DELIVERING FOR QUEENSLAND

Information update

Temporary Traffic Management Update

November 2025

Queensland Government

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Contents

Temporary Traffic Management (TTM) Update

Changes in the November 2025 publication cycle

The following documents will be updated:

- *Queensland Manual of Uniform Traffic Control Devices* (Queensland MUTCD) Part 3
- *Queensland Guide to Temporary Traffic Management* (QGTTM) All Parts.

This *TTM Update* provides advance notice of forthcoming changes and provides the TTM industry time to plan and prepare for implementation of changes when the relevant source documents are published on 27 November 2025.

- Grey text boxes are a commentary about the changes.
- Yellow highlights are used to show the changes to existing Queensland MUTCD or QGTTM clauses or sections.
- Unhighlighted clauses or sections indicate the whole clause or section is new information.
- Text that has a 'strikethrough' has been deleted.
- Blue highlights are used to show material directly copied from AS 1742.3 or AGTTM into Queensland MUTCD Part 3 or the QGTTM to assist with readability of clauses or sections with multiple changes / additions.

This *TTM Update* provides information on changes in the Queensland MUTCD and QGTTM prior to their republication on 27 November 2025 to allow industry time to prepare and plan for the upcoming changes which come into effect on 27 November 2025. This *TTM Update* supports, but does not replace, these source documents, which are issued under the *Transport Operations (Road Use Management) Act 1994* as the Queensland MUTCD and approved notices, and which take precedence over this document and advice published by Austroads or Standards Australia where Queensland exceptions are applied.

While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing. Please email TrafficEngineering.Support@tmr.qld.gov.au regarding any discrepancy identified between this document and those primary documents.

Minor and editorial style changes have not been included in this document, which should be read in conjunction with the amendment registers (once published). Amendment registers for the Queensland MUTCD and QGTTM detail the clauses and sections where changes have been made and provide a brief description of the change.

Queensland MUTCD Part 3

Added reference to Clause 1.9 b) for guidance on variations to ‘shall’ requirements.

See changes highlighted yellow following.

1 Scope and general

1.3 Terms and definitions

1.3.13 Shall

Addition

Add the following note to the definition:

Where certain requirements in the design or application of the device are described with the ‘shall’ stipulation, it is mandatory that, when an installation is made, these requirements be met.

See Clause 1.9 b) for guidance on variations to ‘shall’ requirements.

Added reference to Clause 1.9 a) for guidance on variations to ‘should’ recommendations.

See changes highlighted yellow following.

1.3.14 Should

Addition

Add the following note to the definition:

Where the word ‘should’ is used, it is considered to be recommended use, but not mandatory. ~~Any recommendation that is not applied must be based on sound traffic engineering judgement and documented.~~

See Clause 1.9 a) for guidance on variations to ‘should’ recommendations.

Added reference to Clause 1.3.14 and removed additional text.

See changes highlighted yellow following.

1.3.25 Recommended / Recommendation

New

A recommendation is the same as a 'should' ~~requirement~~, see Clause 1.3.14.

~~Where the word 'recommended' is used, it is considered to be recommended use, but not mandatory. Any recommendation that is not applied must be based on sound traffic engineering judgement and documented.~~

Added a new definition for a side road and included a reference to Clause 4.6.7 for the use of the ON SIDE ROAD message on TTM signs. See also changes to Clause 4.6.7.

1.3.26 Side Road (use of ON SIDE ROAD message)

New

A side road is any other road which intersects and departs from the road you are travelling on.

For the use of the ON SIDE ROAD message refer to Clause 4.6.7.

AITDSA only recommends devices and does not approve use, which is left to the State Road Authorities. A product recommended by AITDSA is not automatically approved for use in Queensland. Transport and Main Roads needs to approve the device or practice for use in Queensland, with the AITDSA recommendation being considered as part of the assessment process.

Added information for devices which are recommended by the Austroads Innovative Temporary Traffic Management Device and Solution Assessment (AITDSA) Scheme.

See changes highlighted yellow following.

1.5 Innovation

New

Innovative treatments that provide improved safety, efficiency and/or value ~~for-money~~ engineering outcomes are encouraged. Such treatments may include:

a) planning for greater network impacts through reducing the level of service for the road user typically enables works to be undertaken in a more time- and cost-efficient manner

b) innovative deployment of devices, and/or

c) alternative device layouts using new and/or improved devices.

New or improved devices, treatments or practices require approval by the Department of Transport and Main Roads (see Clause 1.9 for guidance about variation to optimal treatments).

Devices which are recommended by the Austroads Innovative Temporary Traffic Management Device and Solution Assessment (AITDSA) Scheme also require the approval by the department prior to being used on roads in Queensland. The AITDSA recommendation would be considered and form part of the department's approval process.

Clarified that an Event Traffic Marshal is a volunteer.

See changes highlighted yellow following.

1.7 Prescribed training

New

A person is only authorised to perform the role in Queensland if the person holds an authority card that is applicable to that role (that is, where such an authority is a mandatory regulatory requirement). To obtain an authority card in Queensland, a person must undertake the relevant prescribed training course and meet any additional requirements relevant to the appropriate authority card. Prescribed training courses shall be those developed by the Department of Transport and Main Roads and delivered by approved registered training organisations.

Prescribed training courses are outlined as follows:

a) *Working in proximity to traffic awareness Part 1*: Required for persons who work on or adjacent to a road in accordance with the QGTTM Part 8 Table A7

b) *Working in proximity to traffic awareness Part 2*: Required for persons who have completed *Working in proximity to traffic awareness Part 1*, and are required to select and implement work method practices as per the short term, low impact works provisions (with exceptions) in accordance with the QGTTM Part 8 Table A7

c) Traffic management implementation (TMI): Required for persons implementing Traffic Management Plans (TMPs) and Traffic Guidance Schemes (TGSs) in accordance with the QGTTM Part 8 Table A5

d) Traffic management design (TMD): Required for persons that design, develop, review and inspect TMPs and TGSs in accordance with the QGTTM Part 8 Table A3

e) Traffic Controller: Required for person who holds an appointment to perform the functions of a Traffic Controller (see Clause 1.3.19) in accordance with the QGTTM Part 8 Table A4, and

f) Event Traffic Marshal: Required for volunteers ~~persons~~ undertaking event traffic management in accordance with the QGTTM Part 8 Table A7.

In addition to the prescribed training courses identified above, temporary traffic management (TTM) workers listed below shall also act in accordance with the relevant QGTTM requirements:

g) *lookout person*: For persons who have completed Working in proximity to traffic awareness Part 1 and Part 2 and are required to act in accordance with the QGTTM Part 8 Table A7

h) *roadworks pilot vehicle driver*: For persons who act in accordance with the QGTTM Part 8 Table A7

i) *truck mounted attenuator (TMA) vehicle driver*: For persons who have completed TMI and are required to act in accordance with the QGTTM Part 8 Table A7, and

j) *authorised person*: For persons who act in accordance with the QGTTM Part 8 Table A7.

Clarified the risk assessment requirements and what needs to be demonstrated and documented through this process when mandatory requirements or recommendations cannot be adopted. Added the requirement to document sound judgement and reasoning through a risk assessment process to demonstrate the acceptability and safety of the varied approaches.

RPEQs do not specifically require TMD qualifications, as the need for TMD will be covered off in the “competent” part of complying with their RPEQ and the Engineers Act requirements. Removed the requirement for an RPEQ to also hold the TMD competency when signing off mandatory requirements that are not adopted or for innovative treatments.

RPEQ sign off is just for the elements where RPEQ justification and certification are required – not the whole design. Added the RPEQ is only required to certify that portion of the TMP and/or TGS design impacted by or related to departures from the mandatory requirements.

See changes highlighted yellow following.

1.9 Variation to treatments and Registered Professional Engineer of Queensland certification

New

This Part of the *Manual* contains mandatory requirements (*shall*), recommendations (*should*) and options (*may*). The application of these mandatory requirements and recommendations is intended to provide the optimal level of safety and traffic efficiency. Variations to these treatments may be undertaken as follows:

a) Where recommendations (*should*) are not adopted in preparing a TMP or TGS, the reasons must be based on sound temporary traffic management judgement and reasoning, and shall be documented through a risk assessment process to demonstrate the acceptability and safety of the varied approach. The ~~a~~ risk assessment, in accordance with the QGTTM shall be undertaken and signed by a TMD or an RPEQ.

b) Where mandatory requirements (*shall*) are not adopted in preparing a TMP or TGS, the reasons must be based on sound temporary traffic management or traffic engineering judgement and reasoning, and shall be documented through a risk assessment process to demonstrate the acceptability and safety or the varied approach. The ~~a~~ risk assessment, in accordance with the QGTTM, shall be undertaken and signed by a TMD or an RPEQ.

   In addition, both the risk assessment and the TMP and/or TGS shall be certified by a Registered Professional Engineer of Queensland (RPEQ) ~~with at least a TMD competency~~.

   The RPEQ is only required to certify that portion of the TMP and/or TGS design impacted by or related to departures from the mandatory requirement.

   Where mandatory requirements (shall) are not adopted, the TMD preparing the TMP or TGS shall email notifications of variations to mandatory requirements (including all relevant information and RPEQ details) to TrafficEngineering.Support@tmr.qld.gov.au for information purposes and for the benefit of identifying potential future practice changes – not for approval or endorsement. These variations may include learnings that may be attributed to the variation of a *shall* requirement, such as operational, cost or safety impacts.

c) Where innovative treatments (see Clause 1.5) that are outside the scope of the Queensland MUTCD are proposed to be adopted in a TMP or TGS, a risk assessment, in accordance with the QGTTM, shall be undertaken by a Competent Person ~~with at least TMD competency~~. Both the risk assessment and the TMP and/or TGS shall be certified by an RPEQ ~~who may be required to hold TMD competency~~. The RPEQ is only required to certify that portion of the TMP and/or TGS design impacted by or related to the use of the innovative treatment which is outside the scope of the Queensland MUTCD.

   All proposed innovative treatments require approval by Transport and Main Roads prior to their use or adoption. Requests for approval of innovative treatments (including all relevant information) shall be emailed to TrafficEngineering.Support@tmr.qld.gov.au. As part of an approval to use or trial an innovative treatment, Transport and Main Roads may require that the applicant provides a detailed evaluation report on the performance and effectiveness of the treatment. Transport and Main Roads may use the results of the evaluation to identify potential future practice changes to this Part of the *Manual*.

d) The use of options (*may*), when adopted in preparing a TMP or TGS, are not a variation to the optimal treatment and do not require certification by an RPEQ.

Very few roadworks sites should fall within scope of the RPEQ requirement in ~~addition~~ relation to subclauses (b) and (c). Examples include TMPs or TGSs which involve complex geometric changes that require the application of engineering design principles or complex diversions that might require detailed analysis (such as micro-simulation traffic modelling) to establish the network impacts.

Risk assessments for TTM activities shall be prepared in accordance with the requirements in QGTTM Part 10 Section 2 *Risk Management for TTM*.

Entire clause now located in Queensland MUTCD to make it easier for the end user to use the document. No longer needing to go back and forth between the Queensland MUTCD and Australian Standard several times.

Information which was remaining in AS 1742.3 has been relocated to the Queensland MUTCD and is highlighted blue.

Added guidance in item g) on the recommended location of a 600x600 yellow retroreflective blank panel.

See changes highlighted yellow following.

4 Function, description and use of standard signs and devices

4.2 Selection and use

4.2.2 Multi-message signs

Difference

Replace the entire Clause 4.2.2 with the following:

Multi-message signs offer an alternative sign display to that of standard signs in the Temporary (T Series), Regulatory (R Series), Warning (W Series) and Traffic Instruction (G Series) which are displayed singularly or sometimes as two signs with related messages. Multi-message signs, designated within the TM, RM, WM and GM Series, allow for the display of up to three logically related messages within a single uniform modular frame (see Clause 4.5.2).

Additional multi-message sign panels in common use for which there are no standard sign alternatives may be selected from Appendix A.

Further multi-message sign panels may be developed by state and territory authorities. Where this occurs, the sign specifications, conditions of use and permissible panel combinations should be consistently applied across all jurisdictions.

The conditions of use for multi-message signs are as follows, except when used to control pedestrians only:

a) Multi-message sign shall have relevant messages consisting of a minimum of —
   i. two 600 mm × 600 mm panels; or
   ii. one 600 mm × 600 mm panel and one 1200 mm × 300 mm panel; or
   iii. one 1200 mm × 600 mm panel.

b) There shall be no more than one regulatory sign panel in the same multi-message sign frame displayed facing the direction of traffic. This excludes additional regulatory supplementary panels relating to and conditioning or otherwise the other regulatory sign panel(s) and which combine to form a single regulatory message.

c) When used, regulatory sign panels shall be placed in the top position of the frame on the side closest to the traffic. This requirement does not apply to No Left (RM2 6A L) or No Right (RM2 6A R) Turn prohibition panels, these panels are installed on the side of the multi message assembly where the turn prohibition applies (see examples in Figure 4.2.2(a)).

d) For multi-message signs facing traffic, within one frame, there should be no more than two message panels consisting of words only. If the 1200 mm × 600 mm space is filled with two separate 600 mm × 600 mm message panels, at least one of the 600 mm × 600 mm panels should be symbolic or a blank retroreflective yellow panel.

   These requirements for text only multi message panels do not apply to the following arrangements:

   i. multi message signs installed in accordance with section 46 of the Transport Infrastructure Act 1994 for restricted road use notices, where, in most cases, three panels containing words are required (see examples in Figure 4.2.2(b))

   ii. where police are performing traffic control duties and the 600 x 600 worded panels POLICE CONTROL AHEAD and PREPARE TO STOP are both required, see Figure 4.2.2(c) for examples, and

   iii. where the 600 x 600 worded panels ROAD CLOSED AHEAD and LOCAL TRAFFIC ONLY are required, see Figure 4.2.2(d) for examples.

e) A blank retroreflective yellow panel shall be placed within any unused module of the frame so that all panels in the frame are filled.

f) Multi-message sign panels (TM, RM, WM, GM Series) shall only be used in multimessage frames.

g) There shall be no more than one blank retroreflective yellow panel used in a multi message sign. When a 600x600 blank retroreflective yellow panel is used, it should be located furthest from traffic, except where arrows or other direction related symbol panels are required in this location.

h) Where multi message signs are used and a sign is required at the same location for both directions of travel, the following options may be applied:

   i. use two separate multi message sign assemblies, placed back to back to face opposing directions of traffic, or

   ii. if orientation and sight lines to opposing directions of traffic can be achieved, the one multi message assembly may be used with the panels installed back to back on the one frame.

i) When used, the Speed Limit AHEAD and the END speed limit panels in MMS arrangements shall be placed in the top position of the frame on the side closest to the traffic.

The requirements in a) and g) do not apply when using the 1200 x 300 multi-message panel (TM5 1B) DETOUR with a small arrow, or (TM5-1Q01) DETOUR with U-Turn symbol and there are no relevant messages that may be added to this assembly. In this case, a single TM5 1B or

TM5-1-Q01 panel may be used as the top panel in a multi message frame with two blanks (see example in Figure 4.2.2(e)).

Further information regarding the multi-message signs and examples are provided in this Section, Appendices A and B, and the Austroads Guide to Temporary Traffic Management.

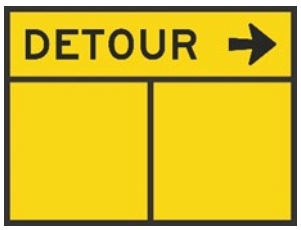
Figure 4.2.2(a) – Example multi-message signs with No Left / No Right Turn prohibition panels

Figure 4.2.2(b) – Examples of multi-message signs in accordance with the Transport Infrastructure Act 1994.

Figure 4.2.2(c) – Examples of multi-message signs for police

Figure 4.2.2(d) – Examples of multi-message signs for road closures

Figure 4.2.2(e) – Example of TM5-1B with two blanks



Added T1-Q06, a 600x900 version of the ROAD WORK AHEAD sign.

See changes highlighted yellow following.

4.6 Signs and devices for work site approaches and departures

4.6.2 ROADWORK AHEAD (T1-1, TM1-1, T1-31, T1-Q06), ROADWORK X km AHEAD (T1-16)

Addition

The ROAD WORK AHEAD T1-Q06 sign (600 x 900) sign may be used in Queensland, however T1-Q06 shall only be used on narrow medians and shoulders where the standard sign T1-1 or T1-31 would not fit and would be an obstruction to traffic.

Add the ROAD WORK AHEAD T1-Q06 sign (600 x 900) to Table 4.1A:

Sign	Sign number	Size, mm
ROAD WORK AHEAD (Narrow format)	T1-Q06	600 x 900

Add the following image below Table 4.1A:

T1-Q06

Difference

Replace:

> The ROADWORK X km AHEAD sign should be used X km in advance of a road work site, where additional advance warning is necessary.

with:

> Where additional advance warning is necessary, the ROADWORK X km AHEAD sign should be used X km in advance of the Primary PREPARE TO STOP sign (if traffic control is used), or the first cone in a taper (if a taper is used), or the start of the safety buffer area, and be at least two sign spacings in advance on the ROADWORK AHEAD sign.

Clarified requirements for using the ON SIDE ROAD message including the addition of a new Figure.

Modified text to align with ON SIDE ROAD message requirements.

Added ROAD PLANT ON SIDE ROAD sign.

See changes highlighted yellow following.

