that installers can determine offset from traffic lanes, worksite length/width, deflection distances required, containment fences (if required), start and finish points of the barrier, flare rates (if any) and necessary end treatments. Temporary barriers must be rated at the appropriate test level and be an approved barrier type listed on the MRWA Website (Go to www.mainroads.wa.gov.au "Building Roads" > "Standards and Technical" > "Road & Traffic Engineering" > "Roadside Items" > "List of Approved Road Safety Barrier Systems").

Where temporary barriers are required, implementation methods should be detailed in the TMP and TGSs should be prepared.

5.3 RISK MANAGEMENT

Management of risk is central to a TMP.

This involves the identification and analysis of all risks likely to arise during works on roads including during the setting up, operating, changing and ultimate dismantling of traffic guidance schemes, followed by the determination of appropriate measures to mitigate those risks. The process is applicable at all levels of planning and operation.

The risk assessment shall be undertaken in accordance with AS/NZ ISO 31000:2009 and Appendix 2 of this Code and included within the TMP.

5.4 NOTIFICATION OF APPROVED ROADWORKS

Roadworks have the potential to cause significant delays or access problems, or create adverse impacts on existing road infrastructure such as traffic signals, railway crossings, bridges, etc. For example, the relocation or diverting of traffic using lane closures or detours can change loading dynamics or introduce additional loadings on nearby bridges to the extent that bridge capacities and load restrictions may be exceeded.

Notification of approved Roadworks shall be sent using the form in Appendix 4 to the organisations listed in the distribution list shown on the form at least seven (7) days prior to works commencing, in the following situations. (Note: an editable 'Word' document version of the [Notification of Roadworks Form](#) is available on MRWA's website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Forms and Publications'.):

- Works involving the complete closure of any road.
- Works on primary and district distributor roads of more than four (4) hours duration where it is expected that major traffic delays and congestion will occur.

- Works on any road where speed restrictions and lane closures will be in place more than five (5) days, but major traffic delays are not expected.
- Traffic management activities involving the establishment of a contra-flow.
- Traffic management activities resulting in any direct or indirect changes to traffic flows and/or traffic composition on bridges, including situations where such changes are a result of lane closures or traffic detours.
- Works on any primary or district distributor road where construction activities will make it difficult or impossible for the passage of general access or oversize vehicles, and traffic control devices cannot be easily shifted on a temporary basis to allow the vehicle to pass.
- Works between hold-lines on signalised intersections where work will last longer than one (1) hour, or a lesser time if significant delay and congestion will occur.
- Works impacting on the operation of any Crossing Attended Warden controlled children's crossing.

Information and procedures for providing notification to the relevant rail infrastructure manager about works impacting on railway crossing operations, is given in section 6.8.2.

It is important that where traffic is to be detoured via an existing road network, the road authority responsible for roads forming the detour is notified of the traffic arrangements during the planning of the works, i.e. when preparing the Traffic Management Plan (see section 5.2).

It is the responsibility of the individual or organisation proposing to undertake works to ensure all relevant stakeholders are appropriately notified of the works and subsequent impacts on traffic conditions.

5.5 TRAFFIC MANAGEMENT RECORDS

It is a requirement that any party undertaking work on or alongside a road, shall keep a copy of the TMP onsite. Any changes to traffic control device placements shall be recorded in the TMP (e.g. TGSs, risk assessment, daily diary, etc.) including the name and accreditation number of the person who approved the change in accordance with Appendix A of AS 1742.3 - 2009. It may become necessary to produce these records in evidence at legal proceedings at a future time. The records can greatly assist all parties to ascertain pre-existing site conditions on which claims for damages are usually based. Good records can save considerable investigation resources, and assist in deciding the most appropriate response to a claim.

Claims for damages are often made a considerable time after an incident. Under the Limitation Act (WA), claims for negligence must be commenced within six (6) years. However, a defendant may be unaware that an action has commenced for a further year as the plaintiff has this time in which to serve the writ.

MRWA recommends that traffic management records be securely stored for a period of not less than seven (7) years from the date of completion of the works. The Authorised Body that grants approval to a Traffic Management Plan should keep a copy of the approved Traffic Management Plan and any daily records of their supervisory staff that capture the on-going implementation of the Traffic Management Plan.

In case of all works undertaken for or on behalf of MRWA, the persons arranging the traffic management works shall keep their own daily records in addition to a copy of the approved TMP together with any other relevant records.

For all other works the requirements for record keeping in relation to traffic management shall be determined by the Authorised Body responsible for or authorising the work.

5.6 VARIATION TO THE CODE AND STANDARDS

Where compliance to this Code or the recommendations of AS1742.3 cannot be satisfied e.g. due to the physical road environment (i.e. a building or fence close to the road or minimal existing road width), legislative constraints (i.e. environmental, cultural or heritage constraints), etc., a variation to this Code, or standards will be required. Approval for the variation shall be obtained from each relevant Road Authority responsible for the care and control of the road on which the placement of traffic control take place.

Before seeking the Road Authority's approval it is imperative that a risk analysis of the variation be carried out. Where the variations result in a traffic management treatment of lesser standard, it shall be based on risk management undertaken by a Roadworks Traffic Manager in accordance with AS/NZS ISO 31000:2009 and Appendix 2 of this Code. The details of the risk assessment process shall be documented in the Traffic Management Plan with RTM endorsement in the form of his/her signature, the date, block printed name and RTM accreditation number.

A person with Advanced Worksite Traffic Management accreditation is permitted to endorse a traffic management plan where traffic flow per lane is less than 135% of the allowable road capacity as outlined in table 4.10⁴ of AS1742.3 (i.e. RTM endorsement is not required). This shall still be treated as a variation to standard, with risk assessment process completed by the AWTM, as outlined above. Hourly traffic flow per lane equal to or greater than 135% of allowable road capacity as detailed in table 4.10 AS1742.3 will require a variation to standard with RTM endorsement. Approval for any variation to table 4.10 of AS1742.3 shall be obtained from the relevant Road Authority.

Note: Table 4.10 of AS1742.3 gives guidance on the number of lanes required at short term works and long term works of up to 7 days duration. For longer term works, precise calculation of capacity may be necessary to ensure that traffic demand can be met.

A risk assessment in accordance with AS/NZS ISO 31000:2009 and Appendix 2 of this Code shall also be carried out if any party considers that additional measures above and beyond the minimum requirements of the Code are necessary.

Where the local road authority had not been granted an Instrument of Authorisation, pursuant to Regulation 297(2) of the Road Traffic Code 2000 relating to Traffic Management for Roadworks, approval shall be obtained from Main Roads WA.

For activities undertaken on a State road or on behalf of Main Roads WA, the approval for the variation shall be obtained from the appropriate Main Roads WA' Officer using the [Variation to Standards Application Form](#) available from the Main Roads WA website www.mainroads.wa.gov.au; go to 'Our Roads' > Temporary Traffic Management' > 'Forms and Publications' > 'Forms'

The approved variation form or a letter from the local road authority approving the variation shall be provided as an attached supplement to the traffic management plan.

⁴ The word intersection within table 4.10 of AS1742.3 relates only to considered directions of a road that have a control device/s (e.g. traffic signals)

5.7 REVIEWING, AUDITING AND APPROVING TRAFFIC MANAGEMENT

5.7.1 Auditing

Auditing processes may be applied at the planning and implementation phases of temporary traffic management. The extent and timing of the auditing will be influenced by the size, scope and complexity of the project as well as the TMP and the TGS that is developed.

Like any audit process, the findings and recommendations should be fed back into the TMP risk management process so that appropriate changes can be considered and then applied to improve worker and road user safety.

There are a number of different audits, reviews, inspections and checks that can be done of a TMP or Traffic Guidance Scheme.

Road Safety Audit

Austroroads Guide to Road Safety Part 6: Road Safety Audit states road safety audits can be conducted for roadwork traffic management during construction of significant projects.

A road safety audit is a formal examination of the proposed traffic scheme in which an independent qualified team reports on potential crash occurrence and severity which may result from the introduction of the project.

Any road safety audit conducted on a Main Roads project shall comply with the Main Roads Policy and Guidelines for Road Safety Audit, see [here](#). Road safety audits conducted on a Local Government project should comply with the relevant Local Government's road safety audit policy where applicable or otherwise the *Austroroads Guide to Road Safety Part 6: Road Safety Audit*.

Suitability Audit

A Suitability Audit is a systematic and independent examination of the extent to which the proposed Traffic Management Plan addresses specified requirements and provides a measure of the project's capability in meeting those requirements. This audit is conducted by an RTM prior to the implementation of the TMP. The RTM:

- audits the entire TMP and all TGSs;
- audits against contractual requirements;
- considers all safety issues related to the traffic management including crash risks;
- considers traffic flow and efficiency;
- inspects the site;
- writes an audit report, see template [here](#);
- holds a completion meeting with relevant site personnel, e.g. project manager, traffic manager, etc.

Compliance Audit

A Compliance Audit is a systematic and independent examination of the extent to which a project fulfils its traffic management requirements (including the Traffic Management Plan) and provides a measure of the project's performance in meeting specified requirements. This audit is conducted by an RTM after a TMP/TGS has been implemented and may be conducted at various stages of the project. The RTM:

- audits the entire TMP and all TGSs (may only be able to cover off the implementation of the TGS in place at the time of the audit);
- audits against contractual requirements;
- considers all safety issues related to the traffic management including crash risks;
- considers traffic flow and efficiency;

- inspects the site;
- writes an audit report, see template [here](#);
- holds a completion meeting with relevant site personnel, e.g. project manager, traffic manager, etc.

Suitability Review and Compliance Inspection

A Suitability Review or Compliance Inspection are the same as the Suitability/Compliance audit except these are conducted by a person with AWTM accreditation and it does not result in a full report being produced (can also be undertaken by an RTM).

It is recommended practice to have project managers, work supervisors or other site staff that hold AWTM accreditation conduct regular Suitability Reviews or Compliance Inspections of the traffic scheme at long term works. However, compliance with an approved TMP or standard does not necessarily mean it is safe for all road users, which is the primary objective of a road safety audit.

It should be noted that someone that holds AWTM accreditation may not have the required experience in road safety auditing, road safety engineering or temporary traffic management to identify crash potential or other issues related to the scheme.

5.7.2 Field Operation

Supervisory personnel should establish a daily routine that ensures the below checks and inspections are undertaken at appropriate intervals during the project.

Operational Check

An operational check involves an onsite drive through and check of the operation of the traffic management scheme, ensuring it is operating as intended at all times of the day (particularly at peak times). This check focuses on road efficiency, traffic delays, road user compliance/provisions and any incorrect visual cues. This should be done by the project team to ensure the TMP is operating safely and efficiently as intended, this is particularly important when the traffic management schemes change (e.g. different stages and/or after care).

An operation check should be:

- Conducted by AWTM or WTM (or person within road authority with equivalent level of knowledge and experience)
- Have a site inspection and drive through.
- Conducted post TMP implementation.

Findings should be reported back to the project manager or traffic manager.

Onsite Inspection

An onsite inspection is a frequent inspection of the traffic management once it has been implemented onsite. This inspection entails checking the signs, devices, method statements, and workers accreditation have been correctly applied onsite. This ensures the TMP has been correctly implemented. Onsite inspections:

- Are conducted by BWTM or WTM onsite.
- Should be conducted before work starts, during works; when changes are made to the scheme; and when closing down at the end of the shift in accordance with Appendix A of AS1742.3.

5.7.3 Road Authority Reviewing and Authorisation

Before authorising any traffic management to be implemented the road authority should ensure they are fulfilling their duty of care as outlined in section 4.5. Undertaking a suitability check will help ensure this duty of care is met:

Suitability Check

A suitability check is a check of the traffic management plan to ensure it addresses the specified requirements of the works, all types of traffic and the road environment. This includes a check of compliance with standards and the identification and mitigation of all site specific and operational risks.

This check ensures the TMP is appropriate prior to being implemented.

- Conducted by AWTM or WTM (or person within road authority with equivalent level of knowledge and experience).
- Conducted prior to implementation.
- Does not require a report to be written.
- Desktop check that does not require a site visit.

Note: it is good practice for traffic planners have someone undertake this type of check before submitting the TMP to the road authority.

5.7.4 Review, Audit and Authorisation Summary

Checklists have been developed to assist personnel to prepare, review, audit, approve and / or authorise traffic management plans. The checklists are located on the Main Roads WA website at www.mainroads.wa.gov.au: 'Our Roads' > 'Temporary Traffic Management' > 'Plan Preparation' > '[Reviewing and Auditing Traffic Management](#)'

Task	When undertaken	Required MRWA Accreditation
Suitability Check	Desktop review prior to the road authority authorising the TMP.	<i>Advanced Worksite Traffic Management; or Worksite Traffic Management; or Person within road authority with equivalent level of knowledge and experience</i>
Onsite Inspections	Before work starts, during works; when changes are made to the scheme; closing down at the end of the shift.	<i>Minimum - Basic Worksite Traffic Management Desirable – Worksite Traffic Management</i>
Operational Check	Conducted onsite post implementation; when significant changes are made to the scheme; and/or during peak periods.	<i>Worksite Traffic Management or Advanced Worksite Traffic Management (may be conducted by someone in the road authority with equivalent level of knowledge and experience)</i>
Suitability Review	Prior to implementation (site visit required).	<i>Advanced Worksite Traffic Management</i>
Compliance Inspection	Post implementation and/or when significant changes occur to the scheme (site visit required).	<i>Advanced Worksite Traffic Management</i>
Suitability Audit	Prior to implementation of traffic management plans involving 'complex traffic arrangements', as may be specified for works undertaken for or on behalf of MRWA; or when the project manager or road asset manager determines it is required.	<i>Roadworks Traffic Manager</i>
Compliance Audit	Post implementation of traffic management plans involving 'complex traffic arrangements', as may be specified for works undertaken for or on behalf of MRWA; or when the project manager or road asset manager determines it is required.	<i>Roadworks Traffic Manager</i>
Road Safety Audit	Any stage of the project where changes to the road layout or traffic scheme may introduce a potential for crashes.	<i>Senior Road Safety Auditor</i>

Table 2 – Auditing and Field Operation Tasks

6. VARIATIONS FROM AS 1742.3 AND ADDITIONAL REQUIREMENTS

The following variations to the requirements of AS 1742.3 – 2009 and additional requirements are to be applied when managing traffic for works on roads in Western Australia.

6.1 TEMPORARY SIGNAGE

6.1.1 General

Any roadworks signage that is not within the AS 1742 series needs to be approved by Main Roads WA before it can be implemented on the road network. All Main Roads approved signage is on the Main Roads WA website at www.mainroads.wa.gov.au; go to 'Using Roads' > 'Standards and Technical' > 'Road and Traffic Engineering' > '[Traffic Management](#)'. Warning and regulatory signs should not be altered or modified; particularly regulatory signs which may become unenforceable.

6.1.2 REDUCE SPEED Signs

AS 1742.3 – 2009 makes no provision for the use of temporary REDUCE SPEED signs (G9-9) at roadwork sites. However, from experience it has been found beneficial to erect REDUCE SPEED signs where the approach speed of traffic is high and vehicles must slow down. Australian Standard sign G9-9, normally recommended for permanent installation, should be used at temporary roadworks as described below. Details of the sign are in AS 1742.1 and AS 1742.2.

The use of REDUCE SPEED signs is not mandatory in built-up-areas where the posted speed limit is 60 km/h or less. When used, MRWA recommends they be placed on both sides of the carriageway, 0.5 D metres, (where D is the distance in metres determined in accordance with Clause 4.1.5 of AS1742 .3 – 2009), or 25 metres, whichever is the longest, in advance of the start of the lowest speed zone at a work site. They should be positioned so that the reason for the reduction in speed is apparent and the signs are simultaneously visible to approaching drivers.

For worksites on a road normally posted with a speed of more than 60 km/h and is subject to a temporary speed limit of 40 km/h during working hours only, outside of working hours the REDUCE SPEED signs should be placed in advance of the 60 km/h sign, being the lowest speed that would apply after-hours. This is on the condition that the 60 km/h sign is required to be in place because of residual hazards for motorists at the worksite after-hours preventing reinstatement of the normal higher speed limit.

When used in conjunction with a temporary speed limit sign in a multi-message sign arrangement (see section 6.3), the REDUCE SPEED panel should be placed within the same multi message frame.

REDUCE SPEED signs used for works on roads shall always be used in conjunction with all other advance warning devices and signs required by AS 1742.3 - 2009. They shall not be used in place of any other required warning sign.



G9-9

6.1.3 NEW WORK NO LINES MARKED Signing

Clause 4.7.2(b) of AS 1742.3 – 2009 provides for the mandatory display of ROADWORK AHEAD (T1-1) signs for situations where road users will experience changed road conditions, including the absence of line marking. Clause 3.7.4 of AS1742.3 – 2009 describes the use of NEW WORK NO LINES MARKED (T3-11) and NO LINES DO NOT OVERTAKE UNLESS SAFE (T3-12) signs that are required to be installed in advance of locations where pavement markings normally required for driver guidance have been removed or have not been placed on new surfacing work.

In many cases the road works, including road surfacing, have been completed to the extent that all workers, plant and equipment, and temporary roadside hazards, as well as related traffic control devices, are no longer present at the worksite. In these situations where pavement markings have not yet been installed, it would be expected that the NEW WORK NO LINES MARKED and NO LINES DO NOT OVERTAKE UNLESS SAFE signs, as appropriate, would provide sufficient warning about the road conditions ahead without the need for ROADWORK AHEAD signing to also be displayed.



T3-11



T3-12

6.1.4 ROAD INSPECTION Sign

The below ROAD INSPECTION sign can be displayed on vehicles which are used for road inspections. The signs shall be located on the roof or rear of the vehicle and shall not obscure vehicle mounted warning devices.



MR-TVM-15

6.1.5 Signs for Managing Pedestrians

To help prevent signs from obstructing paths Main Roads WA permits the below Pedestrian Series signs to be used as stand-alone (box edged) signs to manage pedestrians.



MMS-PED-1



MMS-PED-2



MMS-PED-4



MMS-PED-6

6.1.6 Labelling Ownership of Signs

The rear of temporary signs (MMS or Standard signs) may be marked to identify the owner of the sign, subject to the following conditions:

- a) the rear marking may consist of a logo and/or lettering indicating the owner only;
- b) the logo and/or lettering shall not exceed a total of 200 mm square;
- c) the logo and/or lettering shall be black in colour and applied either by adhesive material or paint.

6.1.7 CYCLIST DISMOUNT Sign

Prior to undertaking any works that impact on bicycle paths this Code and AS 1742.3 require these works to be planned to ensure cyclist safety whilst minimising disruption and inconvenience. Bicycle paths should be provided with the same scale and width as existing facilities. However, it is acknowledged that sometimes when conducting short term maintenance works on shared paths and bicycle paths it may not be practical to provide a surface that is suitable for all bicycles.

In the first instance other warning signs to warn riders of the surface condition and the need to reduce speed shall be displayed.

As a last resort, where cyclists cannot physically traverse the surface, the CYCLISTS DISMOUNT sign may be used. Therefore any use of the CYCLIST DISMOUNT sign will only be for short durations and with the approval of the relevant road authority.

Note: The inappropriate use of this sign will result in riders failing to dismount where instructed.



MMS-PED-7

6.1.8 Temporary Hazard Marker



MR-TAW-39

The Temporary Narrow Hazard Sign MR-TAW-39 should only be used to delineate hazards and non-trafficable work areas adjacent to the travelled path in the following situations:

- Used to indicate the beginning of a line of traffic cones or bollards where the devices themselves may not be sufficiently visible to approaching traffic.
- Used to supplement cones or bollards when closing traffic lanes to reassure traffic of the correct side (where there is insufficient width for T series).

All other situations shall use T-Series Hazard Markers.

6.1.9 STOP HERE WHEN DIRECTED



MMS-ADV-82

The STOP HERE WHEN DIRECTED sign may be used at roadworks during traffic controller operations when vehicles may be required to stop at a particular point in advance of the traffic control position.

6.2 COVERING EXISTING SIGNAGE

In accordance with Clause 2.4.4 of AS 1742.3 "Existing signs and traffic control devices which are inappropriate to, or conflict with, the temporary worksite situation shall be covered, obliterated or removed".

Where it is necessary to cover a sign face temporarily, caution must be exercised as some coverings will cause permanent damage to the sign face following exposure to moisture and sunlight e.g. plastic materials, especially black, is forbidden as it is known that these materials are responsible for severe and permanent damage within 24 hours.

Specifications for covering existing signage can be found in Main Roads WA [Specification 601 – Signs](http://www.mainroads.wa.gov.au), located on the MRWA website at www.mainroads.wa.gov.au; go to 'Building Roads' > 'Tender Preparation' > 'Specifications' > '600 Series – Traffic Facilities'

6.3 GUIDELINES FOR MULTI-MESSAGE SIGNS

6.3.1 Introduction

This section describes the permitted uses of multi-message (3-panel) signs at Roadworks and Events sites on roads.

Multi-message signs are an alternative to stand-alone signs. They are usually more conspicuous than stand-alone signs because of the striking colour combination, and they make the task of signings easier and cheaper due to the lightweight compact sign material.

Multi-message signs may be used in conjunction with stand-alone signs as required.

6.3.2 Guidelines for Use

1) The use of multi-message signs shall comply with the following requirements.

- a) Only Main Roads WA approved message plates or signs shall be used and shall only be placed in the panel as shown in Appendix 5 - Multi-message sign inventory and application schedule.

For sign specification refer to the Main Roads WA website www.mainroads.wa.gov.au ('Building Roads' > 'Standards and Technical' > 'Road and Traffic Engineering' > 'Traffic Management').

- b) Regulatory control message plates, where used shall always be positioned closest to traffic and reflect conditions.
- c) Regulatory signs shall not be used in-conjunction with the NEXT 'x' km or 'x' km AHEAD message plates.
- d) Lane status 600 x 600 message plate shall only contain two lane instruction (arrow) messages. Lane status 1200 x 600 message plates may contain up to 4 lane instruction messages.
- e) Multi-message sign assembly should, where practical, be duplicated on both sides of the road or carriageway, of the road to which the signs apply or as recommended by Australian Standards.
- f) Signs shall be positioned in accordance with the requirements of Australian Standards - Manual of uniform traffic control devices AS1742.3.
- g) All sections of the frame assembly shall be filled with an approved sign. Messages should be logically linked and conflicting messages should not be used.
 - i. Except as noted in the schedule, where used, at least one of the 600 x 600 panels must be symbolic. *
 - ii. Only 2 panels shall consist of a similar background colour. *
 - iii. Colour combination for sign legend and background to match existing practices included colour and reflectivity;

iv. Have high contrast between panels when used as a multi-message sign (i.e. if possible close colouring should be avoided on adjacent panels) *.

v. Duplication of the same messages on the same multi-message sign shall be avoided.

Otherwise stand-alone signs, as recommended by Australian Standards shall be used.

* Items i, ii and iv do not apply to signage used exclusively for control of pedestrian traffic. Item ii and iv do not apply to the following signs:

- Lane Status Series Signs;
- Road Condition Series Signs;

h) Excluding 6.1.6 (above), no company names, advertising or any other words, symbols or markings shall be displayed on the front or rear of the multi-message frame or panels.

i) Rear of the message plate shall be non-reflective.

6.3.3 Frames for Multi-Message Signs

a) The frame for the multi-message sign assembly should be capable of holding two 600 x 600mm sign panels along the top and one 1200 x 300mm sign panel along the bottom and or one 1200 x 600mm sign panel along the top and one 1200 x 300mm sign panel along the bottom.

b) The frame panel should be capable of holding back-to-back mounting of message plates.

c) For frame specifications refer to the Main Roads WA website www.mainroads.wa.gov.au ('Building Roads' > 'Standards and Technical').

d) The frame should comply with the requirements of Australian Standards AS 1742.3, Clause 3.3.1 – Sign Mounting General.

6.3.4 Substrates for Multi-Message Signs

A variety of different materials can be used for the sign substrates including the following:

- 5 mm core flute
- Aluminium
- AV stabilised plastic

The substrates for the signs shall be of sufficient thickness and rigidity to prevent the signs being blown out of the frame.

The rear of the sign substrate shall be non-reflective.

6.4 SPEED LIMIT ZONES

6.4.1 General

A temporary speed limit at roadworks is a compromise between a speed that maximises the safety of workers and traffic, but permits an acceptable traffic flow that does not unnecessarily impede road users. Guidance on appropriate temporary speed limits is provided in Clause 4.9 of AS 1742.3 – 2009.

A roadwork speed limit shall only apply while the condition warranting it exists.

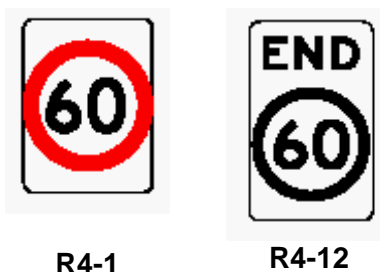
Temporary speed zones established in accordance with the above requirements will be enforced by Police in the same manner as normal speed zones.

6.4.2 Temporary Speed Limit Signs

All temporary speed limits shall be displayed in accordance with Clause 4.9 of AS1742.3 – 2009.

Where speed limit signs are displayed to change the speed limit from that which existed up to that point, signs shall be displayed on both sides of the carriageway. Repeater signs do not have to be displayed on both sides of the carriageway.

MRWA recommends against displaying speed limits on unsealed roads because the road surface condition may not always be appropriate for the displayed speed limit. However, if a temporary speed zone is considered necessary on an unsealed road and frequent monitoring and maintenance of the surface condition can be maintained, the departure speed limit sign shall be the appropriate 'End speed limit' sign (R4-12).



6.4.3 Approval of Temporary Speed Limit Signs

Authorised bodies are permitted to erect temporary speed limit signs without approval from MRWA. Where temporary speed limits other than 40 km/h, 60 km/h, or 80 km/h are necessary, prior approval from the relevant road authority under a variation shall be obtained.

All temporary speed limit signs on State Roads shall be approved by MRWA prior to their use, approval shall come from the authorised officer listed in section 13.1, Traffic Signs, of the MRWA Delegation of Authority (note this applies to all traffic signs and devices).

6.4.4 Offset Speed Zones on Undivided Roads

Offset speed zones result in more credible worksite speed limits, subsequently increasing driver compliance in locations where speed reductions are actually warranted. This results in a safer worksite for road users and workers.

The use of offset speed zones on divided roads and within buffer zones on undivided roads as specified in AS1742.3 Clause 4.9.9 is supported and strongly encouraged.

Additionally offset speed zones on an undivided carriageway through worksites are permissible where all the following conditions are met:

- works are being undertaken off the carriageway, and;
- the conditions for which the lower speed limit is required are confined to the applicable direction of travel only, and;
- any multilane undivided road that has more than one lane travelling in the same direction past the worksite and no intersections or direct property access **OR** the road is an Access Road.

Offset speed zones may present risks at particular worksites; these risks need to be examined prior to adding offset speed zones to the TMP.

6.4.5 Mobile Temporary Speed Zones

Clause 4.6.5 of AS 1742.3 – 2009 specifies a mandatory requirement for mobile temporary speed zones to be used at mobile work sites if there are workers on foot or using small items of plant on the roadway or shoulder/parking lane, and the workers are working closer than 1.2 m to moving traffic.

Previously, the Road Traffic Code 2000 made no provision for mobile speed limits; as speed limit signs were required to be “erected near the boundary of a carriageway.” Therefore operationally Police could not legally enforce such mobile temporary speed limits.

However, the wording in Road Traffic Code 2000 has now been changed so that speed limit signs can be “displayed or erected on or near a carriageway.” Therefore as mobile temporary speed signs will be erected on a carriageway, Police can now legally enforce the displayed speed limit.

Note: The regulatory speed restriction signs (R4-1) must be displayed. The temporary speed limits must be terminated, with end speed limit signs (R4-12) being recommended for mobile works.

6.4.6 Advanced Warning of Temporary Speed Zones (Buffer Zones)

Clause 4.9.5 of AS 1742.3 – 2009 specifies advance warning of temporary speed zones (buffer zones) shall be provided by means of; (a) Speed limit Ahead sign in advance of the start of the lower speed zone; or (b) Comprising of a speed zone of intermediate value. It is desirable to reduce speed limits in 20km/h steps. However, where the prevailing site conditions are appropriate, entry speed zone may be reduced in a single step from 110km/h to 80km/h, from 90km/h to 60km/h or from 70km/h to 40km/h.

Speed signs at the commencement of a buffer zone shall be accompanied by or preceded by advance warning ‘Ahead’ signage such as BRIDGEWORKS AHEAD, DETOUR AHEAD, EVENT AHEAD, GRADER AHEAD, ROAD CLOSED AHEAD,

ROADWORK AHEAD or ROAD PLANT AHEAD signs as appropriate.

Where a buffer zone had been provided in accordance within Clause 4.9.5(b) (AS1742.3), traffic leaving the lower speed limit shall not be subject to a buffer speed zone merely because the limit applies to the opposing direction of traffic.

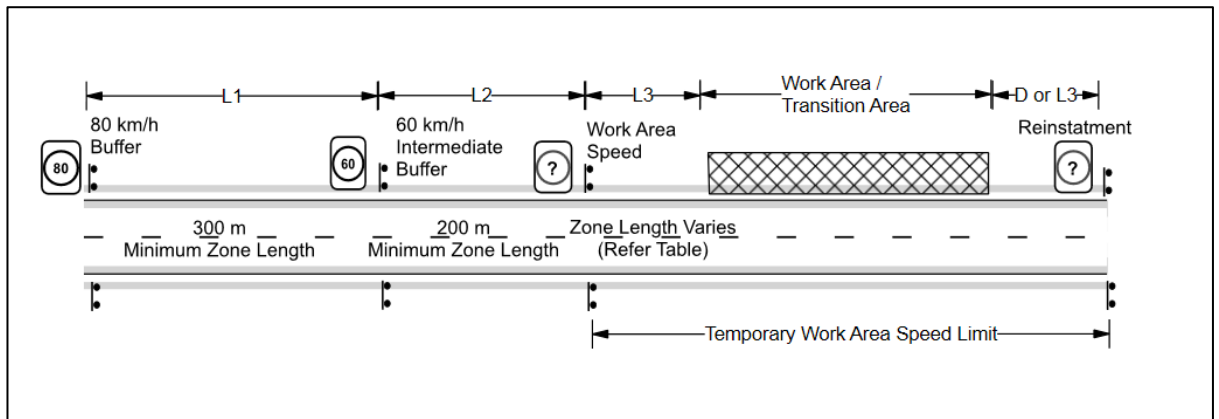
6.4.7 Setting out Temporary Speed Zones (Buffer Zones)

This section has been prepared to give guidance to roadworks and events traffic management planners, and others, in the placement of temporary speed zones.

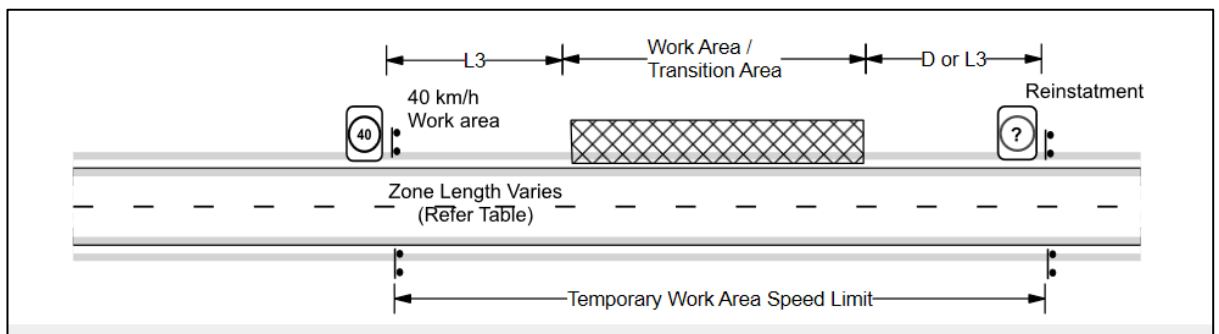
The objective of this section is to:

- Establish a consistent and uniform approach in the placement of temporary speed zones.
- Reduce avoidable delay to road users due to excessive and/or unnecessary temporary speed zone lengths.
- Encourage better compliance by road users to temporary speed limited areas.
- Educate road users by the standardised placement of speed zone signs.

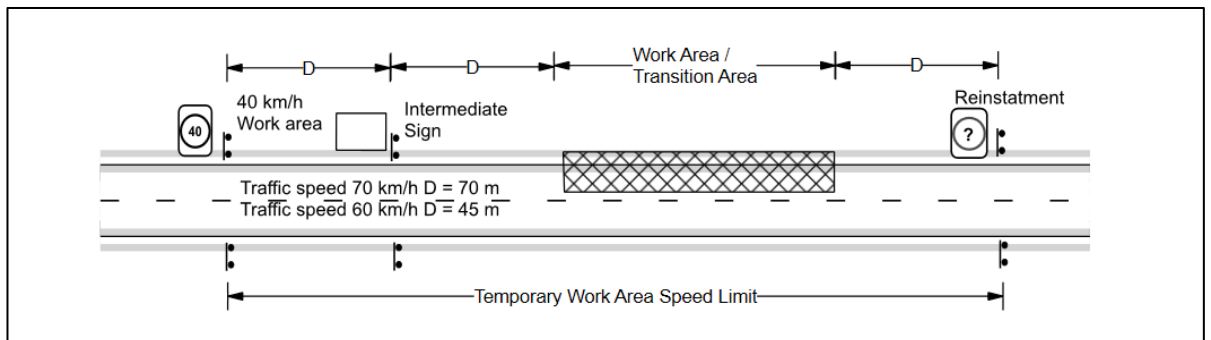
Main Roads WA requires the values (listed in Table 3) be used whenever temporary speed zones are required, unless a site specific hazard is identified and a risk assessment determines the need to extend the sign placement. This shall be documented in the risk assessment and response table of the TMP.



(a) Buffer zones



(b) No buffer zone required with 40 km/h work area speed limit (where posted speed limit less than 80 km/h).



(c) L3 length extension due to intermediate advance signs (e.g. Prepare to Stop).