4.6.7 ROADWORK ON SIDE ROAD (T1-25, TM1-25), ROAD PLANT ON SIDE ROAD (T1-27, TM1-27)

Difference

Replace:

> The ROADWORK ON SIDE ROAD sign shall not be used on a side road to warn of relevant activities on the through road. The ROAD WORK AHEAD (TM1-1A) with a direction arrow (TM5-8A) should be used instead.

with:

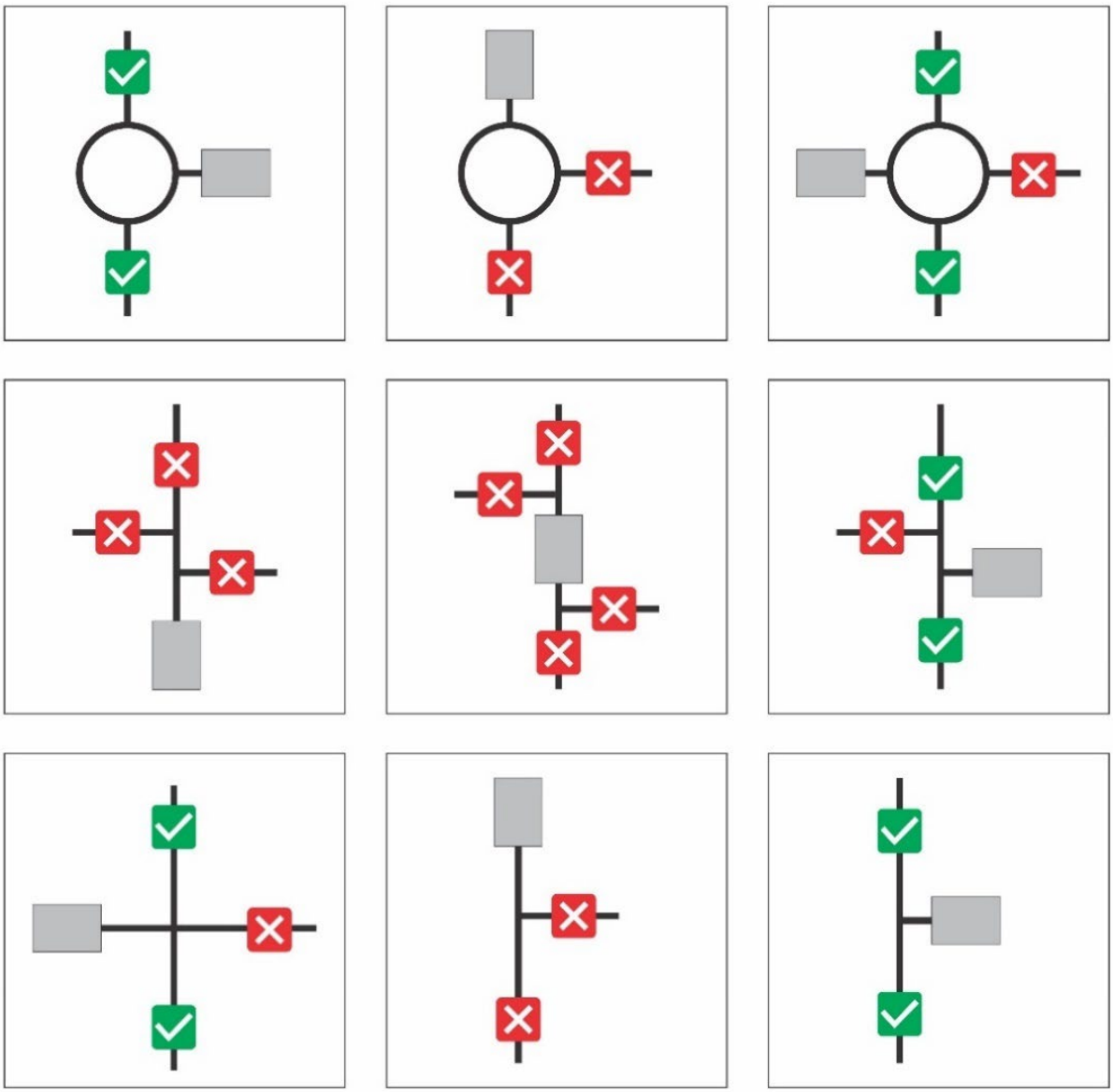
> The ROADWORK ON SIDE ROAD and ROAD PLANT ON SIDE ROAD signs shall not be used on ~~a side road~~ the terminating leg of a T intersection to warn of relevant activities on the ~~through road~~ continuing leg of the T intersection. The ROAD WORK AHEAD (TM1-1A or TM1-1C) or ROAD PLANT AHEAD (TM1-3-2C), with a direction arrow (TM5-8B) should be used instead.
>
> The standard MMS Lane Status panel TM10-1A may be used with or without the ON SIDE ROAD message to indicate a direction where the long arrow TM5-8B is not suitable.

Addition

The ROADWORK ON SIDE road sign shall not be used where there is an impact for traffic on the through road. Impacts on the through road may include but not be limited to any need for reduced speed zones, additional delineation, changes to alignment or surface condition, use of traffic control or traffic queueing which extends onto the through road. Where there are impacts on the through road, the ROADWORK AHEAD sign (see Clause 4.6.2) should be used.

The ON SIDE ROAD message may be used to provide warning of an activity on another road which intersects with the road you are travelling on (this includes cross intersections and roundabouts but excludes the through / straight direction even if this is another road). However, the ON SIDE ROAD message shall not be used when you are travelling on the terminating leg of a T intersection to provide warning of an activity on the continuing leg of the T intersection. See Figure 4.6.7 below.

Figure 4.6.7 – Using the ON SIDE ROAD message



Notes

1. ✗ indicates the ON SIDE ROAD message shall is not to be used on this approach
2. ✓ indicates the ON SIDE ROAD message may be used on this approach
3. ▭ indicates the work / activity area.

To ensure consistency in the use of the SIDE ROAD message. Added requirements for SIDE

ROAD CLOSED message to align with the requirements for using ON SIDE ROAD in Clause 4.6.7

4.6.9 SIDE ROAD CLOSED (T1-32, TM1-32)

Difference

Replace:

> The SIDE ROAD CLOSED sign shall be used in advance of an intersection where the side road is closed to all traffic.

with:

> The SIDE ROAD CLOSED sign shall be used in advance of an intersection where the intersecting road is closed to all traffic. The SIDE ROAD CLOSED sign shall not be used on the terminating leg of a T intersection to indicate a closure on the continuing leg of the T intersection. In this case the ROAD CLOSED AHEAD (TM1-43A or TM1-43C) sign with a direction arrow (TM5-8B) should be used instead.

Adjusted terminology for default speed zones in Queensland to match other departmental documents (built-up area and not in a built-up area).

See changes highlighted yellow following.

4.7 Signs and devices for regulatory control of traffic

4.7.3 Sign control, single lane operation

Difference

Replace the Speed Restriction row in Table 4.2(E):

Sign	Sign number	Size, mm
Speed Restriction	R4-1A R4-1B R4-1C R4-1D RM4-1A	450 x 600 600 x 800 900 x 1200 1200 x 1600 600 x 600

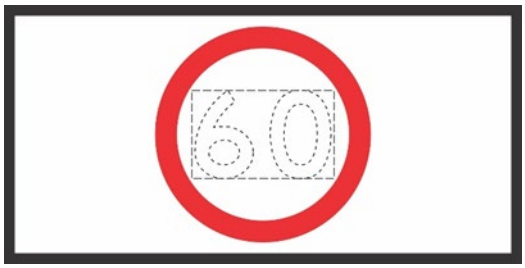
with:

Sign	Sign number	Size, mm
Speed Restriction	R4-1A R4-1B R4-1C R4-1D RM4-1A RM4-1-Q01	450 x 600 600 x 800 900 x 1200 1200 x 1600 600 x 600 1200 x 600

(a) Speed Restriction (R4-1, RM4-1)

Addition

Add the following Speed Restriction sign option.



RM4-1-Q01

(c) END Speed Limit (R4-12, RM4-12)

Addition

In Queensland where an END Speed Limit is used, the speed limit which applies following this sign is the default speed limit applicable for that road environment of either ~~an open rural road of 100 km/h or a built-up area of 50 km/h~~ a built-up area of 50 km/h or for a road this is not in a built-up area of 100 km/h.

Clarified that the symbolic Detour U-turn (symbolic) MMS panel must only be used with the DETOUR message.

See changes highlighted yellow following.

4.8 Detour signs

4.8.3 DETOUR (T5-1, TM5-1)

Addition

Add the following rows to Table 4.3(C):

Sign	Sign number	Size, mm
DETOUR (U-Turn)	TM5-1-Q01	DETOUR (U-Turn)
Detour (U-Turn) Symbolic	TM5-1-Q02	600 x 600
U-TURN FACILITY AHEAD	TM5-1-Q03	600 x 600

Addition

For detour routes that include a U-turn requirement, the DETOUR U-turn (TM5-1-Q01), Detour U-turn (symbolic) (TM5-1-Q02), or the U-TURN FACILITY AHEAD (TM5-1-Q03) signs may be used.

The Detour U-turn (symbolic) (TM5-1-Q02) panel shall only be used with a DETOUR panel (TM5-7A or TM5-7B).

TM5-1-Q01

TM5-1-Q02

TM5-1-Q03

Added recommended locations of the Detour marker (TM5-6A) arrow in an MMS arrangement, in response to questions regarding the placement of the detour arrow marker on MMS sign arrangements.

4.8.4 Detour marker (T5-6, TM5-6A)

Addition

When the Detour marker (TM5-6A) is used in a multi-message arrangement, the arrow panel should be located as follows:

- For an arrow pointing straight-ahead, locate the arrow closest to traffic, except where other direction related symbol panels (such as no right turn) are required in this location.
- For an arrow indicating a turn to the left or right, locate the arrow on the side of the multi-message arrangement the arrow is directing towards.

Other sizes for the truck symbolic sign exist in AS 1742.3 but not the C size MMS sign panel.

Added TM2-25-Q01C Trucks 1200x600 MMS sign panel.

4.20 Other signs and devices

4.20.1 General

Difference

Replace the Trucks (rectangle and square) row in Table 4.14:

Sign	*Sign number*	*Size, mm*
Trucks (Rectangle and square)	T2-25 TM2-25A	900 x 600 600 x 600

with:

Sign	*Sign number*	*Size, mm*
Trucks (Rectangle and square)	T2-25 TM2-25A TM2-25-Q01C	900 x 600 600 x 600 1200 x 600

Addition

Add the following Trucks (Rectangle and square) sign option to item a)

TM2-25-Q01C

Added ROAD PLANT ON SIDE ROAD (TM1-48C) and additional notes referencing Clause 4.6.7 and noting that this panel is the same as TM1-27C.

Added SIDE ROAD CLOSED (TM2-43A) and additional notes referencing Clause 4.6.9.

Added WATER OVER ROAD (TM3-21A) and additional notes relating to the use of this MMS panel to ensure consistency of application of the requirements for use of the WATER OVER ROAD sign in AS1742.2.

Added notes to the use of the ON SIDE ROAD panel to align with the requirements of using the ON SIDE ROAD message in Clause 4.6.7 and corrected the 600 x 600 arrow sign reference number.

Added ON SIDE ROAD with arrow (TM5-10B) and additional notes to align with the requirements of using the ON SIDE ROAD message in Clause 4.6.7.

Added EVENT ON SIDE ROAD (TM9-4C-Q01) and additional notes to align with the requirements of using the ON SIDE ROAD message in Clause 4.6.7.

Added notes to the use of the event ON SIDE ROAD with arrow (TM9-5B) panel to align with the requirements of using the ON SIDE ROAD message in Clause 4.6.7.

See changes highlighted yellow following.

Appendices

Appendix A – Additional multi-message signs (normative)

A.3 List of additional multi-message sign panels

Difference

The following replaces the corresponding signs included in Table A.1 in AS 1742. These revised multi message sign panels are for use in Queensland only.

Table A.1 — List of additional multi-message sign panels

Sign	Sign number	Size (mm)	Figure	Notes
ROAD PLANT ON SIDE ROAD	TM1-48C	1200 x 600		This sign is the same as TM1-27C. Refer to Clause 4.6.7 for requirements.
SIDE ROAD CLOSED	TM2-43A	600 x 600		Refer to Clause 4.6.9 for requirements.
WATER OVER ROAD	TM3-21A	600 x 600		This sign shall only be used to indicate that the road is trafficable with care although there is water over the road.

Sign	Sign number	Size (mm)	Figure	Notes
ON SIDE ROAD	TM5-9A	600 x 600		This sign may be used in advance of an intersection to warn of the relevant activities on another road where there is insufficient distance on the other road from the intersection to the start of the works for turning traffic to be given adequate warning. This sign shall not be used with a regulatory sign. This sign shall not be used with the Detour marker (TM5 6A), with the preferred arrow to indicate the direction of the side road where road work is being carried out, being the 1200 x 300 Horizontal Arrow (TM5 8B) as shown following. ~~This sign may be used on a through road to warn of works on a side road, however this sign shall not be used when used on a side road to warn of activities on a through road. This sign shall not be used on the terminating leg of a T intersection to warn of relevant activities on the continuing leg of the T intersection.~~ The ROAD WORK AHEAD (TM1-1A or TM1-1C) with a direction arrow (TM5-8B) should be used instead.   In Queensland, the 600 x 600 arrow (TM10-1A) ~~(TM2-Q03)~~ may be used if the TM5-8B arrow is not suitable.
	TM5-9B	1200 x 300		

Sign	Sign number	Size (mm)	Figure	Notes
ON SIDE ROAD L / R	TM5-10B (L) TM5-10B (R)	1200 x 300 1200 x 300		This sign may be used in advance of an intersection to warn of the relevant activities on another road where there is insufficient distance on the other road from the intersection to the start of the works for turning traffic to be given adequate warning. This sign shall not be used with a regulatory sign. This sign shall not be used on the terminating leg of a T intersection to warn of the relevant activities on the continuing leg of the T intersection. The ROAD WORK AHEAD (TM1-1A or TM1-1C) sign with a direction arrow (TM5-8B) should be used instead.
EVENT ON SIDE ROAD	TM9-4C-Q01	1200 x 600		This sign may be used in advance of an intersection to warn of an event on another road where there is insufficient distance on the other road from the intersection to the start of the event for turning traffic to be given adequate warning. This sign should be used with the 1200 x 300 Horizontal Arrow (TM5 8B) to indicate the direction of the side road where the event is being held. Example:  This sign shall not be used on the terminating leg of a T intersection to warn of an event on the continuing leg of the T intersection. The EVENT AHEAD sign with a direction arrow (TM5-8B) should be used instead.

Sign	Sign number	Size (mm)	Figure	Notes
EVENT ON SIDE ROAD L / R	TM9-5B (L)	1200 x 300		This sign may be used in advance of an intersection to warn of an event on another road where there is insufficient distance on the other road from the intersection to the start of the event for turning traffic to be given adequate warning. This sign shall not be used with a regulatory sign. This sign shall not be used on the terminating leg of a T intersection to warn of an event on the continuing leg of the T intersection. The EVENT AHEAD sign with a direction arrow (TM5-8B) should be used instead.
	TM9-5B (R)	1200 x 300		

Added new BUILDING WORK AHEAD (TM1-1-Q01A and TM1-1-Q01C) options and additional notes the use of these MMS panels.

Added new 1200x600 Trucks (TM2-25-Q01C) MMS panel.

Amended the notes to the Detour U-Turn symbolic panel (TM5-1-Q02).

Deleted PLANT AHEAD 1200x300 MMS sign (TM1-27-Q01). Use standard ROAD PLANT AHEAD (TM1-3-1A or TM1-3-2C) panels.

Deleted ROADWORK 600x600 and 1200x300 MMS signs (TM1-5-Q01A and TM1-5-Q01B). Use standard ROADWORK (TM2-26A and TM2-26B) signs.

Added notes to the use of the WATER OVER ROAD (TM3-21-Q01) sign to ensure consistency of application of the requirements for use of the WATER OVER ROAD sign in AS1742.2

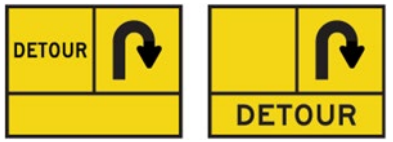
See changes highlighted yellow following.

Addition

The additional multi message sign panels detailed in Table A.2 are accepted for use in Queensland.

Table A.2 — List of additional multi-message sign panels for use in Queensland

Sign	Sign number	Size (mm)	Figure	Notes
Advance				
BUILDING WORK AHEAD	TM1-1-Q01A TM1-1-Q01C	600 x 600 1200 x 600		The BUILDING WORK AHEAD sign may be used where construction activities are located on private property next to a road and the construction activities may impact on the operation of the road. Examples 
Trucks	TM2-25-Q01C	1200 x 600		

Sign	Sign number	Size (mm)	Figure	Notes
Detour U-Turn (symbolic)	TM5-1-Q02	600 x 600		Shall only be used with a DETOUR panel (TM5-7A or TM5-7B). Examples 
~~PLANT AHEAD~~	~~TM1-27-Q01~~	~~1200 x 300~~		
~~ROAD WORK~~	~~TM1-5-Q01A~~ ~~TM1-5-Q01B~~	~~600 x 600~~ ~~1200 x 300~~		
Road condition				
WATER OVER ROAD	TM3 21 Q01	1200 x 300		~~Refer to Q series sign notes.~~ This sign shall only be used to indicate that the road is trafficable with care although there is water over the road.

In response to Industry requests for additional example arrangements (especially including some of the new Queensland panels) an updated Figure B.2 has been added with additional examples.

Appendix B – Multi-message sign combinations (informative)

Addition

The following Figure B2 provides additional multi-message sign combination examples.

Figure B2 – Additional multi-message sign combination examples with traffic travelling to the right side of the signs

Amended notes to ROADWORK AHEAD (T1-Q06) sign to clarify where this narrow version sign may be used.

See changes highlighted yellow following.

Appendix C – Supplementary list of temporary roadworks signs (normative)

C.1 Supplementary list of temporary roadworks signs (normative)

New

This Appendix describes the use of signs for special situations at temporary roadworks. Further details of the design of the signs may be obtained from the Traffic Engineering Team (TrafficEngineering.Support@tmr.qld.gov.au) at the Department of Transport and Main Roads, Brisbane.

Table C.1 lists the temporary roadworks signs approved for use in Queensland.

Table C.1 — List of temporary roadworks signs approved for use in Queensland

Sign	Sign number	Size (mm)	Figure	Notes
ROADWORK AHEAD	T1-Q06	600 x 900		This sign ~~is used~~ shall only be used on narrow medians and shoulders where the standard T1 1 or T1 31 ROAD WORK AHEAD signs would not fit and be an obstruction to traffic.

QGTTM General

Austroads guides use “must” in lieu of “shall” and all parts of QGTTM have been updated to “must” for mandatory requirements.

QGTTM Part 1

Added a new definition for “Recommended” to Table 3.1 with “Recommended” is the same as “should”.

Modified existing definitions for “shall”, “must” and “should” to include reference to MUTCD Part 3.

See changes highlighted yellow following.

3 Definitions / Glossary of terms

Addition

The following additional definitions apply:

Recommended	A recommendation is the same as a ‘should’, see definition for “should”.
Shall	Indicates that a statement is mandatory. Where certain requirements in the design or application of the device are described with the ‘shall’ stipulation, it is mandatory that, when an installation is made, these requirements be met. See Queensland MUTCD Part 3 Clause 1.9 b) for guidance on variations to ‘shall’ requirements.

Difference

The following different definitions apply:

Competent person	Refer to Clause 1.3.2 of the Queensland MUTCD Part 3.
Must	Is the same as a ‘shall’ requirement. Indicates that a statement is mandatory. Where certain requirements in the design or application of the device are described with the 'must' stipulation, it is mandatory that, when an installation is made, these requirements be met. See Queensland MUTCD Part 3 Clause 1.9 b) for guidance on variations to ‘shall’ requirements.
Should	Indicates a recommendation. Where the word 'should' is used, it is considered to be recommended use, but not mandatory. ~~Any recommendation that is not applied must be based on sound traffic engineering judgement and documented.~~ See Queensland MUTCD Part 3 Clause 1.9 a) for guidance on variations to ‘should’ recommendations.

QGTTM Part 2

Added additional considerations when selecting lane widths. Especially when travel paths are confined on each side by physical barriers and / or hazards (for example excavation), it is important to consider any impact of breakdowns and congestion for emergency vehicle access.

See changes highlighted yellow following.

3 Preparation of a Traffic Management Plan

3.3 Risk assessment

3.3.4 Identify treatment options

Addition

Add the following dot point to the treatment options to be considered:

- Mobile works – some work types and locations may be suited to implementation by a mobile works convoy. The controls applied and work arrangements for mobile work methods are set in QGTTM Part 4.

Addition

In the subsection '**Length of single-lane operation under reversible traffic flow**', add the following:

Generally, when using Table 3.5, and where the lengths are within the maximum limits, single-lane operation using active control by portable traffic control devices or traffic controllers will lead to a relatively short and consistent or stable queue length; however, additional traffic engineering input and consideration (risk assessments) are required to support longer lengths of single-lane operation which will generally lead to longer maximum queue lengths and queue lengths that are not easily managed, or are variable and unstable. Contingency planning for longer than expected or continually growing queue lengths shall be included as part of the TGS design. End-of-queue protection measures (refer to QGTTM Part 3 Section 4.8.3) shall be considered.