Notes:

1. Work Area / Transition Area may include safety buffer, taper and/or traffic controllers position;
2. Illustrations do not show all of the signs and devices that will be required at the worksite.
3. The speed limit reinstatement signs should be placed on the back of the first signs after the worksite. This will either be D m or L3 (refer table) depending on the worksite. Note: where there are no signs in the opposite direction or the work area speed zone is becoming too long; the speed limit should be reinstated D m from the last point impacted by the works.

Figure 1: Temporary Speed Signs

Approach Speed (km/h)	Works Area Speed (km/h)	80 km/h Speed Buffer Required	L1 (80km/h buffer) (m)	L2 (60km/h buffer) (m)	L3 ⁵ (m)
110	80	No	N/A	N/A	220
	60	Yes	300	N/A	160
	40	Yes	300	200	90
100	80	No	N/A	N/A	200
	60	Yes	300	N/A	160
	40	Yes	300	200	90
90	80	No	N/A	N/A	180
	60	No	N/A	N/A	180
	40	No	N/A	200	90
80	60	No	N/A	N/A	160
	40	No	N/A	200	90
70	60	No	N/A	N/A	90
	40	No	N/A	N/A	90
60	40	No	N/A	N/A	45

Table 3- Placement of temporary speed limit (buffer zone) signs⁶

Notes:

The locations of temporary speed limit signs shown in Table 3 have been primarily based on the requirements of AS1742.3 with some adjustment to increase safety and consistency of application.

These spacings are required for the majority of scenarios. However, where a risk assessment determines that spacings need to be changed they shall be changed in line with AS1742.3. When referring to Table 4.6 of AS 1742.3 to determine taper lengths at traffic control; the speed of traffic will be determined by the free flowing traffic speed at the traffic control location (this shall always be $\leq 60\text{km/h}$).

The table takes into account the requirement that the 60km/h speed zone length (L2) must not be less than 150m to ensure that adequate time is given to road users to adjust to the temporary speed zone before introducing an additional (lower) temporary speed limit.

The table also takes into account Clause 4.1.5(a) and (b) of AS1742.3 for the positioning of temporary signs related to the speed of traffic in the speed zone immediately preceding the zone in which the temporary sign occurs.

To ensure uniformity and consistency a value of 200m for Zone Length (L2) and 300m for Zone Length (L1) has been adopted.

To terminate a Temporary Speed limit, Speed Restriction (R4-1) signs indicating the speed limit existing beyond the Traffic Management site shall be placed at the end of the termination area (where normal traffic conditions resume) as specified in Clause 4.9.7, AS1742.3. **Note: It is a legal requirement that a speed zone be terminated either by another regulatory speed control sign, or end speed limit sign (refer to the road**

¹ Advanced warning signs placed within L3 may result in a longer L3 than is stated here (this will often be the case when reducing speeds from 60 km/h to 40 km/h). Additionally AS 4.7.8 (b) requires PTS to be relocated or repeated so that they are visible minimum of 'D' m from the end of queue, which in most cases will result in an extended L3.

² Advanced warning signs installed within zones shall be spaced at D distance for that zone (refer to AS 1742.3, 4.1.5) A safety buffer of 20 – 30 m shall be provided in all speed scenarios (refer to AS 1742.3, 4.1.4 C for where this can be extended).

traffic code).

Where it is unsafe for the buffer speed zones to be applied (e.g. unsealed roads) 'speed limit ahead' signs shall be used in place of the buffer speed zones (see AS 1742.3).

The spacings shown in Table 3 have been applied within the [MRWA Generic Workzone Traffic Guidance Schemes](http://www.mainroads.wa.gov.au) on the MRWA website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Plan Preparation' > 'Generic Workzone Traffic Control Diagrams'

6.4.8 Dimension D

Australian Standards AS1742.3-2009 does not provide specific guidance as to the selection criteria to be used to determine the dimension of 'D' at low speed environments 45 km/h or less.

To ensure that a safe work environment shall be maintained and to make certain that the positioning of devices are within the line of sight of the intended road users. The value of dimension 'D' shall be determined as shown in Table 3.

Speed of Traffic km/h	Dimension 'D' m
55 or less	15
56 to 65	45
Greater than 65	Equal to speed of traffic, in Km/h

Table 4 - VALUE OF DIMENSION D

The speed of traffic shall be taken in accordance with the requirements of item 4.1.5(a) of Australian Standards AS 1742.3.

6.5 EXCAVATIONS AND OTHER HAZARDS

All work sites are individual and persons preparing TMPs need to carefully design treatments taking into consideration the specific characteristics of each site. Excavations require special consideration to ensure their structural integrity and to minimise the risk of vehicles driving into them and losing control. Above ground hazards also need to be considered. This section of the Code details the protective treatments required at excavations and other hazards.

Definition of 'excavation' is provided in Appendix 1.

6.5.1 Planning Works Involving Excavations

As there is an increased risk of motor vehicles driving into excavations during the hours of darkness, where practicable, works should be planned so that the excavations are to be backfilled and compacted by the end of each working day. On sections where excavations cannot be backfilled and compacted, delineation and other requirements shall be provided during the hours of darkness in accordance with Clause 2.4.3 of AS 1742.3 - 2009.

6.5.2 Protective Treatments for Above Ground Level Hazards

It may be necessary due to site constraints during the course of the works, to place non-frangible objects such as construction equipment and materials close to the path of traffic or re-route traffic in close proximity to existing non-frangible objects such as power poles or trees.

These hazards need to be recognised when planning works and where possible, equipment and material should be located at a distance beyond the distance indicated in for excavation hazards in Table D1 of AS1742.3 - 2009 (distance from closest edge of hazard to closest edge of nearest traffic lane) and the type of protective treatment should be decided based on a risk management approach considering the number of vehicles that are likely to be exposed to the hazard, type and extent of the hazard, likely severity of any vehicle impacting the hazard, and severity of damage that might result to a vehicle colliding with the protective treatment etc.

Similarly when planning side-tracks and detours, care should be taken to locate them with adequate separation from any existing non-frangible objects.

6.5.3 Safety Objectives for Steep Slopes

The safety objectives for addressing the potential hazards created by steep slopes (on batters, embankments, etc.), as described in Austroads' Rural Road Design Guide – A Guide to the Geometric Design of Rural Roads, should be taken into account when determining the requirements for temporary protective treatments.

6.5.4 Temporary Road Safety Barrier Systems

The use, selection and location of temporary barriers should be in accordance with the [Main Roads WA Guide to the Design of Workzone Barriers](#), located on the MRWA website at www.mainroads.wa.gov.au; go to 'Building Roads' > 'Standards and Technical' > 'Road & Traffic Engineering' > 'Roadside Items' > 'Workzone Barriers'

Only Main Roads WA approved road safety barrier systems shall be used; a list is located on the MRWA website at www.mainroads.wa.gov.au; go to 'Building Roads' > 'Standards and Technical' > 'Road & Traffic Engineering' > 'Roadside Items' > '[List of Approved Road Safety Barrier Systems](#)'

Delineation of Temporary Road Safety Barriers

Temporary Road Safety Barriers help protect road workers and road users from hazards, however the barriers themselves can also present a hazard to road users. Barriers must be adequately delineated to ensure road users are aware of their presence. This delineation is a requirement at all worksites where there is insufficient lighting of the temporary roadwork barriers. Where both lane and guide post delineation is provided there is not requirement for barrier delineation as in these instances the barrier is located a safe distance from the travel way.

Where there is insufficient lighting and/or delineation Temporary Pavement Markers (Flaps) shall be used to provide delineation of Temporary Road Safety Barriers. The Temporary Pavement Markers must meet the requirements of the specifications below. For any additional information refer to specification 604 (see link below).

The Temporary Pavement Markers shall be installed with retro reflective tape in the colours specified below (class 1A minimum):

- a) Single sided red on barriers installed on the left hand shoulder or verge.
- b) Single sided yellow on barriers installed in the median of a divided road
- c) Double sided yellow where the barrier is positioned in between opposing direction of travel and delineator is placed on the top of the barrier
- d) Single sided white on barriers installed between lanes in the same direction of travel (rare scenario).

Note: the above does not replace the need to provide temporary delineation of the travelled path in accordance with AS1742.3. This temporary barrier delineation is considered a replacement for guide post delineation where the location of the barrier is close enough to the edge of the road.

Location of Temporary Pavement Markers:

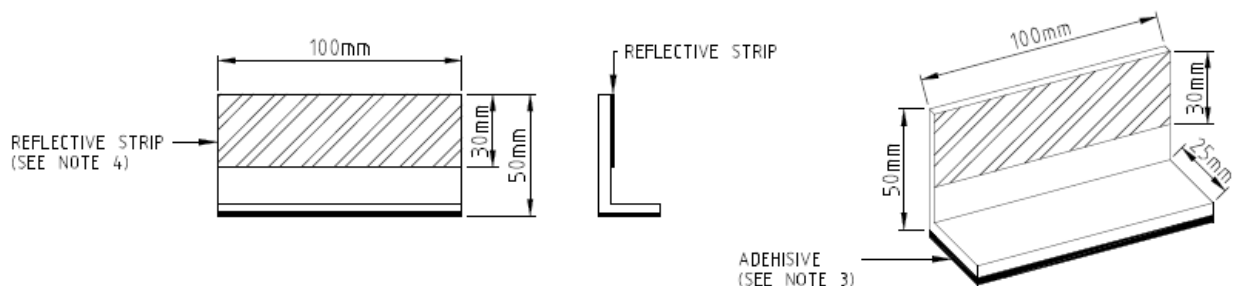
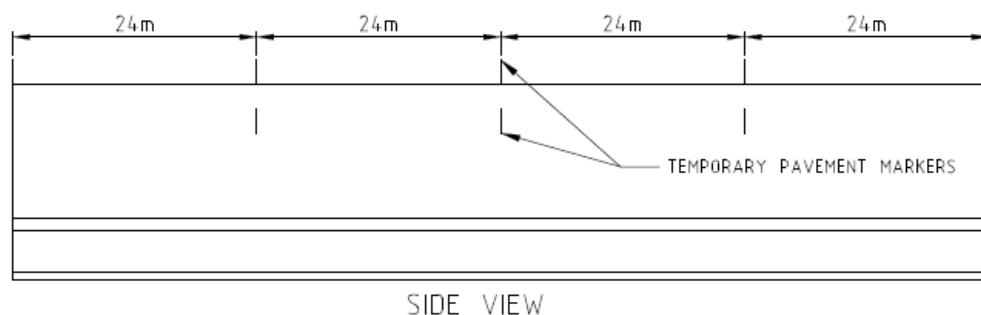
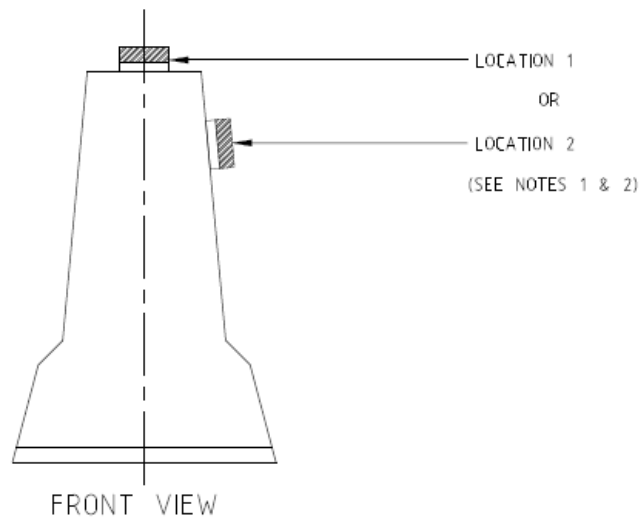
The Temporary Pavement Markers providing delineation shall be located on top of or on the traffic side of the barriers (< 300mm from the top), spaced at 24 m intervals along the barrier.

Material Specifications:

- Extrusion. Polyurethane, 80 shore A
- Cover. PVC Flexible. Clear.

For further details on specifications for the adhesive and reflectivity properties of the Temporary Pavement Markers, see [MRWA Specification 604](#), located on the MRWA website at www.mainroads.wa.gov.au; go to 'Building Roads' > 'Tender Preparation' > 'Specifications' > '600 Series – Traffic Facilities'

1. REFLECTIVE AREA OF THE TEMPORARY PAVEMENT MARKERS TO BE LOCATED PERPENDICULAR TO THE FACE OF WHICH THEY ARE APPLIED TO.
2. TEMPORARY PAVEMENT MARKERS SHALL BE ALIGNED SUCH THAT THE RETROREFLECTIVE SURFACES OF THE MARKER ARE ANGLED BETWEEN 85 TO 95 DEGREES TO THE DIRECTION OF ONCOMING TRAFFIC.
3. ADHESIVE FOR TEMPORARY PAVEMENT MARKERS SHALL BE EITHER HOT MELT ADHESIVE OR EPOXY ADHESIVE. REFER TO MRWA SPECIFICATION 604; SECTION 604.12.02 FOR FURTHER DETAILS.
4. FOR REFLECTIVITY OF TEMPORARY PAVEMENT MARKERS REFER TO MRWA SPECIFICATION 604; SECTION 604.12.01 FOR FURTHER DETAILS



6.5.5 Overhead Works on or Near Roads

The Occupational Safety and Health Regulations 1996 do not permit loads to be suspended over, or travel over, a person (see regulation 4.53). This means, that any work occurring using cranes or other overhead equipment shall, as far as practical, not occur over live traffic lanes or footpaths.

6.6 PEDESTRIAN PROTECTION IN CONTRA-FLOW SITUATIONS

Whilst performing works on divided roads, it is sometimes necessary to divert traffic onto the adjoining carriageway so that vehicles temporarily travel in both directions on that adjoining carriageway. This can create a risk to pedestrians who may not think to look in both directions before crossing the affected carriageway. The following options shall be considered to reduce this risk during contra-flow operations.

(a) Channelling Pedestrians to Safe Crossing Points

The locations in the vicinity of the works where pedestrians are most likely to need to cross the carriageway should be identified. Containment fencing in accordance with

Clause 3.10 of AS 1742.3 – 2009 should be installed to channel pedestrians to defined crossing points. Appropriate signing (in accordance with Clause 4.14.8 (c) (iii) of AS1742.3 – 2009) and a pedestrian maze should be provided to make pedestrians aware of the changed traffic direction.

(b) Warning Signs for Motorists

Signs to slow motorists approaching the diversion and pedestrian warning signs (MR-TAW-31) at regular intervals to warn motorists to watch for pedestrians should be provided.



MR-TAW-31

(c) Dedicated Personnel

Dedicated personnel should be provided to patrol the site watching for pedestrians to ensure that they cross safely.

Additional information for meeting the requirements of pedestrians and cyclists can be found in Austroads Guide to Traffic Management publication.

6.7 CHILDREN'S CROSSINGS AND SCHOOL ZONES

Where works are located within a School Zone, consideration should be given to undertake the works outside the period indicated on the school zone sign. Where this cannot be done OR where a children's crossing is located within a roadwork's site, the following actions shall than be taken:

- The Western Australian Police Children's Crossing Unit (or their designated representative) shall be consulted at the planning stage to finalise arrangements for the safe passage of school children and pedestrians.
- Ensure that the speed shown on the temporary speed zone and termination signage shall be less than or equal to the value shown on the School Zone sign during the School Zone period. In cases where the worksite extends beyond the school zone, termination signage shall reflect the posted speed applicable to that section of road.
- Where the children's crossing stop line and side bollard have been removed as part of the roadworks, traffic controllers shall be positioned at the location of the children's crossing stop line(s) to give guidance to vehicles where to stop on the approach side of the children's crossing.
- Where as a result of roadworks, normal traffic paths are altered at a controlled children's crossing. Crossing attendant wardens shall be deployed to stop traffic at the direction of the traffic controllers. If a crossing attendant warden is not available a Main Roads WA accredited traffic controller shall ensure the safe passage of pedestrians at the children's crossing.

Main Roads WA accredited traffic controller shall be deployed to assist pedestrian to cross safely at uncontrolled pedestrian crossing located within a school zone.

- Provisions for pedestrian and bicycle facilities in accordance with Clause 2.3.7, AS1742.3.

6.8 TRAFFIC CONTROL PROCEDURES AT PERMANENT TRAFFIC SIGNALS AND RAIL CROSSINGS

6.8.1 At Permanent Traffic Signals

Any plan at permanent traffic signals that requires the below is defined as 'Complex Traffic Arrangements' (see section 5.2.2):

1. Alteration to the function of the traffic signals or signal display (e.g. flashing yellow, masking displays, modifying movements or phasing); or
2. Closure of a traffic lane (including tapers or road closures):
 - a. within a signalised intersection, or
 - b. within 30 m of the stop line on the approach, or
 - c. within 30 m of the adjacent stop line on the departure, or
3. Closure of any part of a signalised dedicated turning lane

TMPs requiring this shall be reviewed and endorsed by a Roadworks Traffic Manager. Plans that meet this requirement shall follow one of the below procedures depending on the agency responsible for the care, control and management of the road and the road location:

State Controlled Roads

Plans at permanent traffic signals on State Controlled roads within the metropolitan area will be reviewed by Main Roads and shall be sent to enquiries@mainroads.wa.gov.au prior to the activities commencing.

Plans outside the metropolitan area shall be sent to the relevant Main Roads regional office prior to the activities commencing.

Note: TMPs for non-Main Roads works occurring on state roads will be reviewed by the relevant Main Roads Region's Works by Others team in conjunction with the Application to Undertake Works within the Road Reserve.

Approval shall be sort from Main Roads 30 business days prior to the works commencing.⁷

Local Government Roads in the Metropolitan Area

For plans at permanent signals on Local Government roads in the Metropolitan Area approval shall be sort from Main Roads via enquiries@mainroads.wa.gov.au at least 15 business days prior to the works commencing. TMPs sent to Main Roads shall have RTM endorsement and be authorised by the relevant Local Government.

Local Government Roads outside the Metropolitan Area

For plans at permanent signals on the Local Government roads outside the Metropolitan Area approval shall be sort from Main Roads via the relevant Main Roads regional office at least 15 business days prior to the works commencing. TMPs sent to Main Roads shall have RTM endorsement and be authorised by the relevant Local Government.

General Requirements

Traffic Controllers shall never direct traffic contrary to that indicated by traffic signals. If traffic is required to move contrary to a traffic signal display, then the Traffic Management Plan shall specify that the signals be switched to flashing yellow and that the intersection shall be controlled manually by Traffic Controllers.

⁷ For works by or on behalf of Main Roads WA, approval from either the MRWA Road Planned Interventions section (metropolitan area) or the relevant MRWA regional Network Management section shall be sort 15 business days prior to the works commencing.

Once approval has been obtained, the traffic management personnel onsite shall contact the MRWA Traffic Operations Centre (TOC) on 138 111 immediately prior to the works to enable the required signal modifications to be made. TOC shall also be contacted throughout the works if any additional approved modifications are required to be made. Traffic management personnel shall contact TOC at the conclusion of the works to advise that the signals can now be returned to normal operation.

If such traffic control will result in traffic congestion that is considered unacceptable by both the Road Authority and the WA Police Service and it is not possible to safely detour traffic or conduct the works at another time when the congestion can be avoided, a Traffic Police pointsman shall be arranged from the relevant Police District. Traffic Police pointsmen can be arranged by contacting the WA Police Service on Ph. 131 444. No less than three (3) weeks' notice is required by the WA Police Service to arrange Traffic Police pointsmen.

Traffic Controllers using double-sided STOP/SLOW hand-held signs to control traffic at intersections, shall cover or remove the SLOW sign to ensure that vehicles on other approaches do not proceed into the intersection.

If there is a risk of motorists departing a traffic controlled section and ignoring nearby traffic signals after reading the hand-held SLOW sign, an additional Traffic Controller shall be stationed at the approach to the signals (from the works), to display a hand-held STOP sign when the traffic signals display red.

In emergency situations, such as where a vehicle may have collided with traffic signals and traffic control is urgently required, Police emergency assistance can be arranged by contacting the WA Police on Ph. 131 444.

For further information see FAQ, [here](#).

6.8.2 Railway Crossings (Including Crossings without Flashing Signals)

No work within 10m of a railway level crossing shall be undertaken without prior approval from the relevant Rail Infrastructure Manager, except in an emergency in which case notification shall be provided to the Rail Infrastructure Manager as early as practically possible.

Where the proposed works are within the distances from a railway level crossing given in Table 5 and are likely to result in realignment of a road section or intersection impacting on the railway level crossing or significantly affect the existing traffic flow through a railway level crossing, the relevant Rail Infrastructure Manager shall be notified at least two (2) weeks prior to the works by the party arranging the works. The Rail Infrastructure Manager may determine a Rail Safety Management Plan (SMP) is required for road works which impact on the safe operation of the railway.

Speed limit (km/h)	Distance from railway (m)
<70	150
70 to 90	200
>90	300

Table 5 - Distances from railway level crossings within which the Rail Infrastructure Manager shall be notified

Traffic Controllers need to be aware that motorists will generally follow their directions when they differ from other signals, signs and devices on the road. They need to take special care at railway crossings to ensure they do not direct traffic through signals requiring vehicles to stop, unless it is clearly safe for vehicles to proceed through them.

Where a railway level crossing exists within a section being controlled by a Traffic Controller, a flag person with the relevant Track Access Permit should be stationed at the traffic stop line of the railway crossing at least 3m from the nearest rail, equipped with a two way radio, to watch for trains and advise the Traffic Controllers to stop traffic in time for train movements through the level crossing.

The flag person should make sure that the relevant Rail Infrastructure Manager has been notified before he/she commences work. On each day, prior to the commencement of works, the Rail Infrastructure Manager should be advised of the works that will be proceeding on that day, so that train drivers can be warned of the works and advice can be received on the times that trains are expected to use the crossing (this will be determined by the relevant Rail Infrastructure Manager).

If the section of road under traffic control is to one side of the railway level crossing, but within the distances in Table 5, the flag person stationed at the railway level crossing shall be stationed on the same side of the crossing as the section under traffic control, at the traffic stop line or at least 3m from the nearest rail. The flag person stationed at the railway level crossing shall be equipped with a hand-held STOP/SLOW sign that has the rear 'SLOW' sign covered. This is to prevent vehicles approaching the other side of the railway level crossing following the SLOW instruction and ignoring other signs or flashing signals.

Traffic Controllers shall also ensure that vehicles stopped do not queue back over a railway level crossing. If there is a chance of this happening, vehicles should be stopped prior to the railway level crossing.

Traffic Controllers and all other personnel working within 10m of any railway level crossing shall wear a high visibility orange day/night safety vest that complies with AS/NZS 1906.4 and AS/NZS 4602.

6.9 WORKS ON RESIDENTIAL ACCESS ROADS

Works on any residential roads where the traffic speeds have been reduced to 60 km/h or less and where the volume of traffic does not exceed 1500 vpd, may be undertaken in accordance with the provisions of Clause 4.13.5 and/or Clause 3.5.3 of AS 1742.3 – 2009 except that where the length of shuttle is less than 20m, the requirement for clear visibility beyond the work area may be reduced from 75m to 40m provided appropriate advanced warning signs are erected and the speed is not more than 40km/h.

6.10 FATALITY OR SERIOUS INJURY AT WORKSITE

Where a fatal or serious injury occurs at a worksite, it is imperative that evidence of all aspects of the incident is preserved until police have had an opportunity to complete a forensic examination.

Where a fatal or serious injury has occurred, contamination of the site shall only occur for the purpose of saving life or rendering assistance. The site must not be cleaned or tampered with (including all traffic management devices) and crash debris shall be left in situ until police and/or Worksafe arrive.

Guidance for Emergency and Unplanned Works is provided in AS1742.3 in Appendix B. These procedures can be applied in the event of a fatality or serious injury occurring at a worksite. However, preserving evidence takes precedence over traffic access. Therefore additional lane closures or complete road closure may need to be applied in order to achieve this. Guidance on partially or fully closing a site to traffic should be sought from the TMP closure/detour contingency plan specific to that site (general requirement of TMP's see Clause 5.2.1)

6.11 TRUCK MOUNTED ATTENUATORS

The Guidelines for the use of Truck Mounted Attenuators (TMAs) in WA have now been adopted as a minimum requirement in WA. A copy is available on the MRWA website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Forms and Publications'.

Trailer Mounted Attenuators are not permitted in WA.

Refer to section 8.3 for TMA operator training requirements.

6.12 LANE WIDTHS AND EDGE CLEARANCES

6.12.1 Lane Widths

Clause 4.13.3 of AS1742.3 specifies minimum lane widths of 3.5 m for worksites with speeds 61 - 80 km/h. Studies have shown that reduced road width results in lower speeds. Implementation of minimum lane widths is encouraged at worksites that require significant speed reductions.

This code allows for a minimum lane width of 3.2 metres for speeds 61 - 80 km/h (Note: the exceptions listed in Clause 4.13.3 of AS1742.3 still apply). Additionally, where minimum lane widths are being proposed a site specific risk assessment shall be undertaken examining whether variables such as vehicle types, traffic volumes and worker offset safety support this measure.

Other visual stimulus that gives the impression of reduced road width is also encouraged (such as additional guide posts, bollards, traffic cones or diagonal gore marking).

6.12.2 Edge Clearances

Clause 4.13.4 of AS 1742.3 specifies the minimum clearance between the edge of traffic lane and delineating devices or road safety barrier systems. However, it has been found to be impractical to follow the clearances given. This is particularly evident when used in conjunction with the required lane widths in Clause 4.13.3 of AS 1742.3. When a site specific risk assessment has been conducted that supports the reduced clearance the below will be permitted:

- (a) Edge of traffic lane to line of traffic cones, bollards or longitudinal channelizing barricades—
 - (i) traffic speed up to 60 km/h—0.3 m; and
 - (ii) traffic speed above 60 km/h—0.5 m.

- (b) Edge of traffic lane to roadworks delineators or temporary hazard markers—
 - (i) traffic speed up to 80 km/h – 0.5 m; and
 - (ii) traffic speed above 80 km/h – 1.0m.
- (c) Edge of traffic lane to road safety barrier system—
 - (i) traffic speed 40 km/h or less—0.2 m;
 - (ii) traffic speed 41 to 60 km/h—0.3 m;
 - (iii) traffic speed 61 to 80 km/h—0.5 m; and
 - (iv) traffic speed greater than 80 km/h—1.0 m.

When using a road safety barrier system the above reduced clearance does not apply to the leading edge of the barrier system, Clause 4.13.4 of AS 1742.3 will apply. This will reduce the risk of errant vehicles colliding with the end treatment of the barrier.

6.13 TEMPORARY PORTABLE TRAFFIC SIGNALS

All portable temporary traffic signals shall be used in accordance with Clause 4.11 of AS 1742.3. AS 1742.3 states portable traffic signals are intended for traffic control applications of a relatively short duration and primarily for shuttle control.

A risk assessment shall be conducted prior to considering the use of portable traffic signals. This should examine what would happen in the event of failure assessing available sight distances, traffic volumes, traffic speeds and duration of operation. Mitigating factors may include regular inspections, having good sight lines for opposing traffic and/or having back up traffic controllers.

6.14 TRAFFIC CONTROLLERS

6.14.1 General

Traffic Controllers are primarily used to manage, control and stop traffic where other signs and devices are considered insufficient. Accredited Traffic Controllers (see section 8) are required to operate in compliance with the guidelines contained in the [Traffic Controllers' Handbook](#) available on the MRWA website at: www.mainroads.wa.gov.au go to 'Our Roads' > 'Temporary Traffic Management' > 'Forms and Publications'

Generally, a Traffic Controller should control traffic in only one lane, therefore when manual traffic control is required on multi-lane carriageways, merge/s should be introduced upstream of the Traffic Controller so that the Traffic Controller is only managing one lane.

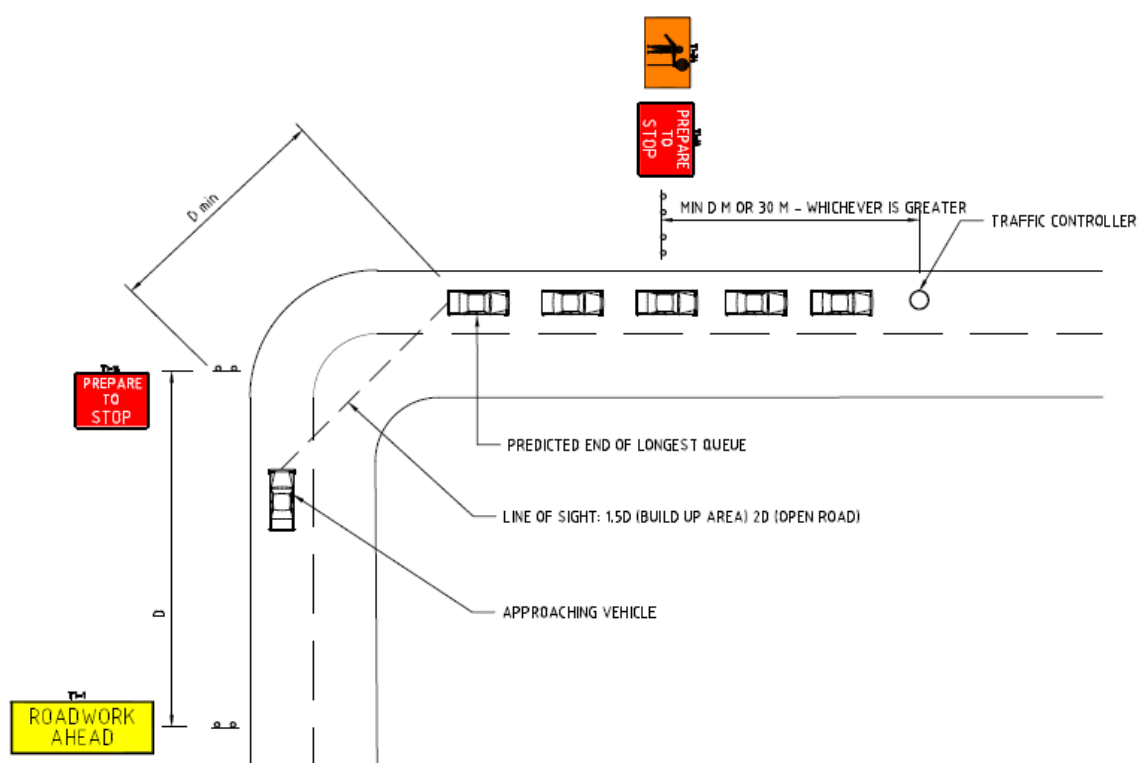
6.14.2 Use of Traffic Controller Advanced Warning Signs

When giving advanced warning of Traffic Controllers the PREPARE TO STOP sign shall be used in conjunction with the Traffic Controller (Symbolic) sign and where possible the signs should be positioned side by side with the PREPARE TO STOP sign closest to the travel way.

The position of the PREPARE TO STOP sign and Traffic Controller (symbolic) sign shall be according to the local prevailing conditions, it is recommended they be placed a minimum of D metres, or 30 metres, whichever is greater, in advance of the Traffic Controller.

In situations where it is not possible for the signs to be placed side by side the distance of the PREPARE TO STOP sign for speeds less than 55 km/h may be reduced to 15 metres (D) in advance of the Traffic Controller provided the Traffic Controller (Symbolic) sign is positioned 15 metres (D) in advance of the PREPARE TO STOP sign. For approach speeds greater than 55 km/h the distance between signs shall remain at D metres.

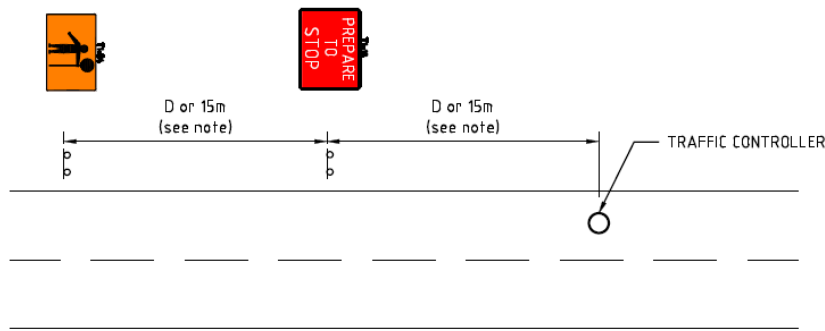
Note: Clause 4.7.8 of AS 1742.3 shall be followed to avoid end of queue collisions.



Notes:

1. Does not include all required signs and devices
2. Signs may need to be placed on both sides of the carriageway.

Figure 2: Placement of Traffic Controller Warning Signs (when using side by side)



Notes:

1. For speeds less than 55 km/h spacing is 15 m, for speeds greater than 55 km/h spacing is 'D' m.
2. Does not include all required signs and devices.
3. Signs may need to be placed on both sides of the carriageway.

Figure 3: Placement of Traffic Controller Warning Signs (in situations where signs cannot be used side by side)

It is recognised that there is often limited space on some local roads due to things such as parked cars, footpaths, works occurring close to intersections, etc. The Worker (symbolic) and Traffic Controller (symbolic) signs may be used in the same MMS panel where all of the following requirements are met:

- The road is a low speed local road (permanent speed 60 km/h or below);
- There are site constraints which do not allow the signs to be separated;
- The signs are used with the MMS-ADV-26 PREPARE TO STOP sign;
- The Traffic Controller (symbolic) sign (MMS-ADV-47) shall be positioned closest to the traffic;
- The signs shall be duplicated on both sides of the road or carriageway;
- The signs shall only be displayed when the need exists and removed or replaced when workers are not visible and/or there is no Traffic Controller requiring road users to stop.



6.14.3 Traffic Controllers Working at Night

Compared to works during day time, night-works are significantly more hazardous.

Where Traffic Controllers are required to work at night care shall be taken to ensure all signs, devices and clothing are appropriately reflective in accordance with standards.

At all times Traffic Controllers must be well illuminated by portable floodlights, street lighting, car headlights etc. The light source must be angled or shielded to minimise glare to approaching traffic. Additionally, Traffic Controllers shall use a luminous wand when controlling traffic at night.

6.15 ILLUMINATED FLASHING ARROW SIGN

Clause 4.8.3 of AS1742.3 requires a vehicle or trailer mounted illuminated flashing arrow sign to be used when closing lanes where the traffic volume is 1500 vpd or greater and the approach speed of traffic is 70 km/h or greater. However, to provide adequate advanced warning to road users it is common practice to use illuminated flashing arrow signs when closing lanes on multilane roads with a permanent posted speed limit of 60 km/h or more.