Difference

Replace the following:

Traffic control may not be required if:

- there is clear visibility past the work area and beyond it for at least 75 m, or to the end of the road if less than 75 m away and the length of the shuttle lane does not exceed 60 m
- road users have clear visibility of the work area and the opposing approach for a distance greater than 150 m and either one of the following:
  - traffic volume in both directions is 40 vph or less, and the speed is 70 km/h or less, and the length of the single lane is 60 m or less
  - the length of the single lane is 100 m or less, and GIVE WAY and ONE LANE signs are provided at one end of the shuttle lane
  - it is a residential street and the length of the shuttle is 60 m or less.

with

Active traffic control (by traffic controllers or PTCDs) may not be required where:

- GIVE WAY and ONE LANE signs are provided at one end of the shuttle lane and the NO OVERTAKING OR PASSING sign is also to be erected at the start of the single lane for traffic in the opposite direction and all the following apply:
  - traffic volume in both directions is 150 vph or less
  - the traffic speed is 70 km/h or less
  - each entry to the work area is visible from the other
  - the length of the single lane or shuttle flow segment is 120 m or less, and
  - there is sight distance to opposing traffic of at least 200 m beyond the far end of the work area for traffic facing the GIVE WAY, ONE LANE assembly.

- No specific traffic control signs are required for the single lane section, and traffic operates under natural give and take using the one open lane and either one of the following applies:
  - it is a residential street (permanent posted speed is 50 km/h or less) and there is clear visibility past the work area and beyond it for at least 75 m, or to the end of the road if less than 75 m away and the length of the shuttle lane does not exceed 60 m, or
  - road users have clear visibility of the work area and the opposing approach for a distance greater than 150 m or to the end of the road if less than 150 m away, the traffic volume in both directions is 40 vph or less, the permanent posted speed is 70 km/h or less, and the length of the shuttle lane is 60 m or less.

Addition

Where active traffic control is not provided (working under natural give and take, or where GIVE WAY and ONE LANE signs are in operation), the taper should be at 45 degrees on both the approach and departure sides of the work area and the remaining open single lane section should have a maximum width of 3.5 m. See QGTTM Part 3 Figure 5.4.4(a) for an example layout.

Difference

In the subsection **'Other traffic assessment elements – Lane widths'**

Replace Table 3.6 with the following:

Table 3.6 – Lane widths

Criteria	Lane width (m)
General lane widths	
≤60 km/h	Minimum 3.0*
70, 80 or 90 km/h	Minimum 3.2*
≥100 km/h	Minimum 3.4*
Curve with radius 100–250 m	Add curve widening of 0.5 m per lane
Curve with radius <100 m	In addition to the curve widening of 0.5 m per lane, consider the swept path of long vehicles (for example, buses, trams)
Two-way residential street	Minimum of 5.5 (sum both ways)

Criteria	Lane width (m)
Shuttle flow operation	
Shuttle flow with active control (by traffic controllers or PTCDs)	Minimum 3.0*
Shuttle flow, without active control on residential streets, includes no control or the use of GIVE WAY and ONE WAY signs (see Section 5.4.4).	Minimum 3.0* and Maximum 3.5 to ensure vehicles take turns using a single lane

* Temporary minimum lane widths are not to be greater than existing lane widths. This minimum temporary lane width does not apply to curves of radius 250 m or less, or locations where there are fixed vertical obstructions such as fences or safety barriers within 30 cm of the edge of the lane on one or both sides. Where these conditions apply, consider widths wider than those listed previously to accommodate large vehicles. The speed to be used when considering lane width requirements is the speed limit (permanent or reduced) which is applicable to that length of road.

Addition

When selecting lane widths, especially when travel paths are confined on each side by physical barriers and / or hazards (for example excavations or safety barriers) for a significant distance, it is important to consider any impact of breakdowns and congestion for emergency vehicle access and on traffic flow. This is generally only applicable for major link roads, arterial roads or highways where maintaining traffic flow and emergency vehicle access is critical.

The following considerations may impact the selection of lane widths:

- how will traffic get past a broken-down vehicle
- how will emergency vehicles get past a broken-down vehicle or through a congested road environment
- the length of the constraint may dictate the mitigations required, as short, localised constraints may not be a large issue under normal conditions
- where possible the minimum distance between physical constraints on each side of the carriageway should allow vehicles to move off to the side to allow emergency vehicles to pass
- in addition to minimum widths between physical constraints, other mitigations may be implemented including:
  - the availability of response vehicles to remove broken down vehicles to maintain traffic flow
  - alternative routes or detours may also be an option, especially for emergency vehicles.

Emergency services must be advised in advance of any constrained road environment likely to impact their response times and route choice.

Currently no mention of using electronic signatures, just that the TMP and TGSs need to be signed. Added an option for signing the TMP and TGS(s) electronically.

3.4 Plan and Design

3.4.1 Plan and design selected risk treatment

Addition

A signature on the TMP or TGS(s) may be electronic.

QGTTM Part 3

Entire clause now located in QGTTM to make it easier for the end user to use the document. No longer needing to go back and forth between the QGTTM and AGTTM several times.

Information which was remaining in AGTTM has been relocated to QGTTM and is highlighted blue.

Added information on the installation height of TTM signs exclusively targeting pedestrians.

Added 7500 vpd or greater value for high volume roads. High volume roads were not defined in AGTTM with 7500vpd being recommended by the TTM working group. This primarily only applies to TTM Category 1 roads and in this section to the duplication of signs.

Corrected reference for information on installation heights. Reference in AGTTM to AS 1742.2 for temporary sign installation height is not consistent with requirements in AGTTM Part 6 or in AS1742.3.

See changes highlighted yellow following.

2 Design process

2.5 Essential design principles

2.5.3 Signs

Difference

Replace the entire Section 2.5.8 with the following:

Signs indicate the nature of the hazard or work. For details on choosing an appropriate sign see AS 1742.3. Once an appropriate sign is chosen, its location needs to be incorporated into the TGS. There are two steps in sign placement:

- Locate the sign (see below).
- Check sight distance (see Section 2.5.4).

~~Replace:~~

~~Signs must be positioned a distance equal to that shown in Table 2.2 from the worksite or hazard (e.g. taper). Space successive signs (after the primary sign) the same distance as shown in Table2.2 unless stated otherwise. If there is only a single advance warning sign on the approach, the sign must be positioned at double the spacing shown in Table 2.2 from the worksite or hazard.~~

~~with:~~

Signs must be positioned a distance equal to that shown in Table 2.2 from the worksite or hazard (e.g. taper). Space successive signs (after the primary sign) the same distance as shown in Table 2.2 unless stated otherwise. If there is only a single advance warning sign on the approach, the sign must be positioned at double the spacing shown in Table 2.2 from the worksite or hazard.

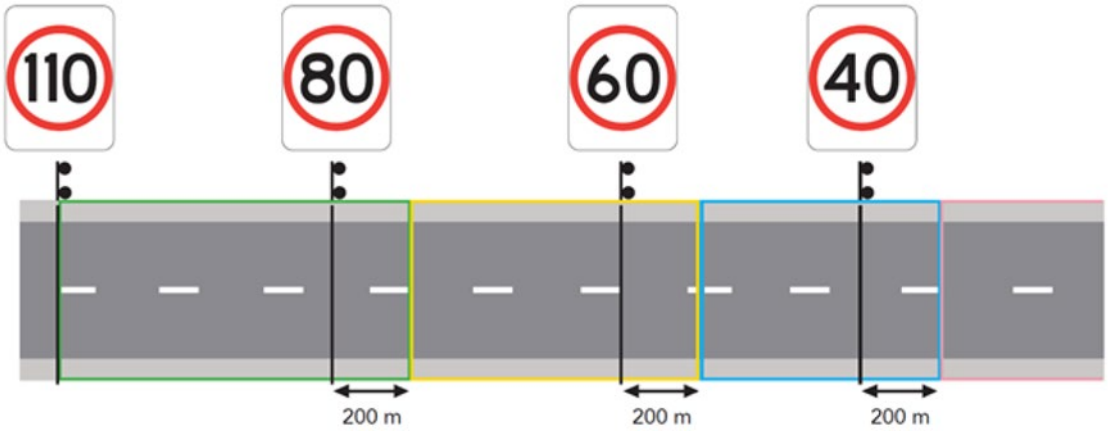
Note that sign spacing in Table 2.2 does not apply to the distance between the traffic controller and traffic control sign. Refer to AGTTM Part 7 for traffic controller guidance.

Table 2.2: Sign spacing

Speed (km/h)^	Distance (m)
≤55	15
≥56–65	45
≥66	Equal to the speed (km/h)

When designing spacing of advance warning signs, the speed to use in Table 2.2 must be as per Figure 2.2 rather than the intended travel speed. For example, if signs are positioned in the green zone, even when the speed changes from 110 km/h to 80 km/h, use the distance spacing which corresponds to a speed of 110 km/h in Table 2.2 for the first 200 m past the 80 km/h speed zone signs. If signs are positioned in the yellow zone, even when speed changes from 80 km/h to 60 km/h, use the distance which corresponds to a speed 80 km/h. Use 60 km/h for the blue zone and so on. In summary, always choose the higher speed limit in the first 200 m of the start of the new speed zone to ensure greater distance is provided to more accurately reflect potential travel speeds in these zones.

Figure 2.2: Speed to be used for advance warning sign spacing



Where a sign spacing is partially within the 200 m zone after a speed limit change, use the higher speed limit in determining the relevant full spacing (even though only part of this spacing may be within this zone).

Tapers which are partially within the 200 m zone after a speed limit change are to use the higher speed limit in determining the relevant full taper length (even though only part of the taper length may be within this zone).

The following figures illustrate the relationship between a speed zone change and the spacing / distance applicable to signs or hazards (such as a taper).

Where traffic speed is substantially different (+/- 10 km/h or more) to the posted or temporary speed zone values, refer to Section 2.5.9 for the speed value to use in the tables.

Figure 2.2(a) – Sign or hazard within 200 m of a speed zone change

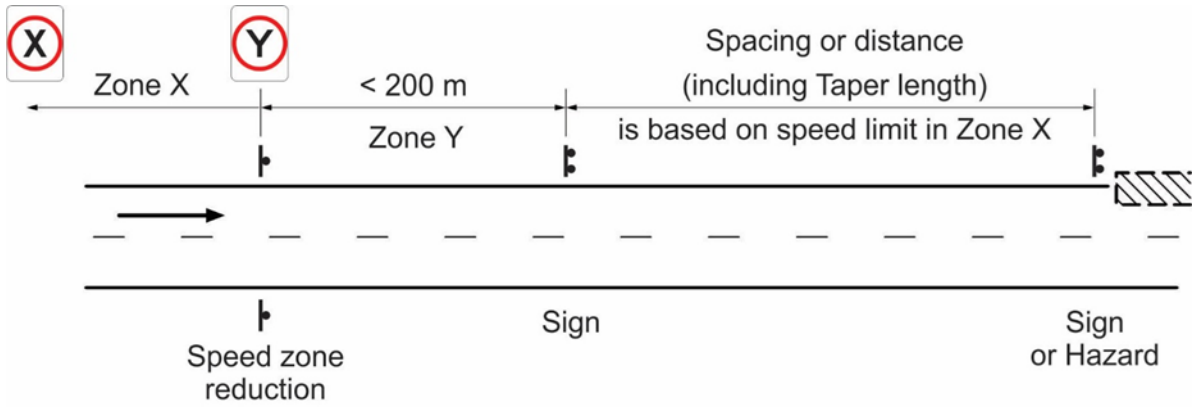
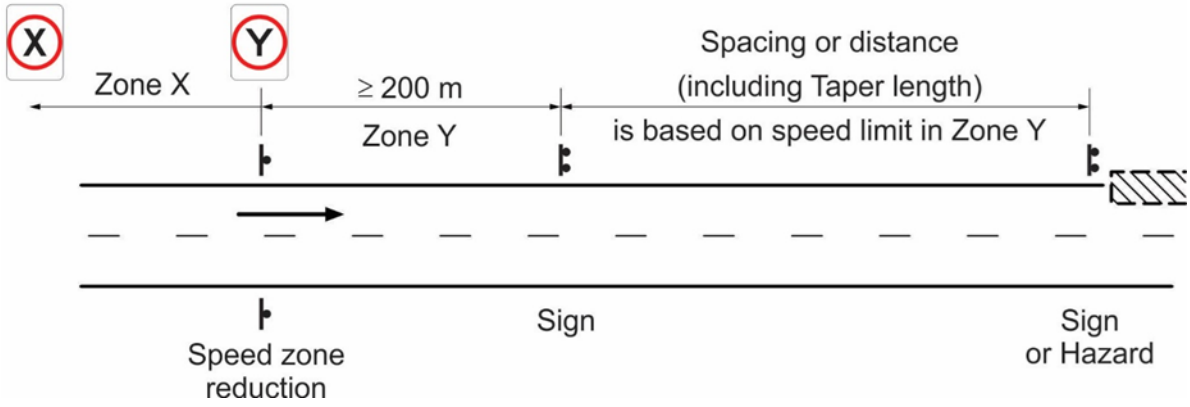


Figure 2.2(b) – Sign or hazard greater than or equal to 200 m from a speed zone change



Where site restrictions prevent the placing of required signs (e.g. local topography, median barriers, bridges) the following should be considered:

- moving signs away from the site restriction and installing additional signs
- using smaller signs, subject to the approval of the relevant authority
- using median barrier brackets to support signs, subject to the approval of the relevant authority.

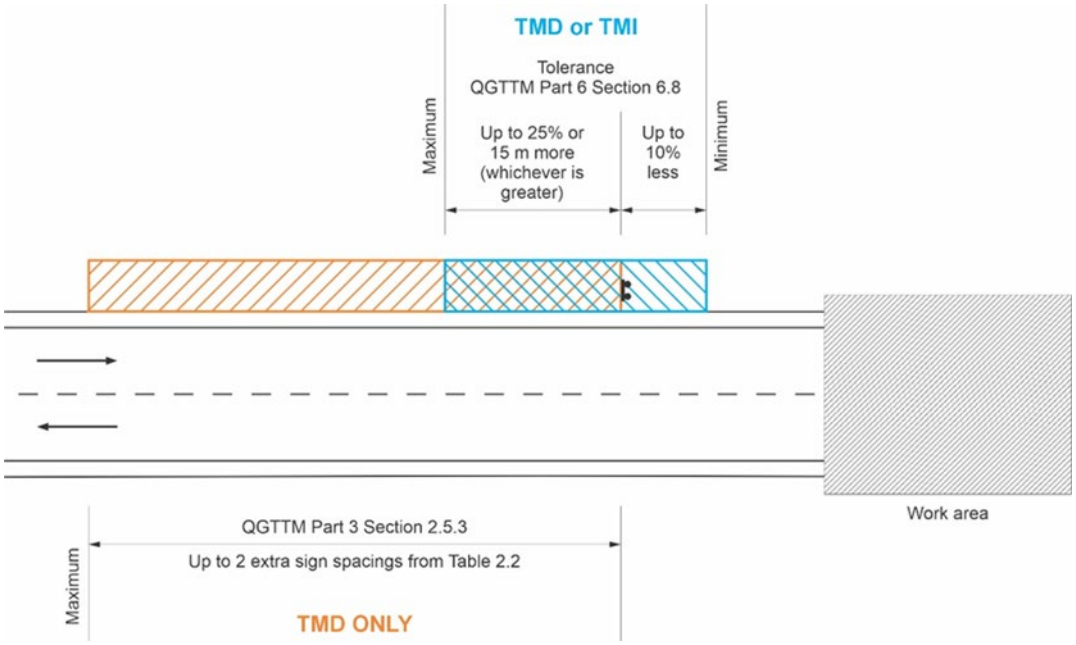
Where a physical constraint on site impacts locating the sign(s) as per the spacing requirements in Table 2.2 and it is supported by a risk assessment, the TMD may increase this spacing requirement (up to a total maximum spacing of three times the spacing in Table 2.2) to suit the site conditions without requiring an RPEQ sign off.

A TMD may apply tolerances (see AGTTM Part 6 Section 6.8) to the spacing requirements for signs and devices when preparing the design of a TGS.

See Figure 2.5.3(a) for the tolerances that apply to a sign spacing.

If a TMD applies a tolerance, which is either the minimum or maximum allowable (as per the above or AGTTM Part 6 Section 6.8), or is so close to the maximum or minimum such that a TMI also applying the maximum tolerance as per AGTTM Part 6 Section 6.8 on site may exceed the total allowable tolerance, or uses the provisions above to increase the spacing, the TMD must specify this distance as either a minimum or maximum (or provide the maximum or minimum value) on the TGS so that a tolerance is not also applied on site by the TMI which would then exceed any applicable limits.

Figure 2.5.3(a) – Sign spacing tolerances



~~Replace:~~

> ~~Signs required for works which will be in progress for longer than 14 days may be installed in a more permanent manner on posts sunk into the ground. Check that underground utilities are not located below and making holes is approved by the relevant road authority. Ensure regular site inspection, maintenance and securing practices occur in these circumstances. In these situations, the installation height of all temporary signs mounted in a permanent manner must be based on the principles illustrated in AS 1742.2.~~

~~with:~~

> While any sign may be installed in a permanent manner on posts sunk into the ground, ~~it is recommended that~~ signs required for works which will be in progress for longer than 14 days (that are not exclusively targeting pedestrians) should be installed in a permanent manner on posts sunk into the ground. Check that underground utilities are not located below and making holes is approved by the relevant road authority. Ensure regular site inspection, maintenance and securing practices occur in these circumstances. In these situations, the installation height of all temporary signs mounted in a permanent manner must be based on the ~~principles illustrated in AS 1742.2~~ requirements in AGTTM Part 6 Section 6.6.1 and AS 1742.3 clause 4.3.2. Signs directed exclusively towards pedestrians must be installed at a height which will enable signs to be viewed easily by pedestrians (see QGTTM Part 6 Section 6.6.1).

The following must be considered when locating signs:

- Are signs appropriate for their location?
- Are signs located so that drivers' sight distance to the sign is maintained? Where they can be seen and read in adequate time by the intended road user? Sight distance for road users entering from side roads or private driveways must also be considered. The aim is to give road users sufficient warning when approaching a hazard (see Section 2.5.4)
- Are the signs placed at an appropriate height to ensure the drivers vision is maintained?
- Will signs be easily understood?
- Are repeater signs required?
- Have the risks associated with road users striking sign posts been considered?
- Do any additional measures need to be included to make the signage effective? E.g. For temporary speed limits, it is recommended that speed management treatments are included.

Sign placement should not make the sign itself, or its supports, a hazard to road workers, road users or local infrastructure (e.g. public transport). To reduce the risk of signs becoming hazards, the following treatments apply:

- Signs must be securely mounted. For road closures, consider mounting them on barricades or barriers to reduce risk of encroachment. Mounting on vehicles is also acceptable although caution and checks by an appropriately qualified person are recommended if this option is considered.
- Signs should be placed on the side of the road where work is being undertaken, though situations might arise where signs can only be put on the opposite side of the road.

~~Replace the dot point:~~

- ~~Signs should be placed on both sides of multilane and high-volume roads to effectively communicate relevant messages to road users. For temporary speed restriction signs, refer to section 5.5.1 for requirements to install on both sides of the road. If sign duplication is not possible (e.g. vegetation, barrier, inadequate width), the designer should document an alternative to ensure all road users are able to see signs. This may involve:~~
  - ~~placing signs on high temporary frames~~
  - ~~duplicating signs on one side of the road~~

~~– closing one lane to be used for sign placement~~

~~– use of a variable message sign (VMS).~~

~~with:~~

- To effectively communicate relevant messages to road users, signs should be placed on both sides of all multilane roads and should also be placed on both sides of high volume (7500 vpd or greater) roads. For temporary speed restriction signs, refer to Section 5.5.1 for requirements to install on both sides of the road. If sign duplication is not possible (for example, vegetation, barrier, inadequate width), the designer must document an alternative to ensure all road users are able to see signs. This may involve:
  - placing signs on high temporary frames
  - repeating signs on one side of the road
  - closing one lane to be used for sign placement, and/or
  - use of a variable message sign (VMS).
- Signs and sign support structures should be kept away from the edge of the roadway as outlined in AGTTM Part 6.
- Sign supports on the outside of curves and other vulnerable places should be avoided or the sign support should be protected. Signs used at roadwork sites should be frangible and not require protecting with additional devices such as road safety barriers.
- The Lane Status sign must be used where one or more lanes of a multiway roadway are closed to assist with providing advance warning. These signs must not to be used instead of signage of the closure. They should be used in conjunction with closure signage.
- Signs must not encroach on footpaths or bicycle lanes unless the path is wide enough to accommodate them. Consider vulnerable road users with impaired vision, mobility or cognitive limitations. A delineation device (e.g. a traffic cone) should be placed at the base of signs on footpaths or bicycle lanes. If the width of the footpath/cycle path is insufficient, then an appropriate TGS must be determined to manage the path users.
- Avoid placement that could direct road users into incorrect or dangerous situations.

- Signs or their supports must not obstruct visibility of other devices (e.g. signals, other signs, etc.), should not obstruct the view between different road users, or create a hazard for pedestrians or cyclists. Signs on narrow medians along the roadway might have reduced visibility. Increase the height of signs or consider using a VMS to improve visibility due to obstructions (e.g. parked cars).
- Signs must not be used where their legibility and effectiveness are compromised by contamination and/or marks and abrasions. Signs must be kept clean, especially in dusty or muddy conditions.
- Signs that conflict with the works must be removed or covered. Consider weather conditions (e.g. wind, rain) when choosing a suitable covering. It is essential that all signs at the worksite or varied travel route accurately represent the prevailing conditions at all times. Covering, altering or replacing signs may need to be approved by a RIM. Ensure that permanent signs are not damaged when doing so. Restore these signs when works are completed.
- Covering signs may be difficult due to height or size of the sign. When covering signs that are high, ensure this is done in a safe manner. All conflicting signs must be covered or removed, so it is important to identify any possible issues before implementation.
- Sign messages must not be permitted to be formed with tape, for example, Lane Status signs and mocking speed numerals in tape.
- Sign support structures must not be left in place without signs attached.

For merge tapers where the posted permanent speed limit of the road is 80 km/h or greater, the sign spacing between the lane status sign and the start of the merge taper may be increased to a distance of two sign spacings.

For merge tapers at any speed limit, where more than one lane is being closed, the sign spacing between the lane status sign and the start of the initial merge taper may be increased to a distance of two sign spacings.

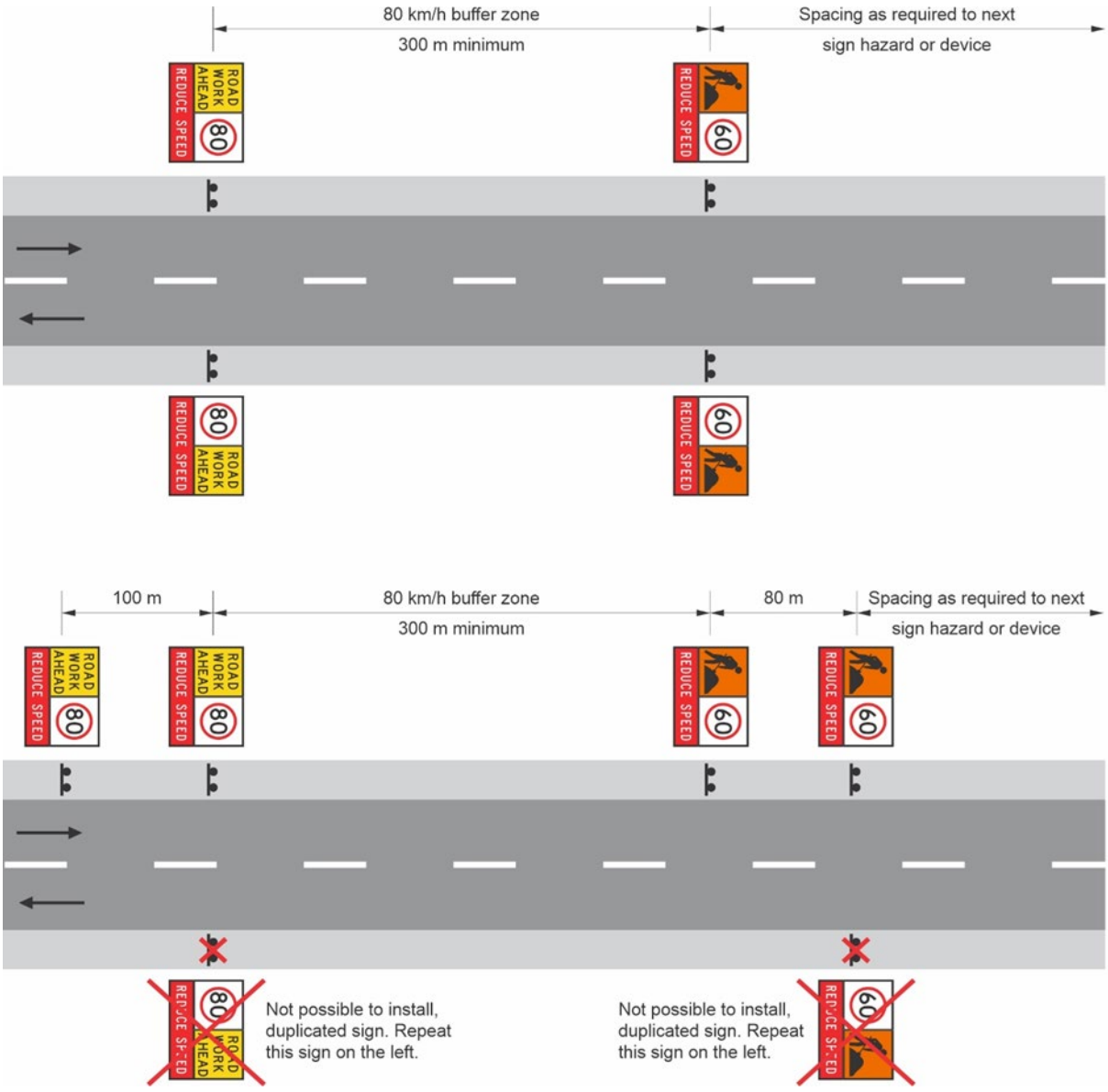
A distance plate (TC2287) may be added to the lane status multi message sign to indicate the distance from the lane status sign to the start of the merge taper.

If sign duplication is not possible and the designer has chosen to repeat signs on the one side of the road, repeated signs are located a minimum of one sign spacing from the original sign.

If there are spacing requirements between the original sign being repeated and another sign, device, or hazard beyond the sign (in the direction of travel), then this spacing requirement will now apply to the repeated sign. Any spacing requirements between the original sign being repeated and another sign, device, or hazard prior to the sign (in the direction of travel), will remain as a requirement to the original sign being repeated.

See Figure 2.5.3(b) for an example showing signs for one direction of travel only on a two-way road. This figure does not include all traffic control devices required and is not to be used as a TGS diagram.

Figure 2.5.3(b) – Example showing duplicated signs and repeated signs when signs are not able to be duplicated



Added reference to QGTTM Part 2 for additional considerations when selecting lane widths. Especially when travel paths are confined on each side by physical barriers and/or hazards (for example excavation), it is important to consider any impact of breakdowns and congestion for emergency vehicle access.

See changes highlighted yellow following.

2.5.8 Lane widths

Difference

Replace the entire Section 2.5.8 with the following:

Lanes carrying traffic around, through or past a roadworks site shall be as per Table 2.5. Lane widths should consider accommodating the swept path of large vehicles expected to negotiate the roadworks site.

Table 2.5 – Lane widths

Criteria	Lane width (m)
General lane widths	
≤60 km/h	Minimum 3.0*
70, 80 or 90 km/h	Minimum 3.2*
≥100 km/h	Minimum 3.4*
Curve with radius 100–250 m	Add curve widening of 0.5 m per lane
Curve with radius <100 m	In addition to the curve widening of 0.5 m per lane, consider the swept path of long vehicles (for example, buses, trams)
Two-way residential street	Minimum of 5.5 (sum both ways)
Shuttle flow operation	
Shuttle flow with active control (by traffic controllers or PTCDs)	Minimum 3.0*
Shuttle flow, without active control on residential streets, includes no control or the use of GIVE WAY and ONE WAY signs (see Section 5.4.4).	Minimum 3.0* and Maximum 3.5 to ensure vehicles take turns using a single lane

*Temporary minimum lane widths are not to be greater than existing lane widths. This minimum temporary lane width does not apply to curves of radius 250 m or less, or locations where there are fixed vertical obstructions such as fences or safety barriers within 30 cm of the edge of the lane on one or both sides. Where these conditions apply, consider widths wider than those listed previously to accommodate large vehicles. The speed to be used when considering lane width requirements is the speed limit (permanent or reduced) which is applicable to that length of road.

Consideration shall also be given to cyclists and pedestrians (see Sections 3.10, 4.10 and 5.13 for further details on traffic management regarding pedestrians and cyclists).

When selecting lane widths, especially when travel paths are confined on each side by physical barriers and/or hazards (for example excavations or safety barriers) for a significant distance, it is important to consider any impact of breakdowns and congestion for emergency vehicle access and on traffic flow. Refer to QGTTM Part 2 Section 3.3.4 for more detail.

Where there is a change in speed limit, the minimum lane width requirements may also change with lane widths based on the applicable speed limit at that location. Changes to lane widths will apply at the change in speed limit, with the transition to the new lane width commencing at the speed limit change location. The transition to the new lane width shall occur at a rate which matches the transition rate for a lateral shift (see Table 5.7) of the same distance (the lane width change) in the same location (note the 200 m value for Figure 2.2 applies to taper lengths): for example, for a lane width reduction of 0.4 m, as the lateral shift values are based on a full 3.5 m shift, the equivalent recommended lateral shift distance would be divided by approximately 8.7 (3.5 / 0.4) to establish the taper length required for the 0.4 m transition in lane widths.

As an example, a transition distance for a new speed limit (60 km/h) and lane width (3.0 m), from a 100 km/h zone with an existing 3.5 m lane width, will commence at the 60 km/h sign and transition the 0.5 m change in width over a distance of approximately 15 m, based on a 3.5 m lateral shift at 100 km/h being 100 m long (100 / (3.5 / 0.5) = 14.3).

Added a new section on using a combination of different work protection methods within a static work site.

2.7 Combining different work protection methods

New

Combining different works protection methods at the one site is permitted where the requirements for the different works protection methods are met.

Within a static work site, a mobile works treatment (QGTTM Part 4) or short-term low-impact works protection methods (QGTTM Part 5) may be used when appropriate and when satisfying the risk assessment and other provisions and criteria of the different works protection methods.

As per requirements in QGTTM Part 5 Section 3.6, a static work site must not be created solely for enabling a speed reduction which would permit short-term low-impact work protection methods which require a lower speed limit then applies to be used.

When a mobile works treatment (QGTTM Part 4) or short-term low-impact works protection methods (QGTTM Part 5) are used in a static work site, the respective requirements of QGTTM Part 4 or Part 5 must be applied.

Added information on the need for a signed detour route and provided a reference to new guidance in QGTTM on the need for signing a detour.

3 Around the worksite

3.4 Road Closures

Difference

Replace the dot point:

- if the worksite blocks a side road a detour should be provided (see Section 3.8)

with the following:

- not all road closures will require a detour route to be installed, Section 3.8 includes the requirements and considerations when signing a detour route and the parameters for determining the need for signing a detour route.

Added guidance for determining the need for and the signing requirements for detours.

TTM working group and the LGTTM working group have both raised concerns regarding the current perception that a DETOUR is a mandatory requirement when a road is closed regardless of that closed road's function.

Current practice is when road is closed to automatically provide and sign a detour route (also for just one direction of a two-way road being closed). Even for a minor local street with an obvious alternative and detour signs required on a major through road.

This change provides guidelines around the use of detours and establishes some principles requiring a detour be signed (and when a detour may be left unsigned).

Added reference to information for diversion route signing.

3.8 Design and Traffic Management

Addition

The need for a detour route should be considered for all road closures The following additional guidance is provided for determining the need for and signing detours (also see Section 3.8.1 for information on designing and signing a detour).

Detour routes may not be required for short road closures of local streets in a simple grid network or for side road closures of minor roads when an alternative route is available and obvious. When closing a road and determining the need for a detour route the TMD must consider several factors including:

1. The need for a detour is primarily dependent on:
    a. the type of road being closed
    b. the types of road users impacted by the closure, and
    c. the surrounding road network (availability and suitability of a detour route).
2. Other factors include consideration of the following:
    a. the length of the closure (both in terms of time frame and the overall length of the road section being closed)
    b. the length or complexity of any potential detour routes
    c. the surrounding road network and the ease to which the typical road user may locate a suitable alternative route without the need to fully or partially sign a detour route

d. the risks versus benefits associated with installing the signs for a detour route, and

e. the potential confusion for road users who encounter the signs for a detour route but are not impacted by or aware of the road closure requiring a detour (especially relevant when closing a local street and using a higher order road as part of the detour route).

In addition to the above, detour routes should be provided when closing major links such as tunnels or bridges or arterial roads, and the following options for detour routes and signs for these links should be considered:

3. Fully sign the closure and the various detour routes based on likely destinations to be sought by road users.
4. Fully sign the closure and allow road users to use the existing current signage if adequate to direct them to their chosen destinations.
5. Fully sign the closure and provide some VMS signs near the closure but allow road users to use the existing current signage if adequate to direct them to their chosen destinations.
6. Fully sign the closure and provide some VMS signs near the closure and some additional VMS or other direction signs at key decision points along the various detour routes to supplement the existing current signage to direct road users to their chosen destinations.

When closing major links such as tunnels or bridges or arterial roads, advance warning of the closure at a point where drivers can easily choose an alternative route should be provided.

For closures and detour routes that are to be in place for an extended period or are frequently used, the use of a diversion route signing approach as per TRUM Volume 3 Part 9 may be considered. The diversion route signing approach may also be considered for short term detours or to provide clarity where multiple different detour routes exist or overlap.

Provided updated guidance for several pedestrian and footpath related TTM considerations.

Clarified information on providing alternative paths for pedestrians.

Added information on the surfacing requirements for footpaths or alternative routes for pedestrians.

Added a time consideration on the selection of an alternative route and surface type.

Added consideration for tactile signs.

3.10 Vulnerable Road Users

3.10.1 Pedestrians

Difference

Replace the two dot points:

- Desirably, if footpaths or pedestrian crossings have been partially closed or temporarily relocated, a temporary footpath should be provided with minimum width of 1.8 m to allow for all pedestrians including those with mobility aids or on the same scale and to the same width as any facilities for pedestrian that existed prior to the works. This width should also be applied to any temporary ramps (e.g. kerb ramps). If these widths are not practicable, alternative routes must be provided with a firm smooth surface and no trip hazards in the following order of preference:
  1. on the side of a road reserve away from traffic
  - between the work area and road but not in a traffic lane
  - onto the road either in a lane used for parking or a delineated and protected section of an existing traffic lane
  - across the road to a footpath on the opposite side with delineation at crossing points and kerb ramps. Consideration is required for persons with impaired vision, mobility, hearing or cognitive limitations. Only use this option if an appropriate crossing facility can be provided (see Austroads Pedestrian Facility Selection Tool).
  - a traffic controller to safely guide pedestrians around the operation. Only use this option if there is no safe temporary path available.
- Appropriate surfacing must be provided for prams, strollers, wheelchairs or any other mobility aids.

With these three dot points:

- Desirably, if footpaths or pedestrian crossings have been partially closed or temporarily relocated, a temporary footpath should be provided with minimum width of 1.8 m to allow for all pedestrians including those with mobility aids or on the same scale and to the same width as any facilities for pedestrian that existed prior to the works. This width should also be applied to any temporary ramps (e.g. kerb ramps). At localised constraints an absolute minimum width of 1m may be provided, where opposing pedestrian are able to recognise the short constraint and pass at wider areas. If these widths are not practicable, alternative routes should be provided in the following order of preference:
  1 on the side of a road reserve away from traffic
  - between the work area and road but not in a traffic lane
  - onto the road either in a lane used for parking or a delineated and protected section of an existing traffic lane
  - across the road to a footpath on the opposite side with delineation at crossing points and kerb ramps. Consideration is required for persons with impaired vision, mobility, hearing or cognitive limitations. Only use this option if an appropriate crossing facility can be provided (see Austroads Pedestrian Facility Selection Tool).
  - a traffic controller to safely guide pedestrians around the operation. Only use this option if there is no safe temporary path available.
- Appropriate surfacing with a firm even surface and no trip hazards should be provided to footpaths or alternative routes to cater for prams, strollers, wheelchairs or any other mobility aids. Surfacing should be no worse than the existing path and should be suitable for use in all weather conditions and should not deteriorate or form ruts or be damaged from repeated use.
- The length of time a temporary footpath is required, would also need to be considered when selecting an alternative route and surface type.

Addition

Where pedestrians with vision impairment are expected or existing signs with tactile elements are provided at a location or in an area, refer to AS 1428.4.2 for consideration of tactile requirements for any temporary signs required.

Entire clause now located in QGTTM to make it easier for the end user to use the document. No longer needing to go back and forth between the QGTTM and AGTTM several times.

Information which was remaining in AGTTM has been relocated to QGTTM and is highlighted blue.

Revised wording of Item 8 to address side road speed limit and end of queue issues on the side road, and the need to consider travel speed when turning onto a side road with traffic control down the side road (it is not always necessary to reduce speed on the through road, but Primary PTS sign may still be required).

Removed reference to “side by side” for the PREPARE TO STOP MMS panel.

Added information on calculating queue lengths and signing options when using multiple lanes for queueing.

See changes highlighted yellow following.

4 Through the worksite

4.8 Advance warning area

Difference

Replace the entire Section 4.8 with the following:

The advance warning area is critical to the success of ‘through’ traffic management and aims to provide:

- no surprises to road users regarding traffic control
- a controlled release of relevant information (e.g. signs)
- repeated information where pertinent to emphasise danger.

It can also reduce traffic in the area by inducing road users to actively plan alternative routes where possible (refer to AGTTM Part 2). Advance warning signs and information also strengthen the delineation of a route and ensure that road users can safely and effectively navigate their way to their intended destinations. Note the following steps in conjunction with Figure 4.4, Figure 4.5 and Figure 4.6 examples when designing the advance warning area for ‘through’ methods:

1. Identify the PTCD or traffic controller position.

2. STOP HERE ON RED SIGNAL and STOP HERE WHEN DIRECTED must be installed where warranted in accordance with Queensland MUTCD Part 3. When used, they must be installed 6 m before the PTCD / traffic control position in the direction of travel. A temporary STOP line may be installed using temporary removable road marking tape.
3. Four cones should be placed on the centreline spaced 4 m apart starting from the STOP HERE ON RED SIGNAL or STOP HERE WHEN DIRECTED sign position (downstream). A Temporary Hazard marker (T5-7) or KEEP LEFT sign (R2-3-Q01) may be installed at the start of the row of four cones (on both ends of the four cones) to direct traffic to the correct travel path if needed.
4. Estimate end-of-queue position (via the box instructions in Austroads *Guide to Temporary Traffic Management* Part 3 Section 4.8). A marker (for example, a cone or bollard) should be placed on the shoulder at the predicted end-of-queue to assist the traffic controller and traffic management implementer to monitor queue lengths.
5. A PREPARE TO STOP sign must be placed in conjunction with the Boom Barrier or Traffic Controller (symbolic) or Signals Ahead sign a minimum distance as shown in Table 2.3 from the predicted end-of-queue, not the PTCD / traffic controller position. This is the primary PREPARE TO STOP sign.