Therefore, in addition to the requirements in AS1742.3 a vehicle- or trailer-mounted illuminated flashing arrow sign shall be used when closing lanes on multilane roads with a traffic volume of 1500 vpd or greater and a permanent posted speed of 60 km/h or greater, to assist traffic in negotiating the taper.

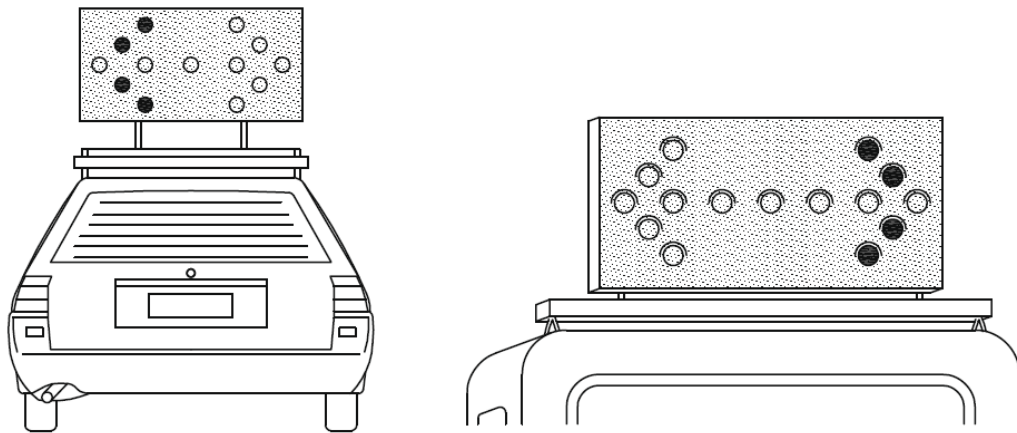


Figure 4: Illuminated Flashing Arrow Sign

7. BEST PRACTICE

Main Roads encourages the use of the following Traffic Management devices that increase the levels of safety, compliance and/or road user satisfaction at worksites.

7.1 COVERING SPEED LIMIT ROAD MARKING

In addition to the requirement to remove or cover regulatory devices that the TMP forces road users to contravene; it is recommended that speed limit road marking that portrays a speed limit different to that shown in the TMP be covered.

Covering the speed limit road marking can be done with sticker products available from most sign makers. The colour of the sticker selected shall be similar to colour of the road surface. Long-term work sites should use the grinding and reinstatement method OR undertake routine inspection and maintenance on the stickers.

7.2 ELECTRONIC SPEED LIMIT SIGNS

The Road Traffic Code 2000 allows for the use of electronic speed limit signs.

The use of these on road works sites is encouraged, particularly in situations where: there are frequent changes in speed limits required as a part of the works OR it is hazardous to manually change speed limits OR the works are of a long term nature.

When using electronic speed limit signs; accurate time stamped records on exactly when the speed limits have been changed must be kept. The usual sign inspection regime must be adhered to and back up devices made available to enable prompt replacement of faulty electronic signs.



7.3 TEMPORARY SPEED HUMPS

Temporary Speed Humps may be used to increase compliance with 40km/h speed zones at work sites. They are only to be installed when there are actual works taking place that require the 40km/h speed limit (as per AS1742.3 and this Code) and all other road environment options (to encourage speed limit compliance) have been exhausted.

The [Guidelines for Temporary Speed Humps at Work Sites](https://www.mainroads.wa.gov.au/Our-Roads/Temporary-Traffic-Management/Forms-and-Publications) are available on the MRWA website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Forms and Publications'.

7.4 VIDEO EVIDENCE

Clause 2.6.1 of AS1742.3 and Section 5.5 of this Code give requirements for record keeping when conducting works on or near roads. Due to the availability of smart phones and video cameras, when conducting workplace inspections and/or altering the traffic guidance scheme, video evidence should be considered (to support written documented records).

7.5 SECURING SIGNS

AS 1742.3 indicates that signs and devices shall be positioned and erected so that they are properly displayed and securely mounted. The mountings should also be stable in windy conditions and from the effects of moving traffic.

Where windy conditions are expected either due to weather or heavy vehicles; signs should have additional sign support and be located with adequate lateral clearance from the travelled way. It is recommended in these conditions that signs either be mounted on permanent posts or, where this is not practicable, a cleat or similar should be affixed to the outside of the edge of the sign approximately a quarter up from its base. Sufficiently weighted sand bags should then be attached to this with rope / string with some tension applied to the cleat.

7.6 INNOVATIVE TRAFFIC CONTROL DEVICES

When new innovative traffic control products emerge in the market there is a need for Main Roads WA to review and approve these devices before they are used to ensure they will be safe and effective. A list of recently approved devices and associated guidelines for use can be found on the Main Roads website, go to www.mainroads.wa.gov.au > 'Our Roads > 'Temporary Traffic Management' > 'Recently Approved Temporary Traffic Management Products'

8. ACCREDITATION REQUIREMENTS

8.1 GENERAL

Persons undertaking any of the tasks listed in Table 6 shall hold relevant MRWA accreditation, as indicated:

Task	Required MRWA Accreditation
Preparation of procedures for routine daily traffic management activities in accordance with and up to the planning level specified in Clause 2.2.1 (a) of AS1742.3 – 2009. On-site management of the installation and maintenance of traffic signs and control devices at worksites (and events) on or near roads including ensuring the correct TGSs are implemented for the required stage of the works.	<i>Basic Worksite Traffic Management</i>
The operation of a truck mounted attenuator (TMA) when carrying out traffic management activities.	<i>Operate Truck Mounted Attenuator</i>
Review TMPs prepared by a person holding an AWTM accreditation. Monitoring the effectiveness of, and on-site adjustments to, traffic guidance schemes in accordance with the scope and objectives of the Traffic Management Plan. This includes adjusting, adding and/or removing signs and devices where the intent/objectives of the TMP and operation of the road network are not adversely impacted. Changes to the TMP/TGS shall not involve adding lane or road closures, speed limit changes, or adding any additional regulatory signs that have not been approved (note: WTMs may add repeater signs).	<i>Worksite Traffic Management</i>
Prepare, review, monitor and adjust Traffic Management Plans and Traffic Guidance Scheme.	<i>Advanced Worksite Traffic Management</i>
On site manual traffic control using a Stop-Slow bat.	<i>Traffic Controller</i>
Review and endorsement of Traffic Management Plans involving ‘complex traffic arrangements’. Suitability and compliance audits of Traffic Management Plans involving ‘complex traffic arrangements’, as may be specified for works undertaken for or on behalf of MRWA. Undertaking ‘risk management’, and preparation or endorsement of, any Traffic Management Plan proposing to implement a lesser treatment than required by this Code for all works undertaken for or on behalf of MRWA.	<i>Roadworks Traffic Manager</i>

Table 6 – Tasks Requiring MRWA Accreditation

Any party intending to conduct works that may impact on traffic within any road reserve shall, as a condition of approval by MRWA, Local Government or any other authority responsible for the road, ensure that the persons performing the tasks contained in Table 6 hold a relevant and current certificate of accreditation.

A MRWA certificate is issued for each category of accreditation to individuals who successfully meet the pre-requisites applicable for each level of accreditation. Accreditation certificates are only permitted to be issued by MRWA approved training providers. Contact details for MRWA approved training providers are listed on the MRWA website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Training and Accreditation'.

8.2 BASIC WORKSITE TRAFFIC MANAGEMENT ACCREDITATION

A MRWA accreditation certificate in Basic Worksite Traffic Management will be issued to those meeting the following pre-requisites:

- an Australian Qualifications Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIIWHS302D – Implement traffic management plan, or equivalent (or the replacement unit of competency if and when applicable);
- an Australian Qualification Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIICOM201D – Communicate in the workplace, or equivalent (or the replacement unit of competency if and when applicable);
- an Australian Qualification Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIIWHS201D – Work safely and follow WHS policies and procedures, or equivalent (or the replacement unit of competency if and when applicable);
- evidence of been issued with a valid WorkSafe WA Construction Safety Awareness Training card.

Where the Statement of Attainment is obtained outside of Western Australia, applicants may be requested to undertake further training and assessment in the performance criteria specific to the laws, regulations and Codes of Practice that apply in Western Australia.

Provisional MRWA accreditation as an 'Endorsed Trainee in Basic Worksite Traffic Management' can be issued for a maximum period of three (3) months following successful completion of the written assessments to enable persons to gain hands-on experience prior to completing the practical assessment component of the training and obtaining full accreditation. Such provisional accreditation is valid only when the endorsed trainee is under the direct supervision of a person holding current accreditation in Basic Worksite Traffic Management.

Where traffic devices are used, all work sites shall have at least one person with Basic Worksite Traffic Management accreditation on-site at all times when road workers are present.

Road workers with at least 12 months experience working on roads are permitted to implement signs under direct supervision of someone that holds a BWMTM accreditation. This is only permitted on local roads with a permanent speed limit of 50 km/h or less and less than 15,000 vehicles per day.

8.3 OPERATE TRUCK MOUNTED ATTENUATOR

The national unit of competency RIIRTM301D – Operate a truck or trailer mounted attenuator is now a requirement for all operators of TMAs in WA. This unit supersedes the previous national accredited course 52680WA - Course in Truck/Trailer-Mounted Attenuator (TMA)⁸.

Interim training will now cease to be delivered and all training will be delivered by MRWA approved RTOs.

Operators with interim certificates will have until March 2019 to gain competency in the national unit to maintain their accreditation (this may be done through RPL). MRWA approved RTOs will be listed on the MRWA website go to www.mainroads.wa.gov.au 'Our Roads' > 'Temporary Traffic Management' > 'Training and Accreditation' > 'Listing of Approved Training and Accreditation Providers'.

The [National Guidelines for the Use of TMA's](http://www.mainroads.wa.gov.au) is listed on the MRWA website at: www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Forms and Publications'.

A MRWA accreditation certificate in Operate Truck Mounted Attenuator will be issued to those meeting the following pre-requisites:

- an Australian Qualification Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIICOM201D – Communicate in the workplace, or equivalent (or the replacement unit of competency if and when applicable);
- an Australian Qualification Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIIRTM301D – Operate a truck or trailer mounted attenuator, or equivalent (or the replacement unit of competency if and when applicable);
- hold a current and valid heavy vehicle licence of a suitable class to operate the TMA (Medium Rigid licence as a minimum)
- documentary evidence of at least 80 hours experience operating heavy vehicles in the last 6 months;
- hold a valid Work Safe WA Construction Safety Awareness Training card;
- hold a current MRWA Basic Worksite Traffic Management Accreditation (see 8.2);
- documentary evidence of at least 50 hours practical experience in traffic management in the last 6 months.

⁸ Operators who hold accreditation with the superseded course – will need to be assessed against the unit of competency when they seek re-accreditation 3 years from the date of accreditation.

8.4 WORKSITE TRAFFIC MANAGEMENT ACCREDITATION

A MRWA accreditation certificate in Worksite Traffic Management will be issued to those meeting the following pre-requisites:

- an Australian Qualifications Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIIRIS402D – Carry out the risk management process, or equivalent (or the replacement unit of competency if and when applicable), and;
- a current certificate of accreditation in Basic Worksite Traffic Management*, and;
- evidence of been issued with a valid WorkSafe WA Construction Safety Awareness Training card, and;
- attendance of the 4 day course in Advanced Worksite Traffic Management – including national units RIICWD503D - Prepare workzone traffic management plan and RIIRIS402D - Carry out the risk management process.

This includes successful completion of the in class written assessments which involves participants amending 3 TGSs that require updating. Participants to address site specific issues in the risk assessment and changes to be noted in the daily diary, and;

- documentary evidence of at least 1 year's practical experience in traffic management;
or
- documentary evidence of at least 2 years practical experience in road construction or maintenance.

Expiry of pre-requisite Basic Worksite Traffic Management accreditation can be deferred to enable re-accreditation to coincide with the expiry of Worksite Traffic Management accreditation.

*Exemption from holding a current BWTM accreditation may be offered for employees working in Main Roads, Local Governments or other approving bodies with at least 3 years' experience in traffic management, road safety, road construction/maintenance or road design that will be endorsing TMP's. Additionally they must have previously held BWTM accreditation.

8.5 ADVANCED WORKSITE TRAFFIC MANAGEMENT ACCREDITATION

A MRWA accreditation certificate in Advanced Worksite Traffic Management will be issued to those meeting the following pre-requisites:

- Documentary evidence of at least 1 years' experience in traffic management, road asset management, road safety, road design, road construction or road maintenance;
- an Australian Qualifications Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIICWD503D – Prepare work zone traffic management plan, or equivalent (or the replacement unit of competency if and when applicable);
- an Australian Qualifications Framework compliant Statement of Attainment in the Risk Management Unit of Competency RIIRIS402D – Carry out the risk management process, or equivalent (or the replacement unit of competency if and when applicable);
- an Australian Qualification Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIIWHS201D – Work safely and follow WHS policies and procedures, or equivalent (or the replacement unit of competency if and when applicable);
- an Australian Qualification Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIIGOV401D – Apply, monitor and report on compliance systems, or equivalent (or the replacement unit of competency if and when applicable);
- evidence of holding or having held a Main Roads Western Australia accreditation in Basic Worksite Traffic Management or an Australian Qualification Frameworks compliant Statement of Attainment in 'Implement Traffic Management Plan'.
- evidence of been issued with a valid WorkSafe WA Construction Safety Awareness Training card.

8.6 TRAFFIC CONTROLLER ACCREDITATION

A MRWA Traffic Controller accreditation certificate will be issued to those meeting the following pre-requisites;

- an Australian Qualifications Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIIWHS205D – Control traffic with a stop-slow bat, or equivalent (or the replacement unit of competency if and when applicable);
- an Australian Qualification Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIICOM201D – Communicate in the workplace, or equivalent (or the replacement unit of competency if and when applicable);
- an Australian Qualification Framework compliant Statement of Attainment in the Resources and Infrastructure Industry Training Package Unit of Competency RIIWHS201D – Work safely and follow WHS policies and procedures, or equivalent (or the replacement unit of competency if and when applicable);
- current or previous evidence of holding a valid driver's licence;
- evidence of been issued with a valid WorkSafe WA Construction Safety Awareness Training card.

Basic Worksite Traffic Management accreditation is also required where Traffic Controllers are responsible for installing and maintaining associated signing and devices, e.g. temporary speed limit signs, 'Prepare to Stop' signs, etc.

Where the above Statement of Attainment is obtained outside of Western Australia, applicants may be requested to undertake further training and assessment in the performance criteria specific to the laws, regulations and Codes of Practice that apply in Western Australia.

Provisional MRWA accreditation as an 'Endorsed Trainee Traffic Controller' can be issued for a maximum period of three (3) months following successful completion of the written assessments to enable persons to gain hands-on experience prior to completing the practical assessment component of the training and obtaining full accreditation. Such provisional accreditation is valid only when the endorsed trainee is under the direct supervision of a person holding current Traffic Controller accreditation.

Accredited Traffic Controllers at roadwork sites in Western Australia shall operate in compliance with the [Traffic Controllers Handbook](#) which is available on MRWA's website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Forms and Publications'.

8.7 ROADWORKS TRAFFIC MANAGER ACCREDITATION

Applications for Roadworks Traffic Manager accreditation are subject to assessment by a panel comprising selected Government, professional and industry representatives. Further detail and application forms are available on the MRWA website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Roadworks Traffic Managers'.

Applicants are assessed on the basis of the following minimum criteria:

- hold a current Main Roads' Advanced Worksite Traffic Management Accreditation;
- hold current accreditation as a senior MRWA/IPWEA Road Safety Auditor;
- have 5-years practical experience in the review, approval or design of Traffic Management Plans;
- evidence of attending the Main Roads (or equivalent) Temporary Workzone Barrier design course, within the previous three years;
- carried at least one-compliance or one suitability, Traffic Management Plan audit under the guidance of a Roadworks Traffic Manager;
- signing of Roadworks Traffic Managers Code of Conduct;
- have in place Professional Indemnity / Public Liability insurance certificate of currency*

*It is the responsibility of RTMs, as well as anyone engaging them, to ensure they have the appropriate level of insurance.

8.8 PROOF OF CERTIFICATION

Proof of certification is issued by training providers in the form of a 'Photo ID' card. Persons performing on-site traffic management tasks shall always carry this proof of certification with them.

A database of persons holding current accreditation is maintained by training providers on Main Roads website at www.mainroads.wa.gov.au; go to 'Our Roads' > 'Temporary Traffic Management' > 'Training and Accreditation'.

8.9 ISSUE OF CERTIFICATION AND RE-ACCREDITATION

The issue of accreditation can only be undertaken by training providers that have the relevant training Unit of Competency in their scope of registration by the WA Training Accreditation Council or Australian Skills Quality Authority, and are separately approved by MRWA to issue such accreditation. For those seeking accreditation based on Statements of Attainment issued outside of Western Australia, applicants must be able to demonstrate knowledge of relevant laws, regulations and codes of practice specific to Western Australia.

All MRWA accreditations are valid for three years, following which re-accreditation is required. Re-accreditation is subject to persons being 'refreshed' on any changes to relevant laws, regulations, standards and codes of practice that may have occurred since the issue of the previous accreditation. Applicants must have achieved statements of attainment in the current units of competency prior to being re-accredited.