   If the PREPARE TO STOP sign is more than 240 m from the traffic controller, an additional PREPARE TO STOP sign must be placed 120 m from the traffic controller (see Figure 4.4 and Figure 4.5). The primary purpose of this sign is to protect the traffic controller. This is the additional PREPARE TO STOP sign.

   If visibility is lost or the distance from the PREPARE TO STOP sign to the PTCD / traffic controller is more than 300 m, the use of repeater PREPARE TO STOP signs should be considered as per Table 4.4(a).

   Where these conditions are met and the additional or repeater PREPARE TO STOP signage is required, a Queued Traffic Ahead multi-message sign assembly may be used as the primary PREPARE TO STOP sign. If used, this multi-message sign assembly must include the Queued Traffic (symbolic) (TM1 47A), QUEUED TRAFFIC AHEAD (TM1 46A) and the PREPARE TO STOP (TM1-18B), see Figure 4.8(a) following.

   The primary PREPARE TO STOP must be installed in advance of the predicted end-of-queue in accordance with Austroads *Guide to Temporary Traffic Management* Part 3 Table 2.3.

Figure 4.8(a) – Queued traffic ahead multi-message sign assembly

TM1-47A **TM1-46A**

TM1-18B

Where this assembly is used, the preferred method of display is to locate the QUEUED TRAFFIC AHEAD text panel (TM1-46A) closest to traffic.

6. A ROADWORK AHEAD sign, or VMS must be placed as per Table 4.4(b) in advance of the primary PREPARE TO STOP sign position discussed in Step 5, except for advance signs on side roads, where the requirement of Step 9 will apply.

7. Surges in traffic demand can occur so adequate monitoring of the queue must be undertaken to minimise the risk of end-of-queue collision. If the end of queue extends beyond the estimated end-of-queue position, adequate warning of the end of queue must be provided. The options available include:

   a) initially, when traffic queues are approaching the estimated end-of-queue position, the traffic controllers should advise the site supervisor that traffic queues are approaching their maximum length and contingency planning may need to be implemented

   b) as an interim measure, the traffic controllers may adjust their timing or give priority to one approach to minimise queuing from the key direction

   c) if adjusting timings is not successful in managing queue lengths, implement a pre-designed contingency plan to cater for the longer queue lengths being experienced – this will need to be completed by the traffic management implementer while traffic controllers continue to control traffic, and

d) if a pre-designed contingency plan is not provided, seek urgent advice from the traffic management designer for the works.

8. ~~A 60 km/h speed zone shall be established at least one sign spacing in advance of the traffic control station where the speed zone on the approach to the traffic control station is higher than 60 km/h. Duplicate the speed limit signs and install any required repeater speed limit signs as per the requirements in Section 5.5.1. If the speed of traffic on approach to the traffic control station and the end of queue is less than 60 km/h through other controls (such as the traffic control station and end of queue is down a side road), a 60 km/h speed zone in advance of the primary PREPARE TO STOP sign (for example on the through road) may not be required~~. Where the speed limit on approach to the traffic control station is greater than 60 km/h, a 60 km/h speed zone must be commenced at least one sign spacing (Table 2.2) in advance of the primary PREPARE TO STOP sign. This does not apply to situations where the traffic control station is located down a side road and the speed of traffic on approach to the traffic control station and the end of the traffic queue is less than 60 km/h through other controls (such as the traffic needing to turn onto the side road at a lower speed). Speed signs may be required on the side road if the speed of traffic on the side road may exceed 60km/h prior to the traffic control station or the end of the traffic queue. See Section 4.8.1 for more information on speed limits for traffic control stations on a through road near a side road.

   Duplicate the speed limit signs on both sides of the road and install repeater speed limit signs as required in Section 5.5.1.

9. Where intersections are located within the advance warning area (between the traffic control station and the ROADWORK AHEAD or VMS sign), see Section 4.8.1 for the signing requirements for traffic on or entering from side roads.

10. Provide additional devices and methods for avoiding end-of-queue collisions as required in Section 4.8.3.

11. For shuttle flow operations, the traffic control taper must start a minimum of 6 m from the traffic control station.

As per AGTTM Part 7 Section 2.6.3, when used ~~side by side~~ in a multi-message situation, the PREPARE TO STOP panel must be placed closest to the travel way and that the 600 x 600 version of this sign is used as illustrated in Figure 4.8(b), excluding where the use of the 1200 x 300 version is specifically permitted by QGTTM.

Figure 4.8(b) – Multi message sign assembly examples (sign located on left side of the road)

Table 4.3: Estimated queue length

Maximum stopping time (minutes)	Multiplier	
	Ma (multiplier for average vehicles)	Mo (multiplier for oversized vehicles
2	2.4	8
5	6	20
10	12	40
15	18	60
30*	36	120

**A 30 minute stop time is unusual but has been included for some circumstances*

For the purpose of estimating the end-of-queue position only, the term 'oversized vehicles' also includes 'heavy vehicles'.

When estimating the queue length, Table 4.3 uses an average vehicle length of 6 m and an average heavy vehicle length of 20 m for a five minute stopping time (based on the five minute traffic count) and then adjusts the multipliers for other stopping time values.

Where very long vehicles are expected (for example outback and mining routes or routes where most vehicles are towing), then to ensure estimated queue lengths are as accurate as possible, an average length per vehicle that matches the actual traffic mix expected at that location should be used.

The estimated queue length must be at least a minimum of one average vehicle plus one heavy vehicle (of a length which may be applicable to the site). Part lengths of vehicles must be rounded up when estimating queue lengths.

To calculate the 'maximum stopping time' value used in Table 4.3 for each approach, the Traffic Management Designer must estimate the likely duration of time that queued traffic will be stopped at a traffic control station. Calculating

the maximum stopping time needs to include the total time from when the traffic controller stops traffic, through until the same traffic controller releases traffic for the next cycle from that approach. This would typically include the following considerations:

- the time taken for the traffic queue from one approach to pass the traffic control station and travel the length of the closure
- the time for the queue at the other end of the site to leave that traffic control station and also travel the length of the closure (this may commence at the same time as the other queue or following the completion of the other queues travel if shuttle flow is in operation)
- if traffic queues are held for a period (with no traffic traveling through or past the site), then this hold time will also need to be included
- a factor of safety may also be allowed for vehicles travelling the closure below the signed speed limit, and
- if more than two traffic control stations (one each end) are in operation, depending on the operating characteristics of the roadworks site, the time for each queue to be released and travel through the roadworks site may need to be considered and included.

The 'maximum stopping time' value will be used in Table 4.3 to determine the multipliers to be used with the number and type of vehicle (average or heavy) from the five minute count or calculation.

Table 4.4(a) – Maximum spacing for repeater PREPARE TO STOP signs

Speed (km/h)*	Distance (m)
≤55	60
≥56	180

* The 'Speed' value to be used for the maximum spacing for repeater PREPARE TO STOP signs is the actual posted speed (temporary or permanent) which applies (this will generally be 60 km/h but may be less) where the repeater spacing is required. If the speed limit changes within a repeater spacing, use the spacing for the lower speed limit.

Note: The 200 m zone in Figure 2.2 does not apply.

Table 4.4(b) – Minimum distance from ROADWORK AHEAD or variable message sign to primary PREPARE TO STOP sign

Speed (km/h)^	Distance (m)
≤55	30
≥56–65	90
≥66–75	140
≥76–85	240
≥86	Four times the speed (km/h)

^The 'Speed' value to be used for the minimum distance from the ROADWORK AHEAD or variable message sign to the primary PREPARE TO STOP sign is the actual permanent posted speed of the road prior to any reduction for the roadworks.

Estimate end of queue position

Queueing is expected for 'through' methods at stop locations where PTCDs or traffic controllers are positioned, sometimes resulting in collision. Collision can occur when the stationary queue extends past the PREPARE TO STOP sign location, most commonly when speed is greater than 70 km/h or the sight distance of approaching traffic to the end of the queue is:

- less than two times the speed limit in open road areas
- less than 1.5 times the speed limit in built-up areas.

To estimate queue length:

- Count the number of average and oversized vehicles that pass the PTCD/traffic controller position for five (5) minutes.
- Consider whether the majority of vehicles have been average or oversized (i.e. trucks). This will influence the 'multiplier' column used in Table 4.3.
- Multiply the number of vehicles counted by the number in the chosen 'multiplier' column (Ma for mostly average sized vehicles, or Mo for mostly oversized vehicles) using the maximum stop time required at the specific worksite.
- If you are unsure of the maximum required stop time or whether to use the 'average' or 'oversized' multiplier, seek assistance from a competent person or road authority.
- Use the formula below to calculate the estimated queue length:

  (number of average vehicles × Ma) + (number of oversized vehicles × Mo) = queue length

If more accurate data is available (e.g. traffic counts), this should be used instead of counting vehicles for five (5) minutes.

An estimated end-of-queue position is to be determined for the approach to each traffic control station and is to be based on the maximum expected traffic flow on that approach during the time traffic control will be in operation.

The count or estimate of the number of average and heavy vehicles during a five-minute period at a site may be completed using the following in order of preference:

1. Actual five-minute count of vehicles during the peak time the site will be occupied. This five-minute count is based on the vehicles approaching the selected traffic control station from the approach to be controlled by that station (not a sum of both directions of traffic). Consideration of peak traffic flow direction may be needed.
2. If a five-minute count is not possible, use annual average daily traffic (AADT) values with hourly breakdowns and percentage heavy vehicle data. To estimate the five-minute count, select the peak hourly period during the time the site will be occupied and divide by 12 to get an estimated five-minute value. Divide this by two if the AADT is for a two-way road. Use the percentage heavy vehicles information with this value to estimate the number of heavy vehicles for this five-minute period.
3. If a five-minute count is not possible, and AADT values with hourly breakdowns are not available, use AADT values and percentage heavy vehicle data. To estimate the five-minute count, firstly divide the AADT by a factor of 10 (to get an estimated hourly count) and then divide this by 12 to get an estimated five-minute value. Divide this by two if the AADT is for a two-way road. Use the percentage heavy vehicles information with this value to estimate the number of heavy vehicles for this five-minute period.

AADT information for state-controlled roads can be located on the Queensland Open Data Portal – Traffic Census data.

The duplication of the advance warning signs for a traffic control station as indicated in Figures 4.4, 4.5 and 4.6 below is not a specific requirement. Signs are to be duplicated in accordance with the requirements in Section 2.5.3 and Section 5.5.1 for speed signs.

Figure 4.4 illustrates an example of sign positioning for queues as per the steps above for a speed of 60 km/h where the PREPARE TO STOP sign is less than or equal to 240 m away from the PTCD/traffic controller. This diagram is not an example of how to install all traffic control devices and is not to be used as a TGS diagram.

Figure 4.4: Avoiding end of queue collisions (≤ 240 m)

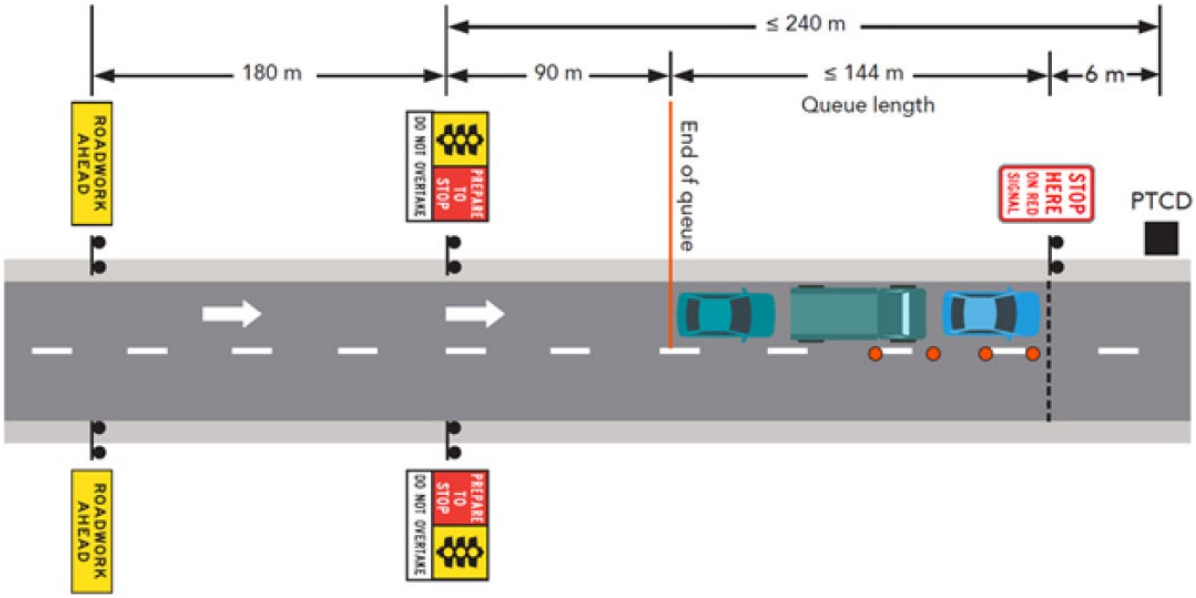


Figure 4.5 illustrates an example of sign positioning for queues as per steps above for a speed of 60 km/h where the primary PREPARE TO STOP sign is more than 240 m, but less than or equal to 300 m away from the PTCD/traffic controller. This diagram is not an example of how to install all traffic control devices and is not to be used as a TGS diagram.

Figure 4.5: Avoiding end of queue collisions (241 m to 300 m)

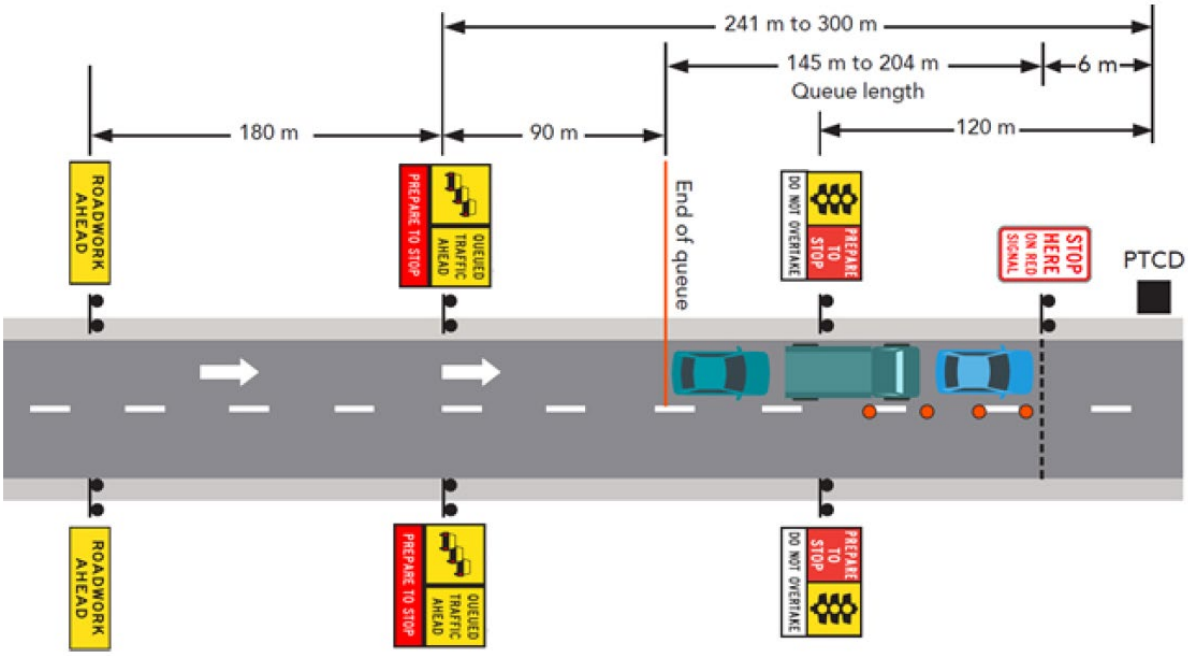
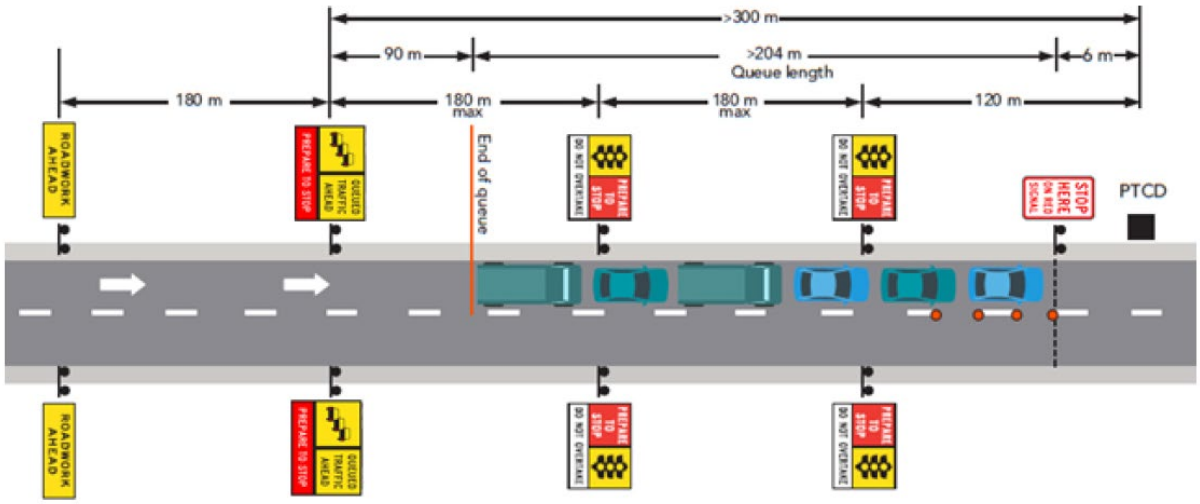


Figure 4.6 illustrates an example of sign positioning for queues as per steps above for a speed of 60 km/h where the primary PREPARE TO STOP sign is more 300 m away from the PTCD/traffic controller. This diagram is not an example of how to install all traffic control devices and is not to be used as a TGS diagram.

Figure 4.6: Avoiding end of queue collisions (> 300 m)



While using two lanes for queuing is possible and may reduce the physical length of the queue, it does come with additional risks related to driver behaviour and capability. Lane utilisation may not be evenly distributed, as drivers often favour one lane over another, especially when approaching a merge point. Many drivers tend to merge earlier than necessary, which can cause the end of the queue to extend further back, and lead to increased end of queue risk. Driver aggression and frustration may also be experienced by those in the queue due to motorists cutting in late, which may not be the best frame of mind for drivers to be in when approaching the traffic control station or passing the workers on the site.