9. FURTHER INFORMATION

Further information relating to this Code may be obtained from:

Gareth Peers
Main Roads Western Australia
PO Box 6202
EAST PERTH WA 6892

Phone: 138 138

Email: roadsafety@mainroads.wa.gov.au

10. REFERENCES

- AS 1348:2002 – Road and traffic engineering – Glossary of terms
- AS 1742 – Manual of uniform traffic control devices
 - Part 1 – General introduction and index of signs 2003
 - Part 2 – Traffic control for general use 2009
 - Part 3 – Traffic control for works on roads 2009
 - Part 4 – Speed controls 2008
- AS 1743:2001 – Road signs – Specifications
- AS/NZS 1906 – Retro reflective materials and devices for road traffic control purposes
 - Part 1 – Retro reflective materials 2007
 - Part 4 – High visibility materials for safety garments 1997
- AS/NZS 3845:1999 – Road safety barrier systems
- AS/NZS ISO 31000:2009 – Risk Management – Principles and Guidelines
- AS/NZS 4602:1999 – High visibility safety garments
- Austroads Guide to Road Design
- Austroads Guide to Traffic Management
- Austroads Guide to Traffic Management Practice Part 14 – Bicycles
- Disability Services Act 1993
- Guidelines for the Use of Truck Mounted Attenuators in WA
- Local Government Act 1995
- Main Roads Act 1930
- Occupational Safety & Health Act 1984
- Occupational Safety & Health Regulations 1996
- Road Traffic Act 1974
- Road Traffic Code 2000
- Traffic Controllers' Handbook
- Traffic Management for Events Code of Practice
- Utility Providers Code of Practice for Western Australia

APPENDIX 1 – Definitions

NOTE: Some of the definitions below are from AS 1742.3 – 2009, AS 1348 – 2002 and AS/NZS ISO 31000:2009

Access roads:	As per Metropolitan Functional Road Hierarchy definitions below ⁽¹⁾
AS:	Australian Standard
AS/NZS:	Australian / New Zealand Standard
Average Daily Traffic (ADT):	The total traffic volume on all traffic lanes on the affected carriageway during a stated period, divided by the number of days in that period (normally over a seven day week, i.e. including weekend traffic)
Authorised Body:	Being the same definition as that in Regulation 3 of the Road Traffic Code 2000 – means a government department, government instrumentality, statutory authority, local government or a body authorised by the Commissioner of Main Roads for the purposes of Regulation 297(2) of the Road Traffic Code 2000
Built up area:	<p>Being the same definition as that in Regulation 3 of the Road Traffic Code 2000 – means the territory contiguous to and including any road –</p> <p>(a) on which there is provision for street lighting at intervals of not over 100 metres for a distance of at least 500 metres or, if the road is shorter than 500 metres, for the whole road; or</p> <p>(b) which is built up with structures devoted to business, industry or dwelling houses at intervals of less than 100 metres for a distance of one half kilometre or more</p>
Carriageway:	Section of the road devoted particularly to the use of vehicles, that is between the guideposts, kerbs or barriers where these are provided, inclusive of shoulders and auxiliary lanes
Children's Crossings:	Means a facility controlled by a crossing attendant warden who is employed by the WA Police or engaged by the school's authorised parents association or a non-government school's administrative body.
Clear zone:	The horizontal width of space available for the safe use of an errant vehicle which consists of the verge area and is measured from the nearside edge of the left-hand traffic lane. In the case of a divided road, it is also measured from the offside edge of the right-hand traffic lane to the edge of the pavement for opposing traffic. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope and a run-out area, but all parts can be traversed.

Contra-flow:	Traffic flow in a direction opposite to the normal flow
Crash Attenuator:	Devices that prevent an errant vehicle from impacting hazardous objects by gradually decelerating the vehicle to a safe stop or by directing the vehicle away from the hazard. They are often used as the end treatment on the leading end of a road safety barrier system.
Crossing Attendant:	Means a person appointed as or trained as a crossing attendant warden under regulation 23 of the Western Australian Road Traffic (Administration) Act 2008 – Part 3, to perform duties relating to the controlling of vehicles and pedestrians at children’s crossings and pedestrian crossings.
Delineation:	Treatments that enhance the selection of the appropriate path and speed or position, to allow a manoeuvre to be carried out safely and efficiently, in accordance with Clause 3.9 and Clause 3.10 of AS 1742.3 – 2009
Delineator:	As detailed in Clause 3.9.2 of AS 1742.3 – 2009
Direct Supervision:	Within visual and verbal communication of a qualified person
District distributor:	As per Metropolitan Functional Road Hierarchy definitions below ⁽¹⁾
Divided Road	A highway or road with separated carriageways for traffic travelling in opposite directions.
Duty of care:	The legal duty on the part of all employers, employees and others including contractors and consultants who have an influence on the potential hazards in a work site, which requires them to take reasonable care to protect the health and safety of others at the work site including road users who may be at a foreseeable risk of harm
Emergency:	A situation where a life threatening risk exists and the consequences of not taking action are judged to be worse than if action is taken.
Excavation:	For the purpose of this Code an ‘excavation’ is deemed to have been formed when material is removed by digging as a result of or in the course of ‘work’.
Instrument of Authorisation:	A legal instrument through which the CMR, under Regulation 297 of the Road Traffic Code 2000, formally delegates to an Authorised Body the authority to erect, establish or display and alter or take down any road sign or traffic control signal for the purpose and duration of any roadworks subject to conditions set out in the instrument. In order to take effect, the instrument must be executed by the Commissioner and the body the subject of the instrument.
IPWEA:	Acronym for Institute of Public Works Engineering Australia

Level of Service:	(a) An index of the operational performance of traffic on a given traffic lane, carriageway or road when accommodating various traffic volumes under different combinations of operating conditions
Long-term:	More than one shift
Metropolitan Area / Region	Main Roads regional boundaries can be found using the Road Information Mapping (RIM) system, go to www.mainroads.wa.gov.au > 'Our Roads' > 'Facts and Figures' > 'Road Information Mapping'
Offset Speed Zone:	Temporary Speed zoning which results in speed limits which are different for each direction of travel at a particular location.
Operating speed:	85%th percentile speed, exclusive of stops, at which individual drivers travel on a given section of road under the prevailing traffic conditions
Pavement:	That portion of a carriageway placed above the sub-grade for the support of, and to form a running surface for, vehicular traffic
Primary distributor:	As per Metropolitan Functional Road Hierarchy definitions below ⁽¹⁾
Protective treatment:	For the purpose of this Code, Road Safety Barriers, Work Zone Barriers or other delineation installed in series at a pre-determined spacing, to protect or demarcate a work site or excavation from traffic
Rail Infrastructure Manager	An organisation responsible for managing the safe operation of a railway. This is often separate to the rail owner.
Residential Road / Street	Normally a single carriageway, two-way road in a residential district of an urban area carrying little through traffic and few large vehicles even during peak hours. Such roads have a speed limit not exceeding 60 km/h.
Residual risk:	Risk remaining after risk treatment (process to modify risk). Residual risk can contain unidentified risk. Residual risk can also be known as 'retained risk'.
Risk management:	Coordinated activity to direct and control an organisation with regards to risk
Road:	For the purpose of this Code has the same meaning as that defined in Main Roads Act: means any thoroughfare, highway or road that the public is entitled to use and any part thereof, and all bridges (including any bridge over or under which a road passes), viaducts, tunnels, culverts, grids, approaches and other things

appurtenant thereto or used in connection with the road;

Road reserve:	For the purpose of this Code includes the land set aside, gazetted under an enactment or commonly used by the public as a road and all verges, traffic islands, median strips and other provisions associated therein for the conveyance or travel persons but does not include private tenements or freehold land.
School Zone:	Means a carriageway or length of carriageway <ul style="list-style-type: none">(a) defined at its beginning by means of a 'School Zone' sign and at its end by means of an 'End School Zone' sign; or(b) that forms part of a network of 2 or more carriageways defined by means of 'school zone' signs erected near the boundary of each carriageway that provide access to the network and 'End School Zone' signs erected near the boundary of each carriageway that provided exit from the area.
School Zone Period:	Means the days (if any), and the period (if any) during those days, that the speed limit indicates by a 'School Zone' sign has effect.
Shall:	Indicates that a statement is mandatory
Short-term:	One shift or lesser
Should:	Indicates a recommendation.
Speed zone:	A length of road subject to legally enforceable speed limits
Traffic control device:	Any sign, signal, pavement marking or other installation placed or erected by a public authority or official body, having the necessary jurisdiction, for the purpose of regulating, warning or guiding traffic
Traffic Control Diagram (TCD):	See Traffic Guidance Scheme
Traffic Guidance Scheme (TGS):	Documentation depicting the safe work methods and, where applicable, the arrangement of temporary signs and devices to warn, instruct and guide traffic around, through or past a work site or temporary hazard.
Traffic Management Plan (TMP):	A document containing Traffic Guidance Schemes and documentation of project details in regard to traffic management at a work site. The documentation of project details includes, inter alia, responsible personnel, proposed timing of the works, approvals that have been gained, traffic volume/type details, documentation of risk management and special provisions for specific road user types.
Truck Mounted Attenuator (TMA):	A combination of Host Vehicle and Crash Attenuator unit either mounted to the Host Vehicle or towed by the Host Vehicle to

protect road workers.

Very low volume: < 200 vpd

vpd: Acronym for vehicles per day.

Work area: The specific area where the work is being done.

Work/s: Where it appears in the Code it refers to construction and maintenance work in work sites wholly or partly within the road reserve boundaries and shall apply in accordance with the scope as defined in Clause 1.1 of AS 1742.3 – 2009⁽²⁾

Work site: An area which includes the work area(s) and any additional length of road required for advance signing, tapers, side-tracks or other areas needed for associated purposes.

Work zone barrier: A physical barrier separating the work area and the travelled path, designed to resist penetration by an out-of-control vehicle and as far as reasonably practicable, to redirect out of control vehicles back into the travelled path.

NOTES:

⁽¹⁾Metropolitan Functional Road Hierarchy Definitions

Primary Distributors: These provide for major regional and inter-regional traffic movement and carry large volumes of generally fast moving traffic. Some are strategic freight routes and all are National or State roads. They are managed by MRWA.

District Distributor A: These carry traffic between industrial, commercial and residential areas and generally connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining property. They are managed by Local Government.

District Distributor B: Perform a similar function to type A District Distributors but with reduced capacity due to flow restrictions caused by access to and roadside parking alongside adjoining property. These are often older roads with a traffic demand in excess of that originally intended. District Distributor A and B roads run between land-use cells and generally not through them, forming a grid which would ideally space them around 1.5km apart. They are managed by Local Government.

Local Distributors: Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. They are managed by Local Government.

Access Roads: Provides access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by Local Government.

The decision about which functional type should be designated to each road can only be made by the Authority responsible for managing that road.

⁽²⁾Clause 1.1 of AS1742.3 – 2009

1.1 Scope

This Standard specifies the traffic control devices to be used to warn, instruct and guide road users in the safe negotiation of work sites on roads including unsealed roads together with footpaths, shared paths, and bicycle paths adjacent to the roadway. It is applicable to traffic guidance schemes for road and bridge construction and maintenance sites, works associated with other public utilities and services, or any other works which cause interference or obstruction to the normal use of a road by any road user. It also provides guidance for the planning, design, installation and operation of such traffic guidance schemes together with requirements for maintaining a safe workplace for workers on site.

APPENDIX 2 – Traffic Risk Classification

In order to clearly understand the risks associated with the works and then outline the manner in which identified risks will be managed, the TMP designer needs to undertake an assessment of all significant foreseeable risks associated with the works and determine the treatment measures that, so far as practicable, minimise the risk.

The identification and assessment process is to be undertaken in accordance with AS/NZS ISO 31000 and the likelihood and consequences rated before the application of risk treatments (primary risk) and after (residual risk) the determined controls utilising Table A2-1, Table A2-2, Table A2-3 and Table A2-4 below.

The TMP designer is to, so far as practicable, control or reduce identified risks in accordance with the hierarchy of control. Treatment measures are to be in accordance with the below Table A2-5 Management Approach for Residual Risk Rating.

A Residual Risk Rating of Very High is not permissible.

TABLE A2-1 – QUALITATIVE MEASURES OF CONSEQUENCE OR IMPACT

Consequence	Description
Insignificant	Midblock hourly traffic flow per lane is equal to or less than the allowable lane capacity detailed in AS1742.3. No impact to the performance of the network. Affected intersection leg operates at a Level of Service (LoS) of A or B. No property damage.
Minor	Midblock hourly traffic flow per lane is greater than the allowable road capacity and less than 110% of the allowable road capacity as detailed in AS1742.3. Minor impact to the performance of the network. Intersection performance operates at a Level of Service (LoS) of C. Minor property damage.
Moderate	Midblock hourly traffic flow per lane is equal to and greater than 110% and less than 135% of allowable road capacity as detailed in AS1742.3. Moderate impact to the performance of the network. Intersection performance operates at a Level of Service (LoS) of D. Moderate property damage.
Major	Midblock hourly traffic flow per lane is equal to and greater than 135% and less than 170% of allowable road capacity as detailed in AS1742.3. Major impact to the performance of the network. Intersection performance operates at a Level of Service (LoS) of E. Major property damage.
Catastrophic	Midblock hourly traffic flow per lane is equal to and greater than 170% of allowable road capacity as detailed in AS1742.3. Unacceptable impact to the performance of the network. Intersection performance operates at a Level of Service (LoS) of F. Total property damage.

TABLE A2-2 OSH QUALITATIVE MEASURES OF CONSEQUENCE OR IMPACT

Level	Consequence	Description
1	Insignificant	No treatment required
2	Minor	First aid treatment required.
3	Moderate	Medical treatment required or Lost Time Injury
4	Major	Single fatality or major injuries or severe permanent disablement
5	Catastrophic	Multiple fatalities.

TABLE A2-3 – QUALITATIVE MEASURES OF LIKELIHOOD

Likelihood	Description
Rare	The event or hazard: may occur only in exceptional circumstances, will probably occur with a frequency of less than 0.02 times per year (i.e. less than once in 50 years).
Unlikely	The event or hazard: could occur at some time, will probably occur with a frequency of 0.02 to 0.1 times per year (i.e. once in 10 to 50 years).
Possible	The event or hazard: might occur at some time, will probably occur with a frequency of 0.1 to 1 times per year (i.e. once in 1 to 10 years).
Likely	The event or hazard: will probably occur in most circumstances, will probably occur with a frequency of between 1 and 10 times per year.
Almost certain	The event or hazard: is expected to occur in most circumstances, will probably occur with a frequency in excess of 10 times per year.

IMPORTANT NOTE: The likelihood of an event or hazard occurring shall first be assessed over the duration of the activity (i.e. “period of exposure”). For risk assessment purposes the assessed likelihood shall then be proportioned for a “period of exposure” of one year.

Example: An activity has a duration of 6 weeks (i.e. “period of exposure” = 6 weeks). The event or hazard being considered is assessed as likely to occur once every 20 times the activity occurs (i.e. likelihood or frequency = 1 event/20 times activity occurs = 0.05 times per activity). Assessed annual likelihood or frequency = 0.05 times per activity x 52 weeks/6 weeks = 0.4 times per year. Assessed likelihood = Possible.

TABLE A2-4 – QUALITATIVE RISK ANALYSIS MATRIX – RISK RATING

	Consequence				
Likelihood	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Almost certain (A)	Low 5	High 10	High 15	Very High 20	Very High 25
Likely (B)	Low 4	Medium 8	High 12	Very High 16	Very High 20
Possible (C)	Low 3	Low 6	Medium 9	High 12	High 15
Unlikely (D)	Low 2	Low 4	Low 6	Medium 8	High 10
Rare (E)	Low 1	Low 2	Low 3	Low 4	Medium 7

TABLE A2-5 – MANAGEMENT APPROACH FOR RESIDUAL RISK RATING

Residual Risk Rating	Required Treatment
Very High	Unacceptable risk. HOLD POINT. Work cannot proceed until risk has been reduced.
High	High priority, Roadworks Traffic Manager (RTM) must review the risk assessment and approve the treatment and endorse the TGS prior to its implementation.
Medium	Medium Risk, standard traffic control and work practices subject to review by accredited AWTM personnel prior to implementation.
Low	Managed in accordance with the approved management procedures and traffic control practices.

APPENDIX 3 – Typical Instrument of Authorisation for Local Government

(See page xi)

**WESTERN AUSTRALIA
ROAD TRAFFIC CODE 2000
REGULATION 297(2)
INSTRUMENT OF AUTHORISATION**

Pursuant to Regulation 297(2) of the Road Traffic Code 2000 the Commissioner of Main Roads ('the Commissioner') hereby authorises (Insert name of Local Government) ('Authorised Body') by itself, its employees, consultants, agents and contractors (together 'Representatives') to, from the date indicated below, erect, establish, display, alter or take down such traffic signs and traffic control devices of whatsoever type or class (except for permanent traffic control signals) as may be required for the purpose and duration of any works, survey or inspection, associated with the construction, maintenance or repair on a road (other than a main road or highway), any adjoining land or any portion thereof within its jurisdiction, SUBJECT ALWAYS to the following terms and conditions:

- (a) the Authorised Body shall at all times observe, perform and comply with the provisions of the 'Traffic Management for Works on Roads Code of Practice' (as amended or replaced from time to time in consultation with the Traffic Management for Roadworks Advisory Group) issued by Main Roads Western Australia ('the Code') referring to the version which is current at the time of the relevant works, a copy of which can be obtained from Main Roads Western Australia from www.mainroads.wa.gov.au or by contacting Main Roads by phone;
- (b) the Authorised Body shall develop and implement procedures that will satisfy the Commissioner that traffic management implemented by the Authorised Body, its employees, agents and contractors will in all respects conform to and comply with the requirements of the Code; and
- (c) the Authorised Body shall ensure that its Representatives comply with the terms and conditions identified above at paragraphs (a) and (b) as if they were named in those paragraphs in place of the Authorised Body.

By executing and returning the acknowledgment at the foot of this authorisation, the Authorised Body agrees to observe, perform and comply with the above terms and conditions.

This Instrument of Authorisation replaces any prior Instrument of Authorisation under Regulation 297(2) of the Road Traffic Code 2000 between the Commissioner and the Authorised Body. The Commissioner's delegation dated 17 July 1975 to a number of Local Governments outside the Perth metropolitan area, is not affected by this Instrument of Authorisation except that this Instrument of Authorisation prevails wherever roadworks are concerned. That 1975 delegation was made under Regulation 301 of the Road Traffic Code 1975 and related to non-regulatory signage.

Dated:

THE COMMON SEAL OF THE)
COMMISSIONER OF MAIN ROADS)
WAS AFFIXED BY)
)
)
COMMISSIONER OF MAIN ROADS)
FOR THE TIME BEING IN THE PRESENCE OF:)

Signature of Witness

Name of Witness

ACKNOWLEDGMENT BY AUTHORISED BODY

(Insert name of Local Government) agrees to observe, perform and be bound by the above conditions.

THE COMMON SEAL OF THE)

(Insert name of Local Government))
WAS AFFIXED PURSUANT TO A RESOLUTION)
OF THE COUNCIL IN THE PRESENCE OF)

Chief Executive Officer

Witness

APPENDIX 4 – Sample ‘Notification of Roadworks’ Form

A sample Notification of Roadworks form is provided on page x. **NOTE:** The distribution list in this form is based on Perth metropolitan area and it needs to be appropriately modified for use elsewhere.

An electronic version of the sample Notification of Roadworks form is available on MRWA website www.mainroads.wa.gov.au; go to ‘Our Roads’ > ‘Temporary Traffic Management’ > ‘Forms and Publications’.

Contact details of MRWA Regional Offices for sending the Notification of Roadworks forms are given in Table A3-1 below.

Region	Email	Phone
Kimberley (Derby/Kununurra)	kimreg@mainroads.wa.gov.au	(08) 9158 4333 (Derby) (08) 9167 4777 (Kununurra)
Pilbara (South Hedland)	pilreg@mainroads.wa.gov.au	(08) 9172 887
Mid West - Gascoyne (Geraldton and Carnarvon)	Carnarvon Office gasreg@mainroads.wa.gov.au	(08) 9941 0777
	Geraldton Office mwreg@mainroads.wa.gov.au	(08) 9956 1200
Goldfields – Esperance (Kalgoorlie)	gereg@mainroads.wa.gov.au	(08) 9080 1400
Wheatbelt (Northam and Narrogin)	Northam Office wbnthreg@mainroads.wa.gov.au	(08) 9622 4777
	Narrogin Office wbsthreg@mainroads.wa.gov.au	(08) 9881 0566
Great Southern (Albany)	gsreg@mainroads.wa.gov.au	(08) 9892 0555
South West (Bunbury)	swreg@mainroads.wa.gov.au	(08) 9724 5656

Table A4-1 – MRWA Regional contact details for sending Notification of Roadworks forms

NOTIFICATION OF ROADWORKS

Notifications are to be distributed at least one (1) week in advance of works

Where Police attendance is required at least three (3) weeks' notice shall be given (except in an emergency)

Where the traffic management is to interfere with traffic signal operation, prior approval is required 3wks in advance via enquiries@mainroads.wa.gov.au.

Anticipated start date:		Anticipated finish date:		
Daily work hours:		Is weekend work applicable?:	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Location of works (Road/Street, Suburb):				
Description of works:				
Description of traffic management arrangements:				
Posted Speed Limit:		Worksite speed limit:		After hours speed limit:

What is the anticipated effect on traffic flows?:				Will there be restricted width for oversize escorted vehicles?:	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are lanes closed at signals?:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	Are signal loops or hardware affected?:	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Will signal phases need time changes?:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	Will signals need to revert automatically?:	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Date of signal 'black out':				Times of signal 'black out':		
Will Police attendance be required?:	Yes <input type="checkbox"/>	No <input type="checkbox"/>		Dates for Police attendance :		
Are bridges located in area of works, (inc detours)?:	Yes <input type="checkbox"/>	No <input type="checkbox"/>		Will changes to traffic flows/composition occur on bridges?:	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are the works located within a School Zone?:	Yes <input type="checkbox"/>	No <input type="checkbox"/>		Will children's crossings be altered during works?:	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Will there be a width restriction for oversize vehicles exceeding 2.5m in width?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Will there be a height restriction for oversize vehicles exceeding 4.3m in height?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If yes, what width limit is to be imposed on oversize vehicles travelling through the site?			If yes, what is the minimum height of the structure causing the restriction?		
Can the width restrictions be removed if operators provide prior notice?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If the width restrictions are fixed in place, are operators able to have a wider oversize combination if a 1.2m ground clearance can be achieved?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If yes, how much notice will be required? (i.e. 24/48 hours' notice).			If yes, how much notice will be required? (i.e. 24/48 hours' notice).		
Please provide the name and phone number of the best contact for further details in relation to these works.	Name:				
	Contact number (mobile):				
Please provide the name and phone number of the contact for prior notification of movements.	Name:				
	Contact number (mobile):				
Will the work result in a road closure that will impact on Restricted Access Vehicles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If yes, have discussions been held with Main Roads Heavy Vehicle Services (HVS) in regards to a suitably approved RAV network detour. If no, please contact HVS Route Assessments on 138 486 for assistance. Note: an assessment request for a proposed detour may take up to a week to be processed.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Road Authority:				
Postal Address:				
Telephone:		Email:		Facsimile:
Contact:				
Telephone:		Email:		Mobile:

Construction Contractor:					
Postal Address:					
Telephone:		Email:		Facsimile:	
Contact:					
Telephone:		Email:		Mobile:	
After hours contact:		Telephone:		Mobile:	

Traffic Management Contractor:					
Postal Address:					
Telephone:		Email:		Facsimile:	
Contact:					
Telephone:		Email:		Mobile:	
After hours contact:		Telephone:		Mobile:	

Distribution List	Email/Website
WA Police State Traffic Coordination	State.Traffic.Intelligence.Planning.&.Co-ordination.Unit.SMAIL@police.wa.gov.au
WA Police Student Pedestrian Policy Unit	childrenscrossingunitsmail@police.wa.gov.au
MRWA Customer Information Centre	enquiries@mainroads.wa.gov.au
MRWA Traffic Operations Centre	dltocoperators@mainroads.wa.gov.au
MRWA Heavy Vehicle Operations	hvo@mainroads.wa.gov.au
MRWA Engineer Bridge Loading	DLSEHeavyLoadsGroup@mainroads.wa.gov.au
St John's Ambulance	ambulanceoperations@stjohnambulance.com.au
Fire & Emergency Services	www.dfes.wa.gov.au/contactus/pages/dfesoffices.aspx
Public Transport Authority	www.pta.wa.gov.au/AboutUs/ContactUs
Arc Infrastructure (previously Brookfield Rail)	thirdparty.services@arcinfra.com
MRWA Digital Communications	communications@mainroads.wa.gov.au
Local Government	For contact details see local government website

APPENDIX 5


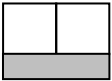



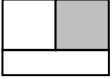

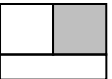



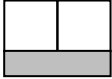

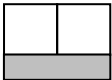


Multi-Messages Sign Inventory








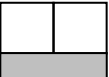






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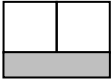
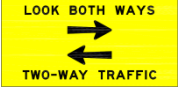




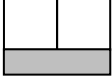

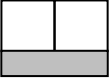

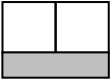

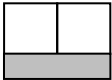

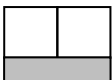

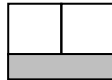


Application Schedule


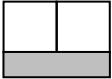

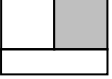

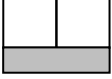





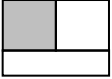

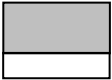



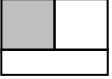


APPENDIX 5 - Multi-Message Sign Inventory and Application Schedule




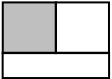

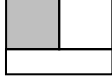



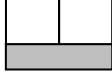



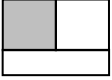



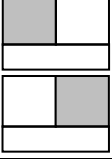

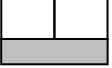
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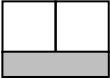

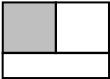





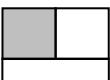







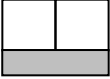

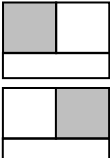
Group	<u>ADVANCE WARNING SERIES SIGNS</u>			SIGN APPLICATION AND DESCRIPTION	
	Sign	MRWA Sign Number	Panel Size (mm)	<ol style="list-style-type: none"> Sign panels shall only be located in the frame location as shown. Left side multi-message sign shown only. Multi-message signs located on both sides of the roadway shall form a mirrored image of the signs being displayed. For sign specification go to www.mainroads.wa.gov.au >Building Roads >Standards and Technical >Road and Traffic Engineering >Traffic Management. For multi-message signs frame refer to Main Roads WA standard drawing 201031-0155. 	
A D V		MMS-ADV-1	1200 x 300		'X' km AHEAD <ul style="list-style-type: none"> Shall not be used in conjunction with a regulatory speed sign.
A D V		MMS-ADV-2	600 x 600		'X' km AHEAD <ul style="list-style-type: none"> Shall not be used in conjunction with a regulatory speed sign. Sign may be classified as symbolic.
A D V		MMS-ADV-3	600 x 600		40 km/h AHEAD SYMBOLIC
A D V		MMS-ADV-3	600 x 600		60 km/h AHEAD SYMBOLIC
A D V		MMS-ADV-3	600 x 600		80 km/h AHEAD SYMBOLIC
A D V		MMS-ADV-4	1200 x 300		AT INTERSECTION
A D V		MMS-ADV-5	1200 x 300		AT SIGNALS
A D V		MMS-ADV-6	1200 x 600		BLASTING AREA SWITCH OFF RADIO TRANSMISSION <ul style="list-style-type: none"> Only to be used where the posted speed is less than or equal to 80kph.


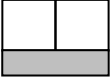





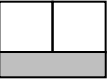

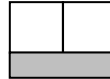

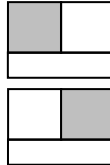

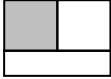




A D V		MMS-ADV-7	600 x 600		BRIDGEWORK AHEAD
A D V		MMS-ADV-8	1200 x 600		BRIDGEWORK AHEAD
A D V		MMS-ADV-9A	600 x 600		DETOUR AHEAD
A D V		MMS-ADV-9B	1200 x 600		DETOUR AHEAD
A D V		MMS-ADV-10	1200 x 300		DO NOT OVERTAKE
A D V		MMS-ADV-11	1200 x 300		DRIVE SLOWLY
A D V		MMS-ADV-12	600 x 600		GRADER AHEAD
A D V		MMS-ADV-13	600 x 600		HEAVY VEHICLES
A D V		MMS-ADV-14	600 x 600		HIGH VEHICLES
A D V		MMS-ADV-15	600 x 600		LINE MARKING


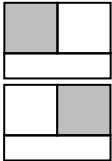



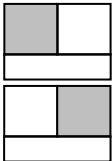

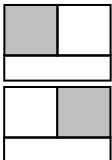








A D V		MMS-ADV-16	1200 x 300		LINE MARKING
A D V		MMS-ADV-17	1200 x 600		LOOK BOTH WAYS TWO WAY TRAFFIC
A D V		MMS-ADV-18	600 x 600		NEXT 'X' km <ul style="list-style-type: none"> Shall not be used in conjunction with a regulatory speed sign. Sign may be classified as symbolic.
A D V		MMS-ADV-19	1200 x 300		NEXT 'X' km (WHITE) <ul style="list-style-type: none"> Shall not be used in conjunction with a regulatory speed sign.
A D V		MMS-ADV-20	1200 x 300		NOW <ul style="list-style-type: none"> Shall only be used in conjunction with the sign MMS-ADV-30.
A D V		MMS-ADV-21	1200 x 300		OBSTRUCTION MARKER <ul style="list-style-type: none"> Shall not be used in conjunction with an Advanced Warning message panel.
A D V		MMS-ADV-22	1200 x 300		ON SIDE ROAD
A D V		MMS-ADV-23	1200 x 300		OVER 'X' m
A D V		MMS-ADV-24	1200 x 300		OVER 'X' GVM
A D V		MMS-ADV-25	1200 x 600		POWER LINE WORKS IN PROGRESS








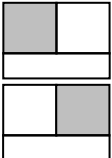

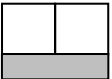



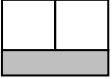



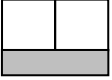


ADV		MMS-ADV-26	1200 x 300		PREPARE TO STOP
ADV		MMS-ADV-27	600 x 600		PREPARE TO STOP
ADV		MMS-ADV-28	1200 x 300		REDUCE SPEED
ADV		MMS-ADV-29	600 x 600		REDUCE SPEED
ADV		MMS-ADV-30	1200 x 600	 <ul style="list-style-type: none">Shall only be placed in advance of the primary regulatory speed sign.	REDUCE SPEED
ADV		MMS-ADV-31	600 x 600		ROAD CLOSED
ADV		MMS-ADV-32	1200 x 600		ROAD CLOSED
ADV		MMS-ADV-33	1200 x 600		ROAD CLOSED AHEAD
ADV		MMS-ADV-34	600 x 600		ROAD PLANT AHEAD
ADV		MMS-ADV-35	1200 x 600		ROAD PLANT AHEAD


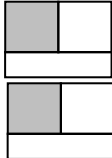

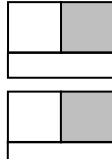

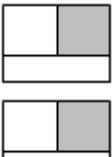





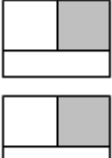

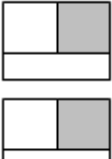
ADV		MMS-ADV-36	1200 x 600		ROAD PLANT ON SIDE ROAD
ADV		MMS-ADV-37	600 x 600	 <ul style="list-style-type: none">• Shall only be used in conjunction with a speed restriction sign• Shall only be used as part of an after-care traffic control scheme	ROAD SIDE HAZARD
ADV		MMS-ADV-38	600 x 600		ROAD WORK AHEAD
ADV		MMS-ADV-39	1200 x 600		ROADWORKS AHEAD
ADV		MMS-ADV-40	1200 x 300		ROADWORKS
ADV		MMS-ADV-41	1200 x 600		ROADWORK ON SIDE ROAD
ADV		MMS-ADV-42	600 x 600		SIDE ROAD CLOSED
ADV		MMS-ADV-43	1200 x 600		SIDE ROAD CLOSED
ADV		MMS-ADV-44	600 x 600		TEMPORARY HAZARD MARKER
ADV		MMS-ADV-45	1200 x 300		TEMPORARY HAZARD MARKER

A D V		MMS-ADV-46	1200 x 300	 <p>TEMPORARY HAZARD MARKER</p> <ul style="list-style-type: none"> Only to be used where the top two (2) panels contain a yellow background. Otherwise the temporary hazard marker 'MMS-ADV-45' shall be used.
A D V		MMS-ADV-47	600 x 600	 <p>TRAFFIC CONTROLLER SYMBOLIC</p>
A D V		MMS-ADV-48	600 x 600	 <p>TRAFFIC SIGNALS</p>
A D V		MMS-ADV-49	600 x 600	 <p>TRAFFIC SIGNALS NOT IN USE</p>
A D V		MMS-ADV-50	600 x 600	 <p>TRAFFIC SIGNALS NOT WORKING</p>
A D V		MMS-ADV-51	600 x 600	 <p>TRUCK SYMBOLIC</p>
A D V		MMS-ADV-52A	600 x 600	 <p>WORKER SYMBOLIC</p>
A D V		MMS-ADV-52B	1200 x 600	 <p>WORKER SYMBOLIC</p>
A D V		MMS-ADV-53	1200 x 300	 <p>UHF CHANNEL XX</p> <ul style="list-style-type: none"> The use of channels 31-38 UHF is prohibited; channels 5 & 35 are for emergency use only.
A D V		MMS-ADV-54	600 x 600	 <p>UHF CHANNEL XX</p> <ul style="list-style-type: none"> The use of channels 31-38 UHF is prohibited; channels 5 & 35 are for emergency use only.