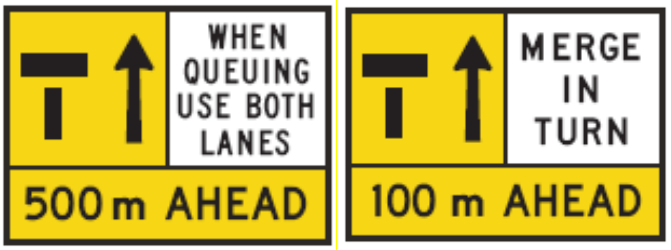
On multi-lane approaches, drivers are generally less prepared to stop, as they are not expecting this, which can create safety issues. The preference is to utilise queuing in a single lane where possible to minimise these risks.

If using two lanes for queuing, it's crucial to carefully assess the specific site conditions, implement additional safety measures, and closely monitor the actual queue formation during operation to ensure adequate warning of the traffic queue ahead is provided.

When multiple lanes are available within the expected queue distance, the queue length in any full width traffic lane may be used for queueing (the length of the merge taper for the merging lane must not be included in the queue length calculation). Additional queue length may be added to mitigate the risks of drivers favouring one lane over the other for queueing.

When using two lanes for queueing, consider the use of the WHEN QUEUEING USE BOTH LANES panel (TM2-Q04) and/or the MERGE IN TURN [panel (TM2-Q05) with the lane status signs.

Figure 4.8(c) – Multi message sign assembly examples for multiple lane queueing (sign located on left side of the road)



Relaxed requirement for end of queue protection on low volume roads.

TTM working group and the LGTTM working group have both raised concerns regarding the current approach which requires a lot of signs and devices on low volume roads.

Current requirement was limited to higher speed roads by the permanent speed limit and this change allows for a volume threshold to be applied.

See changes highlighted yellow following.

4.8.3 Additional end-of-queue protection

New

Where traffic control is in use, one or a combination of end-of-queue risk control measures in Chapter 1, Clause 2 of the *Guideline – Traffic Management at Works on Roads* must be implemented to manage the risk of rear end crashes where either of the following apply:

- the speed limit is 80 km/h or higher (prior to any reductions for the roadworks) and an annual average daily traffic (total vehicle count in both directions of travel per day) of over 500 vehicles per day, or
- where sight-distance to the end of the traffic queue is restricted (less than the value from Table 2.3).

End-of-queue risk control measures must also be implemented in Clause 5.8 of Annexure MRTS02.1 *Provision for Traffic*.

In addition to the requirements above, end-of-queue risk control measures should be considered and implemented to address end of queue risks at any site. Some considerations include:

- Where traffic slows significantly, or queues are formed due to congestion or roadworks.
- Where environmental or geometric issues exist that limit visibility or impact normal stopping distances such as poor weather conditions (for example rain or fog), poor road conditions, a downhill approach, vertical curves, night works (driver fatigue or visibility) or a slippery road surface are present.
- Where significant volumes of heavy vehicles are present or expected.

Provided updated guidance for several pedestrian and footpath related TTM considerations.

Clarified information on providing alternative paths for pedestrians.

Added information on the surfacing requirements for footpaths or alternative routes for pedestrians.

Added a time consideration on the selection of an alternative route and surface type.

Added consideration for tactile signs.

4.10 Vulnerable Road Users

4.10.1 Pedestrians

Difference

Replace the two dot points:

- Desirably, if footpaths or pedestrian crossings have been partially closed or temporarily relocated, a temporary footpath should be provided with minimum width of 1.8 m to allow for all pedestrians including those with mobility aids or on the same scale and to the same width as any facilities for pedestrian that existed prior to the works. This width should also be applied to any temporary ramps (e.g. kerb ramps). If these widths are not practicable, alternative routes must be provided with a firm smooth surface and no trip hazards in the following order of preference:
  - on the side of a road reserve away from traffic
  - between the work area and road but not in a traffic lane
  - onto the road either in a lane used for parking or a delineated and protected section of an existing traffic lane
  - across the road to a footpath on the opposite side with delineation at crossing points and kerb ramps. Consideration is required for persons with impaired vision, mobility, hearing or cognitive limitations. Only use this option if an appropriate crossing facility can be provided (see Austroads Pedestrian Facility Selection Tool).
  - a traffic controller to safely guide pedestrians around the operation. Only use this option if there is no safe temporary path available.

- Appropriate surfacing must be provided for prams, strollers, wheelchairs or any other mobility aids.

With these three dot points:

- Desirably, if footpaths or pedestrian crossings have been partially closed or temporarily relocated, a temporary footpath should be provided with minimum width of 1.8 m to allow for all pedestrians including those with mobility aids or on the same scale and to the same width as any facilities for pedestrian that existed prior to the works. This width should also be applied to any temporary ramps (e.g. kerb ramps). At localised constraints an absolute minimum width of 1m may be provided, where opposing pedestrian are able to recognise the short constraint and pass at wider areas. If these widths are not practicable, alternative routes should be provided in the following order of preference:
  1 on the side of a road reserve away from traffic
  2 between the work area and road but not in a traffic lane
  3 onto the road either in a lane used for parking or a delineated and protected section of an existing traffic lane
  4 across the road to a footpath on the opposite side with delineation at crossing points and kerb ramps. Consideration is required for persons with impaired vision, mobility, hearing or cognitive limitations. Only use this option if an appropriate crossing facility can be provided (see Austroads Pedestrian Facility Selection Tool).
  5 a traffic controller to safely guide pedestrians around the operation. Only use this option if there is no safe temporary path available.
- Appropriate surfacing with a firm even surface and no trip hazards should be provided to footpaths or alternative routes to cater for prams, strollers, wheelchairs or any other mobility aids. Surfacing should be no worse than the existing path and should be suitable for use in all weather conditions and should not deteriorate or form ruts or be damaged from repeated use.
- The length of time a temporary footpath is required, would also need to be considered when selecting an alternative route and surface type.

Addition

Where pedestrians with vision impairment are expected or existing signs with tactile elements are provided at a location or in an area, refer to AS 1428.4.2 for consideration of tactile requirements for any temporary signs required.

Entire clause now located in QGTTM to make it easier for the end user to use the document. No longer needing to go back and forth between the QGTTM and AGTTM several times.

Information which was remaining in AGTTM has been relocated to QGTTM and is highlighted blue.

See changes highlighted yellow following.

5 Past the worksite

5.3 Separate the work area

5.3.1 Road safety barrier system

Difference

Replace the entire Section 5.3.1 with the following:

~~Replace the first paragraph:~~

> ~~The road safety barrier system provides a physical barrier between the work area and moving traffic, designed to resist intrusion by errant vehicles and as far as practicable, redirect errant vehicles back into the travelled path. While safety barriers can be considered for all projects, this method may be inappropriate due to physical space requirements and limited edge clearances. If a road safety barrier is to be used, its design shall be based on the posted speed outside of works and not for the posted speed during works.~~

~~with the following:~~

> The road safety barrier system provides a physical barrier between the work area and moving traffic, designed to resist intrusion by errant vehicles and, as far as practicable, redirect errant vehicles back into the travelled path. While safety barriers can be considered for all projects, this method may be inappropriate due to physical space requirements and limited edge clearances.
>
> If a road safety barrier is to be used, its design must be based on the speed of traffic past the barrier. In most cases, this will be a semi-permanent reduced speed limit posted at the site which generally applies 24 hours a day / 7 days a week, with other further temporary reductions only applicable when required for works which are occurring. Where a general reduction in speed limit past the site has not been implemented, the permanent posted speed limit must be used as the design speed for the road safety barrier design.

The requirements of Section 2.5.9 are applicable to the design speed. If the traffic speed is greater than 10 km/h higher or lower than the speed limit past the road safety barrier, the speed of traffic must be used as the design speed for the road safety barrier design.

Speed limits past the road safety barrier must be monitored throughout the completion of works to ensure compliance with the road safety barrier design speed.

Safety barriers are typically used to:

- separate road users from severe hazard (e.g. deep excavation, a bridge pier, stockpile)
- separate traffic travelling in opposite directions
- reduce delays by avoiding more restrictive speed limits
- protect road workers and vulnerable road users (e.g. road shoulder as a temporary footpath) from narrow lateral clearance to moving traffic (e.g. when the work area is closer than 3 m to the nearest edge of traffic and the speed limit is more than 60 km/h). For work areas located more than 6 m to the nearest edge of traffic see Section 3: Around the Worksite.

End treatments must be provided when installing road safety barrier systems, ensuring they are immediately operational as part of the barrier system. They are designed to absorb energy and reduce the severity of impacts, also assisting in reducing the risk of errant vehicles entering the work area and road users accidentally impacting the barrier. End treatment options include:

- starting or connecting the barrier to the end of a permanent barrier or guardrail
- securely attaching any approved end treatment as per the Austroads Guide to Road Design Part 6 (e.g. crash cushions).

~~Delete the following dot point for end treatment options:~~

- ~~flaring the barrier system away from the road when the end of a barrier is further away from a traffic lane. Barrier design will provide guidance on the rate of flare.~~

The Austroads Safety Barrier Assessment Panel (ASBAP) expects products to conform to /NZS 3845. However, if a jurisdiction wants to deploy a product that has not been assessed by ASBAP, the jurisdiction will undertake its own risk assessment.

~~Replace:~~

> ~~End treatments are not required if the temporary road safety barrier system is flared behind a permanent road safety barrier or is outside of the adjacent clearance area and therefore not regarded as a hazard.~~

~~with:~~

> End treatments are not required if the temporary road safety barrier system is flared behind a permanent road safety barrier (or another temporary road safety barrier) and is outside the deflection zone requirements for that barrier system and therefore not regarded as a hazard.
>
> The following elements apply when positioning road safety barrier systems:
>
> - Adequate delineation of the road safety system must be provided to ensure road users are safely guided past the worksite.
> - Fittings other than delineators (e.g. visibility screens) must not be fixed to the road safety barrier unless they are designed to accommodate the fitting.
> - Screens designed to fit to barriers should also be approved by the relevant road authority relative to the work being done.
> - Water runoff should pass unimpeded to avoid surface ponding.
> - If positioned near high obstructions (e.g. power poles, fixed VMS, bridge piers, underpass scaffolding), the design should consider the extent of vehicle body roll (especially high vehicles) during impact.
> - Barrier deflection must be accommodated in the area immediately behind the road safety barrier system. A containment fence or longitudinal channelising barrier should be placed a clear distance equal to the likely dynamic deflection behind the road safety barrier system. Clearance in Table 5.1 is measured between traffic and the front of the barrier system and not behind the barrier system in the deflection zone. For example, see Figure 5.4 illustrating dynamic deflection. This example does not include all traffic control devices required and must not be used as a TGS diagram.

~~Replace:~~

- ~~A clearance between the road safety barrier system and the edge of the nearest traffic lane must be provided as shown in Table 5.1. These clearances are a recommendation only. There are no minimum clearances for permanent road safety barriers so the minimum for temporary systems if equally rated should be the same. Consider that road users often increase their travel speed during times the worksite is unattended.~~

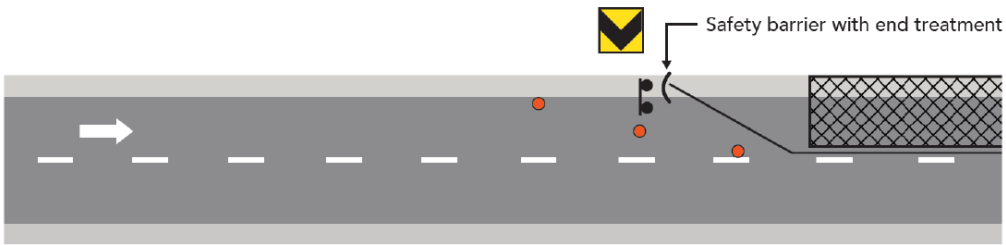
~~with:~~

- A clearance between road safety barriers and traffic should be provided. The recommended minimum clearance between the road safety barrier system and the edge of the nearest traffic lane is shown in Table 5.1. When determining the appropriate speed to select in Table 5.1, consider the range of speed limits and vehicle speeds that may occur while the safety barrier is in place and the likelihood that road users often increase their travel speed during times the worksite is unattended.

For further guidance regarding road safety barrier systems, see Austroads Guide to Road Design Part 6.

Figure 5.3 illustrates an example of safety barrier placement around the work area. This diagram does not include all traffic control devices required and is not to be used as a TGS diagram.

Figure 5.3: Safety barrier protection of work area



~~Replace Table 5.1 with the following:~~

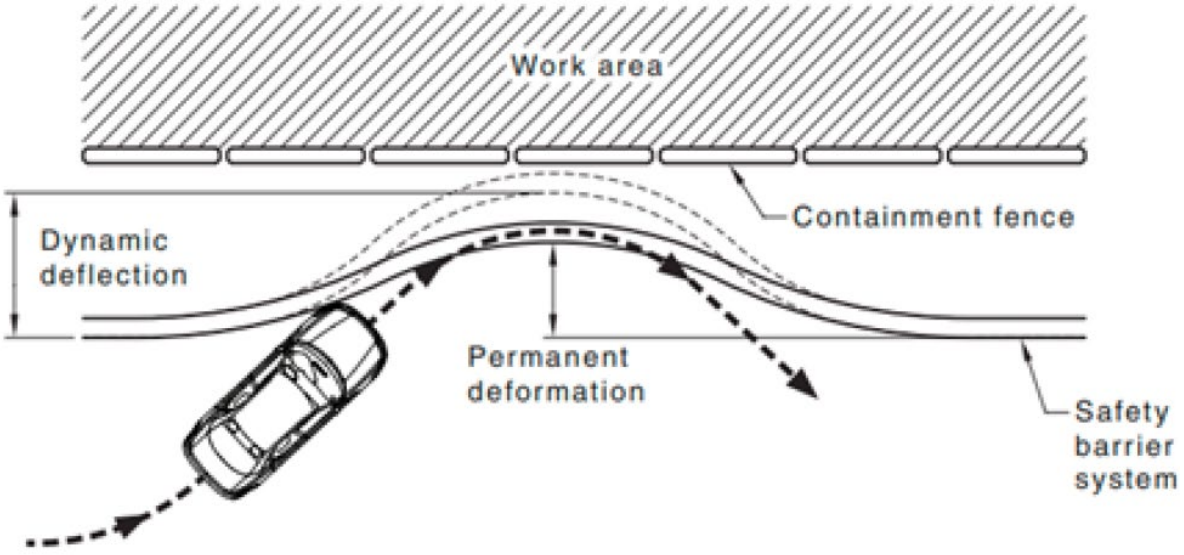
Table 5.1 – Road safety barrier system clearance to traffic lane

Speed (km/h)	Recommended minimum Distance (m)*
≤ 40	0.3
41–60	0.5
61–80	0.5
> 80	1

*Clearance is measured in front of the barrier system and not behind the barrier system in the deflection zone.

Figure 5.4 illustrates an example of dynamic deflection. Clearance in Table 5.1 is measured in front of the barrier system and not behind the barrier system in the deflection zone. This example does not include all traffic control devices required and is not to be used as a TGS diagram.

Figure 5.4: Dynamic deflection and protective fencing behind a safety barrier system



For additional guidance on road safety barriers in Queensland, see the *Road Planning and Design Manual Edition 2: Volume 3, Supplement to Austroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers*, with Section 6.8 of this document detailing the requirements for temporary road safety barriers.

Only road safety barriers included on the current list of products in the Transport and Main Roads *Accepted Road Safety Barrier Systems and Devices* document must be used at roadwork sites in Queensland.

The Austroads Safety Hardware Training and Accreditation Scheme (ASHTAS) will, over time, offer courses for Safety Barrier Operative (Entry Level), Installers (Permanent and Temporary Safety Barriers), Designers (Permanent and Temporary Safety Barriers), and more. See QGTTM Part 8 Section 5.5.12 for more details.

For more ASHTAS details see the departmental web page Austroads Safety Hardware Training and Accreditation Scheme (ASHTAS).

Concern with the recommended maximum spacing for delineation (cones and bollards) being risk assessed so that fewer cones and bollards are required through greater spacings adopted, however safety is impacted especially for workers on foot.

Developed an approach for delineation spacing of “must” for workers on foot, but still a recommended or “should” for other uses of delineation.

See changes highlighted yellow following.

5.4 Delineate the route

Difference

Replace:

If narrower edge clearance is required, obtain approval from the relevant road infrastructure manager.

with:

If narrower edge clearances are required due to constrained geometry, the requirements of Clause 1.9 of the Queensland MUTCD Part 3 must apply.

Difference

Replace:

The spacing between delineation devices should be as detailed in Table 5.3.

with:

The maximum spacing between delineation devices should be as detailed in Table 5.3, excluding where the delineation devices are used to separate traffic from workers on foot, in which case the maximum spacing between delineation devices must be as detailed in Table 5.3.

Addition

Add the following note to Table 5.3:

> Where the delineation devices are used to separate traffic from workers on foot, the maximum spacing between delineation devices must be as detailed above.

As above (Section 5.4), developed an approach for delineation spacing of “must” for workers on foot, but still a recommended or “should” for other uses of delineation.

See changes highlighted yellow following.

5.4.1 Traffic cones and bollards

Difference

Replace the first dot point

- Maximum spacing of cones and bollards must be as shown in Table 5.3.

with

- Maximum spacing of cones and bollards should be as shown in Table 5.3, excluding where the delineation devices are used to separate traffic from workers on foot, in which case the maximum spacing between delineation devices must be as detailed in Table 5.3.

Entire clause now located in QGTTM to make it easier for the end user to use the document. No longer needing to go back and forth between the QGTTM and AGTTM several times.

Information which was remaining in AGTTM has been relocated to QGTTM and is highlighted blue.

Add “Recommended” to the maximum length of operation under shuttle flow.

Relocated recommendation for contingency planning for longer than expected queue lengths and reference to requirements for end of queue protection to the dot points when using shuttle flow.

Note: The QGTTM Part 3 Shuttle Flow Tool will not be part of the November 2025 update and will be reviewed for inclusion in a future update.

See changes highlighted yellow following.

5.4.4 Shuttle flow

Difference

Replace the entire Section 5.4.4 with the following:

~~Replace:~~

~~When using shuttle flow, the following are requirements and recommendations:~~

- ~~Lane width should be reduced in accordance with Table 2.5. For further guidance on lane widths see Section 2.5.8.~~
- ~~The swept path shall accommodate heavy and over-dimensional vehicles if required.~~
- ~~Traffic control shall be provided at each end of the operation (see Section 5.10). Traffic control is not required if:~~
  - ~~there is clear visibility past the work area and beyond it for at least 75 m, or to the end of the road if less than 75 m away~~
  - ~~road users have clear visibility of the work area and the opposing approach for a distance greater than 150 m and either one of the following:~~
    - ~~traffic volume in both directions is 40 vph or less, and the speed is 70 km/h or less, and the length of the single lane is 60 m or less~~
    - ~~the length of the single lane is 100 m or less, and GIVE WAY and ONE LANE signs are provided at one end of the shuttle lane~~
    - ~~it is a residential street and the length of the shuttle is 60 m or less.~~
- ~~Ensure single lane section lengths are a maximum distance as shown in Table 5.4.~~

~~with:~~

This method is typically used when a portion of the roadway is closed so that a single lane is used alternately by traffic travelling in opposite directions. It is one-way flow with one direction first, then the other.

When using shuttle flow, the following are requirements and recommendations:

- Lane widths must be in accordance with Table 2.5. For further guidance on lane widths, see Section 2.5.8.
- The swept path must accommodate heavy and over-dimensional vehicles if required.
- Active traffic control (by traffic controllers or PTCDs) must be provided at each end of the operation (see Section 5.10), except as follows:
  - GIVE WAY and ONE LANE signs are provided at one end of the shuttle lane and

the NO OVERTAKING OR PASSING sign is also to be erected at the start of the single lane for traffic in the opposite direction and all the following apply:

  - traffic volume in both directions is 150 vph or less
  - the traffic speed is 70 km/h or less
  - each entry to the work area is visible from the other
  - the length of the single lane or shuttle flow segment is 120 m or less, and
  - there is sight distance to opposing traffic of at least 200 m beyond the far end of the work area for traffic facing the GIVE WAY, ONE LANE assembly.

- No specific traffic control signs are required for the single lane section, and traffic operates under natural give and take using the one open lane and either one of the following applies:
  - it is a residential street (permanent posted speed is 50 km/h or less) and there is clear visibility past the work area and beyond it for at least 75 m, or to the end of the road if less than 75 m away and the length of the shuttle lane does not exceed 60 m, or
  - road users have clear visibility of the work area and the opposing approach for a distance greater than 150 m or to the end of the road if less than 150 m away, the traffic volume in both directions is 40 vph or less, the permanent posted speed is 70 km/h or less, and the length of the shuttle lane is 60 m or less.

- Where active traffic control is not provided (working under natural give and take, or where GIVE WAY and ONE LANE signs are in operation), the taper should be at 45 degrees on both the approach and departure sides of the work area and the remaining open single lane section should have a maximum width of 3.5 m. See Figure 5.4.4(a) for an example layout.
- Single-lane section lengths should not exceed the recommended ~~be a~~ maximum distance as shown in Table 5.4.
- Contingency planning for longer than expected queue lengths should be included as part of the TGS design.
- End of queue protection measures must be provided in accordance with Section 4.8.3.

Table 5.4 – Recommended maximum length of operation under shuttle flow

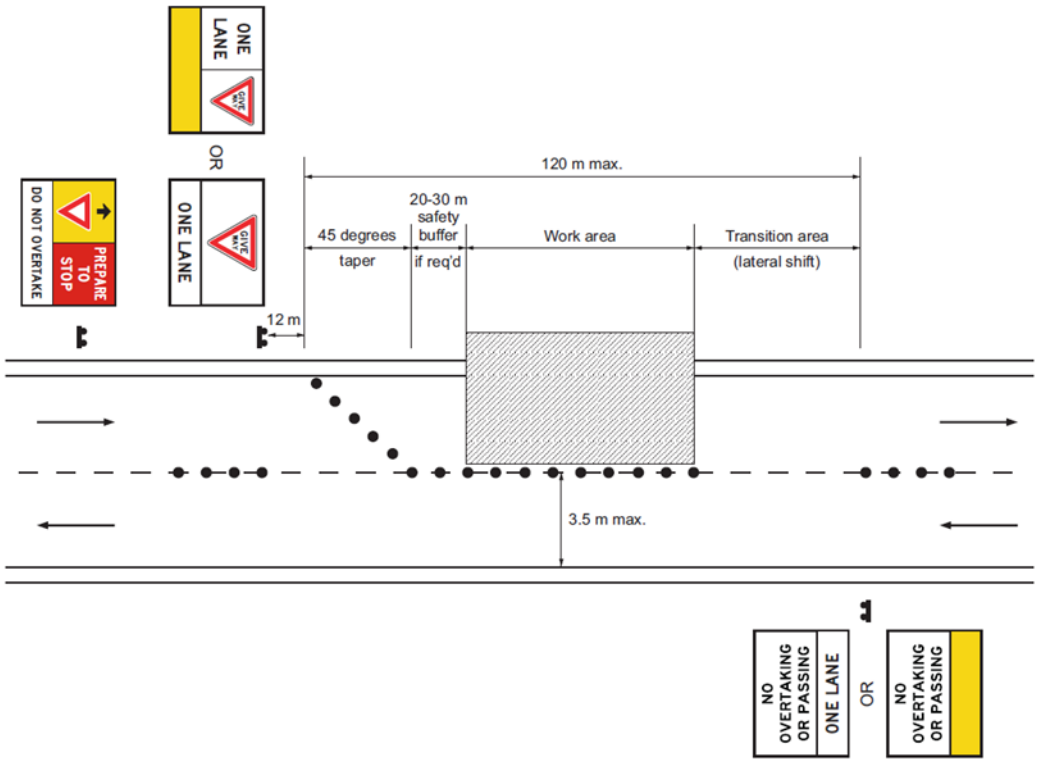
Traffic volume (Total for both directions) (vph)	Length of single lane section (m)
701–800	70
601–700	100
501–600	150
401–500	250
351–400	400
301–350	600
≤ 300	800

The volumes in Table 5.4 have been determined to allow a quick analysis without referring to a traffic engineering professional. Additional traffic engineering input is required to support a longer length of single-lane operation.

Generally, when using Table 5.4, and where the lengths are within the maximum limits, single-lane operation using active control by portable traffic control devices or traffic controllers will lead to a relatively short and consistent or stable queue length; however, additional traffic engineering input and considerations (risk assessments) are required to support longer lengths of single-lane operation which will generally lead to longer maximum queue lengths and queue lengths that are not easily managed, or are variable and unstable. ~~Contingency planning for longer than expected or continually growing queue lengths shall be included as part of the TGS design. End-of-queue protection measures (see Section 4.8.3) shall be considered.~~

Figure 5.4.4(a) does not include all traffic control devices required and is not to be used as a TGS diagram.

Figure 5.4.4(a) – Example layout using GIVE WAY signs



When GIVE WAY and ONE LANE signs are provided at one end of the shuttle lane (in accordance with this section), and advance warning of this arrangement is required, the Give Way Sign Ahead sign (W3-2 or WM3-2A in a multi-message sign assembly – see Figure 5.4.4(b) should be used.

Figure 5.4.4(b) – Advance PREPARE TO STOP sign for Give Way control

Entire clause now located in QGTTM to make it easier for the end user to use the document. No longer needing to go back and forth between the QGTTM and AGTTM several times.

Information which was remaining in AGTTM has been relocated to QGTTM and is highlighted blue.

TTM working group and the LGTTM working group have both raised concerns regarding the current approach for duplicating speed related signs, which results in a lot of signs and devices on low volume roads. Current requirements for speed limit AHEAD and speed limit signs is limited to higher speed roads by the permanent speed limit, however this change also allows for a volume threshold to be applied.

Relaxed requirement for duplicating Speed Limit AHEAD signs on low volume roads.

Relaxed requirement for duplicating Speed Restriction signs at the start of a temporary speed zone on low volume roads.

Added 60km/h buffer zone into Table 5.5 conditions.

See changes highlighted yellow following.

5.5 Safe traffic speed

5.5.1 Temporary speed limits

Difference

Replace the entire Section 5.5.1 with the following:

> Temporary speed limits can be used to regulate the speed of traffic due to roadworks, temporary hazards, emergencies or special events. Authorisation from the relevant road infrastructure manager needs to be obtained prior to works commencing, normally during the planning stage (TMP phase). Details of the temporary speed limit, approximate length of the temporary speed zone (e.g. temporary speed limit of 60 km/h for 150 m) and associated roadwork signing is submitted with the TMP. If alternative means of traffic control are adequate, there is no need to implement additional temporary speed zones.
>
> Temporary speed limits are implemented for workplace safety and traffic safety requirements to protect workers from oncoming or passing traffic and road users from hazards within the static work site. To meet specified safe workplace requirements, including the protection of traffic controllers, reduction in traffic speeds to either 80 km/h, 60 km/h or 40 km/h must be required.

If the specified temporary speed limit is lower for site workplace safety requirements than traffic safety requirements, the temporary speed limit for workplace safety requirements takes precedence (e.g. high level of hazard for workers on foot in a worksite with reduced visibility – the required temporary speed limit is 40km/h or less).

Temporary speed zone conditions and lengths are outlined in Table 5.5.

The primary objective of temporary speed zones is to ensure that all workers operating in and around the work zone are safe. The secondary objective is to ensure the application of temporary speed zones are safe and convenient for road users. Sufficient warning of changes in speed limit due to surface condition and work zone layouts need to be communicated to all road users.

Where a decision has been made to create a temporary speed limit, the following apply:

- The temporary speed limit should be self-enforcing or will be enforced.
- The temporary speed limit must be realistic and reflect the condition of the worksite in real time. This will reduce the risk of road users ignoring the speed limit.
- The temporary speed limit must be obvious to all road users.
- The temporary speed limit should encourage uniform speed of travel.
- Speeds should be low enough to allow road users time to react to signs, directions, traffic control or unusual events.
- The temporary speed limit must not be so low that a significant number of road users disregard it.
- Temporary speed limits may be a compromise where conditions vary over a length of road.
- The length of the temporary speed zone should be as shown in Table 5.5.
- The speed limit applied to the zone must not exceed the maximum safe speed of travel at which traffic can safely traverse the site. The maximum safe speed of travel depends on a number of factors including:
  - number and type of vehicles
  - number of pedestrians / cyclists
  - type of works undertaken
  - extent of the works

- road characteristics
- number of incidences, conflicts or hazards on the road. Where the frequency of incidents, conflicts or hazards on a road increase, the maximum safe speed of travel needs to be reviewed.

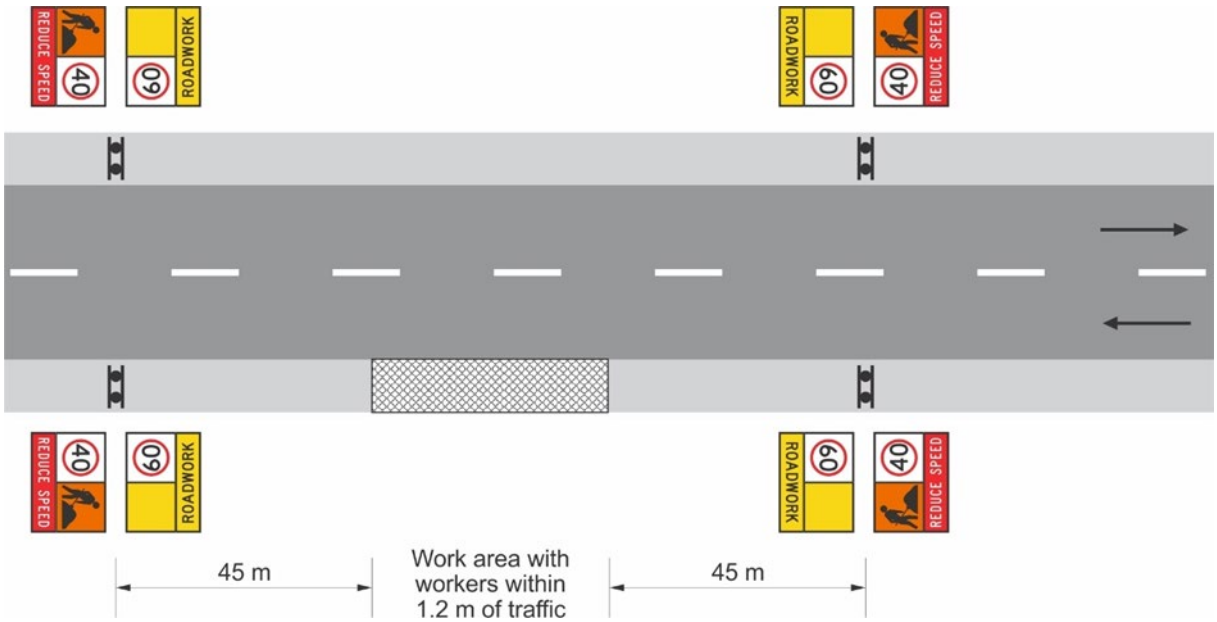
The Designer should ensure reduced speed zones are as short as possible and that they are not commenced so far prior to the hazard (or workers) that drivers start to disregard them and speed up. There is a balance between ensuring drivers can reduce speed prior to a hazard and not making that distance so long that compliance becomes an issue.

Speed limits implemented to meet specified safe workplace requirements for the protection of workers in an active work area should commence a minimum of a single sign spacing in advance of the active work area. The 200 m zone requirements past a speed limit reduction apply when determining this sign spacing value.

When considering the extent of the reduced speed beyond the work area, the guidance in Section 5.12 should be used, while remembering that offset speed zone requirements and the need to reduce traffic speeds past the work area for the other direction of travel may dictate the speed sign locations.

Figure 5.5.1 illustrates an example of a speed reduction arrangement for road worker safety on a 60 km/h road where road workers will be working within 1.2 m of the traffic lane and the speed past the workers is to be reduced to 40 km/h. The distance in advance of the workers for the start of the 40 km/h reduced speed zone is based on appropriate sign spacing in Table 2.2. As this spacing is within 200 m of a speed limit change (to 40 km/h), the speed value to use in Table 2.2 is 60 km/h which equates to a distance of 45 m. This Figure does not include all traffic control devices required and is not to be used as a TGS diagram.

Figure 5.5.1 – Speed limit sign location for road worker safety



Selecting the speed limit

Selecting the temporary speed limit at works is dependent on workplace safety and traffic safety requirements. Temporary speed limits are a viable option for any of the following examples:

- shuttle flow
- contraflow
- temporary stopping
- temporary traffic signals and PTCD
- the number of lanes is reduced
- merges
- narrow lanes
- protecting traffic controllers
- visibility is restricted (e.g. dust, work equipment, construction materials, abnormal weather conditions)
- limited clearance between road workers or equipment and moving traffic
- the alignment or road surface is below standard
- loose material or stones
- works can be damaged by higher speeds
- emergencies (e.g. flooding, slips, crashes, fire)
- good technical reasons (e.g. the road might otherwise collapse).

A guide to selecting the required temporary speed zone is provided in Table 5.5.

~~In subsection 'Selecting the speed limit', replace Table 5.5 with the following.~~

Table 5.5 – Recommended length of temporary speed zone

Temporary speed limit (km/h)	Length of zone (m)	Conditions
<40	100–200	• unusually high level of hazard for workers on foot or road users (pedestrians or cyclists) • it is impractical to separate pedestrians or cyclists from vehicular traffic in the work area
40	100 (minimum)–500 (maximum)*	• workers on foot within 1.2 m of traffic with no physical barrier • structural danger to bridges • high level of hazard for workers on foot or road users (pedestrians or cyclists)
60	150 (minimum)	• workers on foot between 1.2 m and 3 m of traffic or plant within 3 m of traffic with no physical barrier (that is, road safety barrier) • on approach to the traffic controller or PTCD • 60 km/h buffer zone • reduced visibility (for example, dust or smoke) • reduced standard alignment • degraded pavement surface • newly laid bituminous seal
80	500 (minimum)	• workers on foot or plant between 3 m and 6 m of traffic with no physical barrier • disturbance to alignment or pavement surface
80 (buffer)	300 (minimum)	• for advance warning of a 40 km/h or 60 km/h when speed is 100 km/h or more

*Subject to a risk assessment, the maximum length for a 40 km/h temporary speed limit may be extended to 1000 m.

Designing the speed limit

Speed limits may be reduced depending on the size of the reduction by one or a combination of the following:

- a speed limit sign
- a speed limit of intermediate value or a buffer zone
- a speed limit AHEAD sign.

Speed limit reductions must be implemented as provided in Table 5.6.

Table 5.6: Method for reducing speed limit

Speed limit reduction	Method for reducing speed limit	Recommended applications	Alternative applications
10	Speed limit sign	60 – 50 50 – 40 40 – 30	
20	Speed limit sign or Speed limit AHEAD* (alternative)	100 – 80 80 – 60 60 – 40	100 – 80 AHEAD – 80* 80 – 60 AHEAD – 60* 60 – 40 AHEAD – 40*
30	Speed limit AHEAD or Speed limit sign or Speed limit signs (alternative)	110 – 80 AHEAD – 80 110 – 80 90 – 60 AHEAD – 60 90 – 60 70 – 40 AHEAD – 40 70 – 40	110 – 100 – 80 90 – 80 – 60 70 – 60 – 40
40	Speed limit AHEAD or Speed limit signs	100 – 80 – 60 100 – 60 AHEAD – 60 80 – 60 – 40 80 – 40 AHEAD – 40	
50	Speed limit signs and/or Speed limit AHEAD	110 – 80 – 60 110 – 80 AHEAD – 80 – 60 100 – 80 – 50 100 – 80 – 50 AHEAD – 50 90 – 60 – 40 90 – 60 AHEAD – 60 – 40	110 – 80 – 60 AHEAD – 60 100 – 80 AHEAD – 80 – 50
60	Speed limit signs and/or Speed limit AHEAD	110 – 80 – 60 – 50 110 – 80 AHEAD – 80 – 50 110 – 80 – 50 AHEAD – 50 100 – 80 – 60 – 40 100 – 60 AHEAD – 60 – 40 100 – 80 – 40 AHEAD – 40	110 – 80 – 50
70	Speed limit signs and/or Speed limit AHEAD	110 – 80 – 60 – 40 110 – 80 AHEAD – 80 – 60 – 40 110 – 80 – 40 AHEAD – 40	110 – 80 – 60 – 40 AHEAD – 40* 110 – 80 – 60 AHEAD – 60 – 40*

*May be used where additional advance warning of speed limit reduction is required

Where the need for a temporary speed limit occurs part way into a worksite, the temporary speed zone must be started at that point rather than the start of the worksite. For example, the short term need to localise a speed limit and accommodate workers on foot less than 1.2 m clear of a traffic. More than one localised speed zone is permitted within one worksite if the minimum distance between them is equal to the length of zone for the higher speed limit shown in Table 5.5.

Temporary speed zones that result in different speed limits for each direction of travel at a particular location (offset speed zones) may be used in the following conditions:

- on divided roads where works affect road users on one side of the median only
- on multilane undivided two-way roads that meet all of the following:
  - more than one lane in the same direction of travel past the worksite
  - works in the left lane and/or clear of the road
  - conditions necessitating the temporary speed limit are confined to one direction of travel only
  - there are no intersections or property access requirements within the temporary speed zone.
- where a speed buffer zone is provided. For example, advance warning of a 60 km/h speed limit is provided in an 80 km/h buffer zone, when the original speed was 100 km/h. This buffer zone speed limit is not needed for road users leaving the temporary speed zone because the buffer does not apply to the opposite direction of travel. The offset speed zone will only apply in the speed zone buffer area and not the whole worksite.