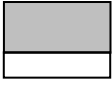





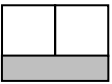

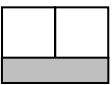


A D V		MMS-ADV-56	1200 x 300		DETOUR AHEAD
A D V		MMS-ADV-57	600 x 600		VERGE WORKS
A D V		MMS-ADV-58	1200 x 600		VERGE WORKS
A D V		MMS-ADV-59	1200 x 300		BRIDGE WORKS
A D V		MMS-ADV-60	1200 x 300		ON RAMP <ul style="list-style-type: none"> To be used to give advanced warning of works on the off-ramp.
A D V		MMS-ADV-79	600 x 600		BOOM BARRIER
A D V		MMS-ADV-80	600 x 600		RUMBLE STRIPS <ul style="list-style-type: none"> Shall only be used in conjunction with the sign MMS-ADV-81.
A D V		MMS-ADV-81	600 x 600		RUMBLE STRIPS <ul style="list-style-type: none"> Shall only be used in conjunction with the sign MMS-ADV-81.
A D V		MMS-ADV-82	1200 x 600		STOP HERE WHEN DIRECTED


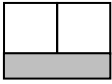



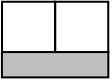

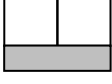
Group	<u>POSITION SERIES SIGNS</u>			SIGN APPLICATION AND DESCRIPTION	
	Sign	MRWA Sign Number	Panel Size (mm)	<ol style="list-style-type: none"> 1. Sign panels shall only be located in the frame location as shown. 2. Left side multi-message sign shown only. 3. Multi-message signs located on both sides of the roadway shall form a mirrored image of the signs being displayed. 4. For sign specification go to www.mainroads.wa.gov.au >Building Roads >Standards and Technical >Road and Traffic Engineering >Traffic Management. 5. For multi-message signs frame refer to Main Roads WA standard drawing 201031-0155. 	
P O S		MMS-POS-1(L)	600 x 600		LANE STATUS
P O S		MMS-POS-1(R)	600 x 600		LANE STATUS
P O S		MMS-POS-2(R)	600 x 600		LANE STATUS
P O S		MMS-POS-2(L)	600 x 600		LANE STATUS
P O S		MMS-POS-3(R)	600 x 600		LANE STATUS
P O S		MMS-POS-3(L)	600 x 600		LANE STATUS
P O S		MMS-POS-4	600 x 600		LANE STATUS
P O S		MMS-POS-5	600 x 600		LANE STATUS

P O S		MMS-POS-6(L)	600 x 600		LANE STATUS
P O S		MMS-POS-6(R)	600 x 600		LANE STATUS
P O S		MMS-POS-7(L)	600 x 600		LANE STATUS
P O S		MMS-POS-7(R)	600 x 600		LANE STATUS
P O S		MMS-POS-8	1200 x 300		LANE STATUS
P O S		MMS-POS-9(L)	600 x 600		MERGE LEFT
P O S		MMS-POS-10(L)	1200 x 300		MERGE LEFT
P O S		MMS-POS-9(R)	600 x 600		MERGE RIGHT
P O S		MMS-POS-10(R)	1200 x 300		MERGE RIGHT
P O S		MMS-POS-11	600 x 600		LANE STATUS


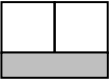

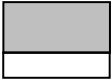

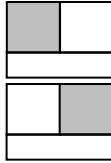

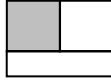
P O S		MMS-POS-12	600 x 600		LANE STATUS
P O S		MMS-POS-13 (L)	600 x 600		LANE STATUS
P O S		MMS-POS-13(R)	600 x 600		LANE STATUS
P O S		MMS-POS-14(L)	600 x 600		LANE STATUS
P O S		MMS-POS-14(R)	600 x 600		LANE STATUS
P O S		MMS-POS-15(L)	600 x 600		LANE STATUS
P O S		MMS-POS-15(R)	600 x 600		LANE STATUS




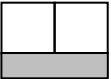
Group	<u>TRAFFIC DIVERSION SERIES SIGNS</u>			SIGN APPLICATION AND DESCRIPTION <ol style="list-style-type: none"> 1. Sign panels shall only be located in the frame location as shown. 2. Left side multi-message sign shown only. 3. Multi-message signs located on both sides of the roadway shall form a mirrored image of the signs being displayed. 4. For sign specification go to www.mainroads.wa.gov.au >Building Roads >Standards and Technical >Road and Traffic Engineering >Traffic Management. 5. For multi-message signs frame refer to Main Roads WA standard drawing 201031-0155.
	Sign	MRWA Sign Number	Panel Size (mm)	

D I V		MMS-DIV-1	600 x 600	 DETOUR
D I V		MMS-DIV-2(L)	1200 x 600	 DETOUR FOR HEAVY VEHICLES LEFT
D I V		MMS-DIV-2(R)	1200 x 600	 DETOUR FOR HEAVY VEHICLES RIGHT
D I V		MMS-DIV-3(L)	1200 x 600	 DETOUR FOR HIGH VEHICLES LEFT
D I V		MMS-DIV-3(R)	1200 x 600	 DETOUR FOR HIGH VEHICLES RIGHT
D I V		MMS-DIV-4(L)	1200 x 300	 DETOUR LEFT ARROW
D I V		MMS-DIV-4(R)	1200 x 300	 DETOUR RIGHT ARROW
D I V		MMS-DIV-5	600 x 600	 DETOUR MARKER

D I V		MMS-DIV-6	1200 x 300		LOCAL TRAFFIC ONLY
D I V		MMS-DIV-7	600 x 600		LOCAL TRAFFIC ONLY
D I V		MMS-DIV-8	1200 x 300		DETOUR LEFT
D I V		MMS-DIV-9	1200 x 300		DETOUR AHEAD




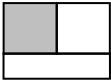

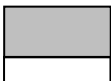





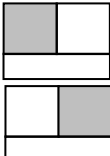
Group	<u>TERMINATION SERIES SIGNS</u>			SIGN APPLICATION AND DESCRIPTION	
	Sign	MRWA Sign Number	Panel Size (mm)	<ol style="list-style-type: none"> 1. Sign panels shall only be located in the frame location as shown. 2. Left side multi-message sign shown only. 3. Multi-message signs located on both sides of the roadway shall form a mirrored image of the signs being displayed. 4. For sign specification go to www.mainroads.wa.gov.au >Building Roads >Standards and Technical >Road and Traffic Engineering >Traffic Management. 5. For multi-message signs frame refer to Main Roads WA standard drawing 201031-0155. 	










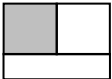


T E R		MMS-TER-1	1200 x 300		DRIVE SAFELY
T E R		MMS-TER-2	1200 x 600		END BLASTING AREA
T E R		MMS-TER-3	600 x 600		END DETOUR
T E R		MMS-TER-4	600 x 600		END ROADWORK






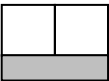

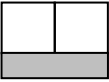



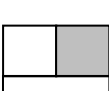

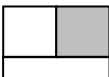



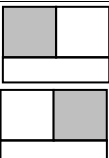
TER		MMS-TER-5	1200 x 600		END ROADWORK
TER		MMS-TER-6	1200 x 300		THANK YOU




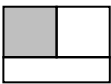

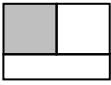

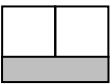

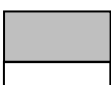



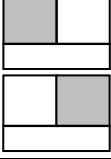

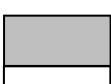
Group	ROAD CONDITION SERIES SIGNS			SIGN APPLICATION AND DESCRIPTION	
	Sign	MRWA Sign Number	Panel Size (mm)		


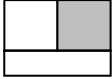

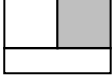

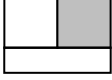

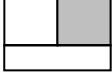

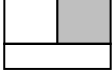

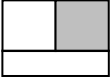

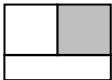

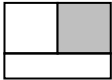
- SIGN APPLICATION AND DESCRIPTION**
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 5. For multi-message signs frame refer to Main Roads WA standard drawing 201031-0155.


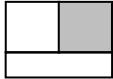


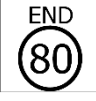


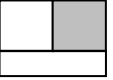

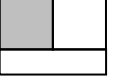

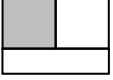

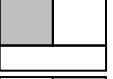

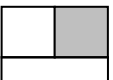



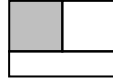
RC		MMS-RC-1	600 x 600		LOOSE STONES
RC		MMS-RC-2	600 x 600		LOOSE SURFACE
RC		MMS-RC-3	1200 x 600		NEW WORK NO LINES MARKED
RC		MMS-RC-4	600 x 600		NO LINES
RC		MMS-RC-5	600 x 600		ROUGH SURFACE
RC		MMS-RC-6	600 x 600		SLIPPERY

R C		MMS-RC-8	600 x 600		SOFT EDGES
R C		MMS-RC-9	600 x 600	 • For emergency use only, see Clause 3.16.5 of AS 1742.3.	TRAFFIC HAZARD
R C		MMS-RC-10	600 x 600		WATER OVER ROAD
R C		MMS-RC-11	1200 x 600		WATER OVER ROAD
R C		MMS-RC-12	600 x 600		WET BITUMEN
R C		MMS-RC-13	600 x 600		ROUGH SURFACE (CYCLIST)


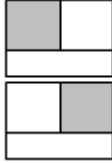

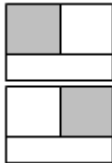

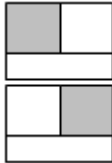

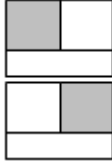





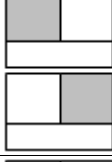

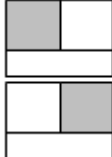
Group	PEDESTRIAN SERIES SIGNS			SIGN APPLICATION AND DESCRIPTION	
	Sign	MRWA Sign Number	Panel Size (mm)		
P E D		MMS-PED-1	600 x 600		FOOTPATH CLOSED
P E D		MMS-PED-2	600 x 600		FOOTPATH TRIP HAZARD
P E D		MMS-PED-3(L)	1200 x 300		PEDESTRIANS LEFT ARROW
P E D		MMS-PED-3(R)	1200 x 300		PEDESTRIANS RIGHT ARROW
P E D		MMS-PED-4	600 x 600		PEDESTRIANS WATCH YOUR STEP
P E D		MMS-PED-5	600 x 600		SLIPPERY (FOOTPATH)
P E D		MMS-PED-6	600 x 600		USE OTHER FOOTPATH
P E D		MMS-PED-7	600 x 600	 • See section 6.1.7 for conditions of use	CYCLISTS DISMOUNT
P E D		MMS-PED-8	600 x 600		PATH CLOSED


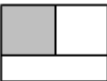

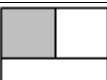

Group	<u>EVENT SERIES SIGNS</u>			SIGN APPLICATION AND DESCRIPTION <ol style="list-style-type: none"> 1. Sign panels shall only be located in the frame location as shown. 2. Left side multi-message sign shown only. 3. Multi-message signs located on both sides of the roadway shall form a mirrored image of the signs being displayed. 4. For sign specification go to www.mainroads.wa.gov.au >Building Roads >Standards and Technical >Road and Traffic Engineering >Traffic Management. 5. For multi-message signs frame refer to Main Roads WA standard drawing 201031-0155. 	
	Sign	MRWA Sign Number	Panel Size (mm)		
EVE		MMS-EVE-1	600 x 600		CYCLIST
EVE		MMS-EVE-2	600 x 600		END EVENT
EVE		MMS-EVE-3	600 x 600		EVENT AHEAD
EVE		MMS-EVE-4	1200 x 300		EVENT IN PROGRESS
EVE		MMS-EVE-5	1200 x 600		EVENT ON SIDE ROAD
EVE		MMS-EVE-6	600 x 600		PEDESTRIANS
EVE		MMS-EVE-7	600 x 600		RUNNER
EVE		MMS-EVE-9	1200 x 600		END EVENT

Group	<u>REGULATORY SERIES SIGNS</u>			SIGN APPLICATION AND DESCRIPTION <ol style="list-style-type: none"> Sign panels shall only be located in the frame location as shown. Left side multi-message sign shown only. Multi-message signs located on both sides of the roadway shall form a mirrored image of the signs being displayed. For sign specification go to www.mainroads.wa.gov.au >Building Roads >Standards and Technical >Road and Traffic Engineering >Traffic Management. For multi-message signs frame refer to Main Roads WA standard drawing 201031-0155.
	Sign	MRWA Sign Number	Panel Size (mm)	
REG		MMS-REG-1(40)	600 x 600	 40 km/h SPEED SIGN
REG		MMS-REG-1(50)	600 x 600	 50 km/h SPEED SIGN <ul style="list-style-type: none"> Shall only be used to terminate a temporary speed zone.
REG		MMS-REG-1(60)	600 x 600	 60 km/h SPEED SIGN
REG		MMS-REG-1(70)	600 x 600	 70 km/h SPEED SIGN <ul style="list-style-type: none"> Shall only be used to terminate a temporary speed zone.
REG		MMS-REG-1(80)	600 x 600	 80 km/h SPEED SIGN
REG		MMS-REG-1(90)	600 x 600	 90 km/h SPEED SIGN <ul style="list-style-type: none"> Shall only be used to terminate a temporary speed zone.
REG		MMS-REG-1(100)	600 x 600	 100 km/h SPEED SIGN <ul style="list-style-type: none"> Shall only be used to terminate a temporary speed zone.
REG		MMS-REG-1(110)	600 x 600	 110 km/h SPEED SIGN <ul style="list-style-type: none"> Shall only be used to terminate a temporary speed zone.


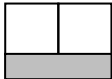
R E G		MMS-REG-2(40)	600 x 600	 <p>END 40 km/h SYMBOLIC</p> <ul style="list-style-type: none"> Shall only be used to terminate a temporary speed zone on a road that had not been speed zoned.
R E G		MMS-REG-2(60)	600 x 600	 <p>END 60 km/h SYMBOLIC</p> <ul style="list-style-type: none"> Shall only be used to terminate a temporary speed zone on a road that had not been speed zoned.
R E G		MMS-REG-2(80)	600 x 600	 <p>END 80 km/h SYMBOLIC</p> <ul style="list-style-type: none"> Shall only be used to terminate a temporary speed zone on a road that had not been speed zoned.
R E G		MMS-REG-3	600 x 600	 <p>NO ENTRY SYMBOLIC</p>
R E G		MMS-REG-4(L)	600 x 600	 <p>NO LEFT TURN SYMBOLIC</p>
R E G		MMS-REG-5	600 x 600	 <p>NO OVERTAKING OR PASSING</p>
R E G		MMS-REG-4(R)	600 x 600	 <p>NO RIGHT TURN SYMBOLIC</p>
R E G		MMS-REG-6(L)	600 x 600	 <p>LEFT ONLY</p>
R E G		MMS-REG-6(R)	600 x 600	 <p>RIGHT ONLY</p>
R E G		MMS-REG-7	600 x 600	 <p>SHARED PATH</p>

Group	<u>INCIDENT, FIRE AND EMERGENCY SERIES SIGNS</u>			SIGN APPLICATION AND DESCRIPTION 6. Sign panels shall only be located in the frame location as shown. 7. Left side multi-message sign shown only. 8. Multi-message signs located on both sides of the roadway shall form a mirrored image of the signs being displayed. 9. For sign specification go to www.mainroads.wa.gov.au >Building Roads >Standards and Technical >Road and Traffic Engineering >Traffic Management. 10. For multi-message signs frame refer to Main Roads WA standard drawing 201031-0155.
	Sign	MRWA Sign Number	Panel Size (mm)	

		MMS-ADV-61	600 x 600		BUSHFIRE SYMBOLIC
		MMS-ADV-62	600 x 600		WATER OVER ROAD SYMBOLIC
		MMS-ADV-63	600 x 600		CRASH SYMBOLIC
		MMS-ADV-64	600 x 600		HAZARDOUS MATERIAL SYMBOLIC
		MMS-ADV-65	600 x 600		BUSH FIRE
		MMS-ADV-66	600 x 600		ROAD FLOODED
		MMS-ADV-67	600 x 600		ROAD CRASH
		MMS-ADV-68	600 x 600		HAZARDOUS MATERIAL

		MMS-ADV-69	1200 x 300		EMERGENCY AHEAD
		MMS-ADV-70	600 x 600		POLICE CONTROL
		MMS-ADV-71	1200 x 300		POLICE CONTROL AHEAD
		MMS-ADV-73	600 x 600		BURNING OFF
		MMS-ADV-74	1200 x 300		BURNING OFF
		MMS-ADV-75	600 x 600		HEADLIGHTS ON
		MMS-ADV-76	1200 x 300		BUSH FIRE
		MMS-ADV-77	600 x 600		SMOKE HAZARD
		MMS-ADV-78	1200 x 300		SMOKE HAZARD

Group	<u>MISCELLANEOUS SIGNS</u>			SIGN APPLICATION AND DESCRIPTION <ol style="list-style-type: none"> 1. Sign panels shall only be located in the frame location as shown. 2. Left side multi-message sign shown only. 3. Multi-message signs located on both sides of the roadway shall form a mirrored image of the signs being displayed. 4. For sign specification go to www.mainroads.wa.gov.au >Building Roads >Standards and Technical >Road and Traffic Engineering >Traffic Management. 5. For multi-message signs frame refer to Main Roads WA standard drawing 201031-0155.
	Sign	MRWA Sign Number	Panel Size (mm)	

		N/A	1200 x 300	 BLANK - BLACK <ul style="list-style-type: none"> • May be used in lieu of 'THANK YOU', 'DRIVE SLOWLY' and/or 'DRIVE SAFELY' to reduce redundant messages.
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Multi-Message Sign Combination Examples (not all combinations shown)





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