~~Replace the following:~~

~~Temporary speed zones are communicated clearly to road users with the following traffic control devices in order for them to recognise the need to adjust their speed:~~

- ~~a Speed Limit AHEAD sign is located a distance double the speed in advance of the Speed Restriction sign~~
- ~~a Supplementary ROAD WORK and Speed Restriction signs at the start of temporary speed zone. Speed Restriction signs are to be placed on both sides of the roadway where practicable~~
- ~~a Speed Restriction sign (indicating the speed limit past the termination area) or END Speed Limit sign to terminate the temporary speed zone on both sides of the roadway where practicable. An END ROADWORK sign can be placed beyond the temporary speed zone or concurrent with a Speed Limit sign or the END Speed Limit sign on both sides of the roadway where practicable.~~

~~with:~~

Temporary speed zones are communicated clearly to road users with the following traffic control devices in order for them to recognise the need to adjust their speed:

- a Speed Limit AHEAD sign must be located a distance double the speed in advance of the Speed Restriction sign and must be located on the left-hand side of the road and should be duplicated (placed on both sides of the roadway) where practicable on roads with an annual average daily traffic (total vehicle count in both directions of travel per day) of over 500 vehicles per day. Refer to Table 5.6 – *Methods for reducing speed limit* for the use of the Speed Limit AHEAD sign
- a Supplementary ROAD WORK and Speed Restriction sign or a Speed Restriction sign in a multi message panel at the start of temporary speed zone as follows:
  - Speed Restriction signs must be placed on the left-hand side of the road at the start of a temporary speed zone (either a speed reduction or speed increase).
  - Speed Restriction signs should be duplicated (also placed on the right-hand side of the road) where practicable in the following situations:
    - At the start of a reduced temporary speed zone on a road with an annual average daily traffic (total vehicle count in both directions of travel per day) of over 500 vehicles per day and a permanent posted speed limit greater than 60 km/h, or

        - On a multi-lane road (includes divided, undivided, one-way or ramps).
    - In addition to the above, any Speed Restriction sign may be duplicated (also placed on the right-hand side of the road).
- an END Speed Limit sign to terminate the temporary speed zone must be placed as per the requirements for a Speed Restriction sign above. In this case, the speed limit beyond the END Speed Limit sign will revert to the default speed limit.
- an END ROADWORK sign may be placed beyond the termination of the temporary speed zone or concurrent with a Speed Restriction sign or the END Speed Limit sign.
- If sign duplication is not practicable or possible (due to for example, vegetation, safety barrier, inadequate width), the designer must document an alternative to ensure all road users are able to see the speed limit signs (refer to Section 2.5.3 for options).

~~Replace the following paragraph on repeater speed limit signs:~~

> ~~Repeater signs must be used to confirm and remind users of the speed limit where the zone is long and there are locations which could seem like the temporary speed limit no longer applies (e.g. between work areas in an extended worksite), or to advise road users entering the temporary speed limit. Repeater signs must be placed on the left-hand side of the road at a maximum spacing of 500 m and on both sides on multilane roads.~~

~~with:~~

> Repeater speed limit signs must be used to confirm and remind users of the speed limit where the zone is long and there are locations which could seem like the temporary speed limit no longer applies (for example, between work areas in an extended worksite), or to advise road users entering the temporary speed limit. Repeater speed limit signs may be used as required above, and must be placed on the left-hand side of the road at a maximum spacing of 500 m. On multi-lane road (including divided, undivided, one-way or ramps), repeater speed limit signs should also be placed at a maximum spacing of 500 m on the right-hand side of the roadway where practicable.

~~Replace the following:~~

~~At the end of the temporary speed zone, the following requirements apply:~~

- ~~A speed sign must be used to exit the temporary zone. When using this sign at the end of the roadworks, the ROAD WORK supplementary signs are not to be used in conjunction.~~
- ~~Signs are to be placed on both sides of the carriageway where practicable.~~

~~with:~~

At the end of the temporary speed zone, the following requirements apply:

- Speed Restriction or END speed limit signs must be used to end the temporary zone.
- When using these signs at the end of the roadworks, the ROAD WORK supplementary signs must not be used in conjunction.
- Speed Restriction and END speed limit signs must be placed as per the requirements for a Speed Restriction sign above.

If it is not practicable or possible to terminate the temporary speed limit beyond the temporary speed zone by the above metho

s, the END Speed Limit sign (R4-12) may be used. An example of this is where the default speed limit (typically on rural roads), road surface, alignment or other conditions will not allow the road user to travel safely at that speed. It is a legal requirement that a speed zone is terminated by:

- another regulatory speed control sign or END Speed Limit sign
- other means of traffic regulation imposed by the State.

Operational

The following apply when installing speed signs:

- Any permanent speed signs that contradict the temporary speed limit in the required zone must be covered or removed.
- Any advisory speed signs higher than the temporary speed limit in the required zone must be covered.

~~Replace the third dot point:~~

- ~~Signs shall be placed on both sides of the roadway, where practicable to ensure road users have clear visibility of speed limit signs.~~

~~with~~:

- Speed Restriction signs where required to be duplicated in the **'Designing the speed limit**' section should be placed on both sides of the roadway where practicable to ensure road users have clear visibility of speed limit signs.
- Temporary speed limit signs should be used together with other appropriate devices already required by other site conditions. For example, display temporary speed limit signs used for.
- worksite protection and safety in conjunction with the Workers (symbolic) sign.
- All speed limits related to road worker safety must be removed or covered when road workers, traffic controllers or plant are not on site.
- Speed limits when road workers, traffic controllers and plant are not on site should be determined with consideration of the safe passage of road users. If no hazard to road users exists, the speed limit should be returned to the permanently posted speed limit.
- Any gantries within the worksite with Variable Speed Limit or Lane Control signs must be programmed to display the temporary speed limit or turned off. Check the TMP for guidance on other large permanent signs and variable speed limit signs.
- A record of dates and times temporary speed limits are in operation must be kept, including any changes made, the name of personnel installing, changing or removing signs (see Section 2.5.3).
- Workplace safety must be considered during set-up and dismantling of signs.

Temporary speed limits should only apply while the condition that makes them necessary exists, so remove temporary speed limit signs as soon as the necessity passes. For further details on signs see Section 2.5.3.

Guidance on the use of temporary variable speed limit signs in construction and maintenance work areas on motorways is given in the *Guideline – Traffic Management at Works on Roads*.

Entire clause now located in QGTTM to make it easier for the end user to use the document. No longer needing to go back and forth between the QGTTM and AGTTM several times.

Information which was remaining in AGTTM has been relocated to QGTTM and is highlighted blue.

See changes highlighted yellow following.

5.10 Traffic control

5.10.2 Traffic controllers

Difference

Replace the entire Section 5.10.2 with the following:

~~Replace:~~

> ~~Worksites are hazardous areas so use manual traffic control only where PTCDs are insufficient to provide the safety, capacity and efficiency required for effective traffic control. When traffic controllers are used, traffic controllers cannot direct a road user to contradict upcoming intersection signals. Traffic controllers are to coordinate activities with operating signals. If traffic controllers are operating within close proximity to a signalised intersection and the lights are flashing yellow or are off, a traffic controller must only control one lane and the approach to this intersection must be reduced to one lane of traffic. Where works cause delays to traffic flow or a side road intersects the worksite, do not use an automated PTCD, a traffic controller is required. The following requirements and recommendations apply when using traffic controllers:~~

~~with~~

> Worksites are hazardous areas so use manual traffic control only where PTCDs are insufficient to provide the safety, capacity and efficiency required for effective traffic control. When traffic controllers are used, traffic controllers cannot direct a road user to contradict upcoming intersection signals. Traffic controllers are to coordinate activities with operating signals. If traffic controllers are operating within close proximity to a signalised intersection and the lights are flashing yellow or are off, a traffic controller must only control one lane and the approach to this intersection must be reduced to one lane of traffic. Where works cause delays to traffic flow, or a side road intersects the worksite, do not use an automated PTCD, a

traffic controller using a STOP/SLOW bat or controlling a PTCD is required. The following requirements and recommendations apply when using traffic controllers:

- Only competent persons with appropriate certification must be appointed as a traffic controller (see AGTTM Part 7).
- Speed must be 60 km/h maximum. Provide a temporary speed limit of 60 km/h or less on the approach to a traffic controller if the speed is higher (see Section 5.5.1).
- An escape route must be identified for each traffic controller from their traffic control position.
- Traffic controllers must be positioned a clear sight distance from approaching road users (see Section 2.5.4) with no obstruction and where they are not obstructing visibility to traffic control devices (i.e. signs). No obstruction should be located in the area between the traffic controller and the end of the line of four cones.
- Ensure that a work vehicle is not parked in a way that impacts the visibility of the traffic controller or, limits the traffic controller's escape route or, is parked between the traffic controller and the taper.
- Ensure that traffic controllers are visible at all times of the day, particularly at dawn, dusk, against low morning or evening sun, when in the shade on a sunny day or working in dusty conditions.

~~Replace the following dot point:~~

- ~~Ensure that traffic controllers are well illuminated at night. Where required, provide additional lighting.~~

~~with~~

- The traffic control station and the area where traffic controllers are operating PTCDs from must be well illuminated at night. Where required, provide additional lighting. See Section 6.7 *Night works* for greater detail about working at night.
- Relieve traffic controllers from traffic controller duties at least every 2 hours for at least 15 minutes.
- If cone tapers are used, position the traffic controller 6 m in front of the taper on the left-hand shoulder or edge of the road and facing approaching traffic.
- Place four traffic cones spaced 4 m apart, on the centre-line 6 m in front of the traffic controller position.
- If there is a queue, traffic controllers can move to the driver's side when safe to do so to remain visible to all road users.

- Under no circumstances are traffic controllers to stand or operate unprotected in a lane carrying traffic.
- Traffic controllers are to only communicate with a road user once the vehicle has stopped and is safe to do so.

~~Replace the following dot point:~~

- ~~Ensure a single traffic controller never controls more than one lane of traffic or more than one approach. A single traffic controller can operate two PTSS at one time in special circumstances.~~

~~with~~

- A single traffic controller must never control more than one lane of traffic or more than one approach when using a STOP/SLOW bat or a PTCD. This may only be varied where a traffic controller is using a PTCD which is capable of alternative arrangements and both the device and manner of operation is approved by the department. See Section 2.6.2 of AGTTM Part 7 for additional requirements and considerations when designing and using PTCDs for traffic control.
- Provide a traffic controller at intersections to guide road users entering from a side road.
- Some intersections require three or more traffic controllers. Where multiple traffic controllers are used they are required to:
  - ensure that road users are not seeing conflicting message from other traffic controllers at different locations of the worksite
  - be in continuous radio contact with each other when they are not visible to each other.

For detailed guidance on traffic controllers see AGTTM Part 7.

Provided updated guidance for several pedestrian and footpath related TTM considerations.

Clarified information on providing alternative paths for pedestrians.

Added information on the surfacing requirements for footpaths or alternative routes for pedestrians.

Added a time consideration on the selection of an alternative route and surface type.

Added consideration for tactile signs.

5.13 Vulnerable Road Users

5.13.1 Pedestrians

Difference

Replace the two dot points:

- Desirably, if footpaths or pedestrian crossings have been partially closed or temporarily relocated, a temporary footpath should be provided with minimum width of 1.8 m to allow for all pedestrians including those with mobility aids or on the same scale and to the same width as any facilities for pedestrian that existed prior to the works. This width should also be applied to any temporary ramps (e.g. kerb ramps). If these widths are not practicable, alternative routes must be provided with a firm smooth surface and no trip hazards in the following order of preference:
    1. on the side of a road reserve away from traffic
    2. between the work area and road but not in a traffic lane
    3. onto the road either in a lane used for parking or a delineated and protected section of an existing traffic lane
    4. across the road to a footpath on the opposite side with delineation at crossing points and kerb ramps. Consideration is required for persons with impaired vision, mobility, hearing or cognitive limitations. Only use this option if an appropriate crossing facility can be provided (see Austroads Pedestrian Facility Selection Tool).
    5. a traffic controller to safely guide pedestrians around the operation. Only use this option if there is no safe temporary path available.
- Appropriate surfacing must be provided for prams, strollers, wheelchairs or any other mobility aids.

With these three dot points:

- Desirably, if footpaths or pedestrian crossings have been partially closed or temporarily relocated, a temporary footpath should be provided with minimum width of 1.8 m to allow for all pedestrians including those with mobility aids or on the same scale and to the same width as any facilities for pedestrian that existed prior to the works. This width should also be applied to any temporary ramps (e.g. kerb ramps). At localised constraints an absolute minimum width of 1m may be provided, where opposing pedestrian are able to recognise the short constraint and pass at wider areas. If these widths are not practicable, alternative routes should be provided in the following order of preference:
    1. on the side of a road reserve away from traffic
    2. between the work area and road but not in a traffic lane
    3. onto the road either in a lane used for parking or a delineated and protected section of an existing traffic lane
    4. across the road to a footpath on the opposite side with delineation at crossing points and kerb ramps. Consideration is required for persons with impaired vision, mobility, hearing or cognitive limitations. Only use this option if an appropriate crossing facility can be provided (see Austroads Pedestrian Facility Selection Tool).
    5. a traffic controller to safely guide pedestrians around the operation. Only use this option if there is no safe temporary path available.
- Appropriate surfacing with a firm even surface and no trip hazards should be provided to footpaths or alternative routes to cater for prams, strollers, wheelchairs or any other mobility aids. Surfacing should be no worse than the existing path and should be suitable for use in all weather conditions and should not deteriorate or form ruts or be damaged from repeated use.
- The length of time a temporary footpath is required, would also need to be considered when selecting an alternative route and surface type.

Addition

Where pedestrians with vision impairment are expected or existing signs with tactile elements are provided at a location or in an area, refer to AS1428.4.2 for consideration of tactile requirements for any temporary signs required.

New Appendix A added for Temporarily closing or restricting access to roads.

This Appendix outlines the options available for temporarily closing or restricting access to roads. The available options will vary based on the road owner (state-controlled or other road owner including local government).

In most cases the need to temporarily close or restrict access to roads will be in response to natural disasters such as flooding, bushfire and other hazardous events, however the same approach may be taken when closing or restricting access to roads for planned road works.

Appendix A: Temporarily closing or restricting access to roads

A.1 General

New

This Appendix will outline the options available for temporarily closing or restricting access to roads. The available options will vary based on the road owner (state-controlled or other road owner including local government).

In most cases the need to temporarily close or restrict access to roads will be in response to natural disasters such as flooding, bushfire and other hazardous events, however the same approach may be taken when closing or restricting access to roads for planned road works.

A.2 Closing or restricting access on a state-controlled road only

New

A state-controlled road may be temporarily closed or have access restricted as per the provisions of the *Transport Infrastructure Act 1994* (TIA) Section 46, Temporary restrictions on use of state-controlled roads (SCR). A restricted road use notice (RRUN) is used to advise the road user or other persons of how the SCR is restricted and the penalty for driving past the RRUN. The TIA provisions are enforceable under the Act and only apply to state-controlled roads.

The signs in Figures A.2.1, A.2.2 and A.2.3 below are RRUN examples of the multi-message sign arrangements conforming to the requirements of the TIA and the MUTCD. The combination of the black on white messages in the top two panels that include the condition of the closure or restriction and state the penalty – are required for enforcement. They can either be in the one sign or as a multi-message arrangement with the DUE TO FLOODING black on yellow message and the LOCAL ACCESS PERMITS EXCEPTED black on white message being complementary to the enforcement sign but are not required for enforcement.

Barrier boards are required each side of a road closed arrangement (see Figure A.2.2) to completely block access to the roadway at the site of any road closure.

It is important where access to a road is restricted that the start and end points of the restriction are identified by RRUN. The end of the road restriction is also identified by a RRUN which terminates the restriction (see Figure A.2.3). The end of a temporary road closure is not required as the road would be closed for traffic trying to access at the opposite end by a RRUN facing them.

Written approval can be provided by the department to allow a road user to drive past a RRUN for a single, multi-trip or for those performing roles such as transport inspectors. Application (in the form of an approval to drive past a RRUN) is typically made to the Transport and Main Roads' district office and is considered by authorised officers, with the outcome provided to the applicant as soon as practical. Where an outcome is approved certain conditions may be applied, including an assumption of risk by the applicant. Signs at temporary restrictions may indicate LOCAL ACCESS PERMITS EXCEPTED which refers to those that have been issued with an approval to drive past a restricted road use notice. However, where the approval has been issued and the signage does not include such statement, it does not preclude the road user from relying on the approval.

Figure A.2.1 – Example sign arrangements for closing a road

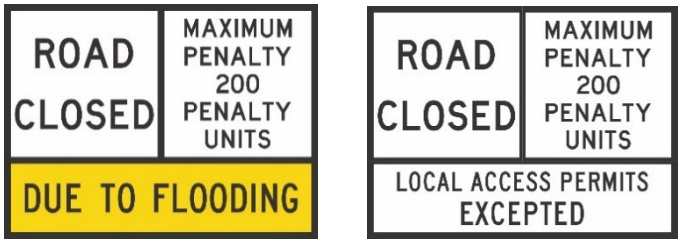


Figure A.2.2 – Example arrangement for closing a road

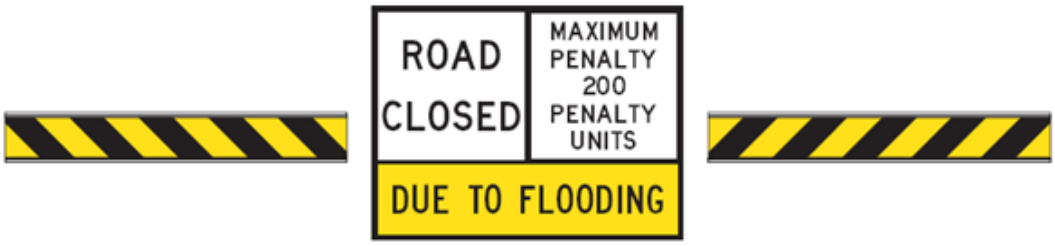
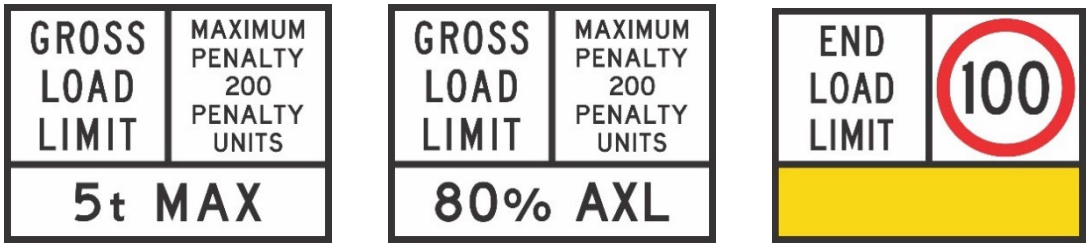


Figure A.2.3 – Example sign arrangements for restricting access to a road and ending the restriction



A.3 Closing a road

New

Section A.2 is specific to state-controlled roads only, however there are a few signing options for the temporary closure of any road (including a state-controlled road). A key difference in the signing options is whether and how the temporary road closure is to be enforced.

In practice, while the ROAD CLOSED message may be enforced using the contravention of an official traffic sign as an offence provision in Section 74 of the *Transport Operations (Road Use Management) Act 1995*, this is a complicated process with a court appearance as a requirement and is not the preferred method of enforcement of a ROAD CLOSED message.

The preferred method of enforcing a ROAD CLOSED message is to install a NO ENTRY regulatory sign with this arrangement and enforce the NO ENTRY sign in accordance with the provisions of Section 100 of the *Transport Operations (Road Use Management—Road Rules) Regulation 2009*.

A NO ENTRY sign is enforceable without the need for other supporting signage when closing a road, however the supporting signs should be used wherever possible.

A range of exceptions apply for a road user to drive past a NO ENTRY SIGN and typically are reserved for drivers of police vehicles and drivers of emergency vehicles or transport inspectors (inspecting the road for damage). Other exemptions for a road user to drive past a NO ENTRY SIGN may be applied through the inclusion of an EXCEPTED message on a sign with the NO ENTRY sign.

Figure A.3.1 provides example road closed multi-message arrangements with the DUE TO FLOODING black on yellow message and the LOCAL ACCESS PERMITS EXCEPTED black on white message being complementary to the enforcement sign but are not required for enforcement.

Barrier boards are required each side of a road closed arrangement (see Figure A.3.3) to completely block access to the roadway at the site of any road closure.

Figure A.3.1 – Example sign arrangements for closing a road

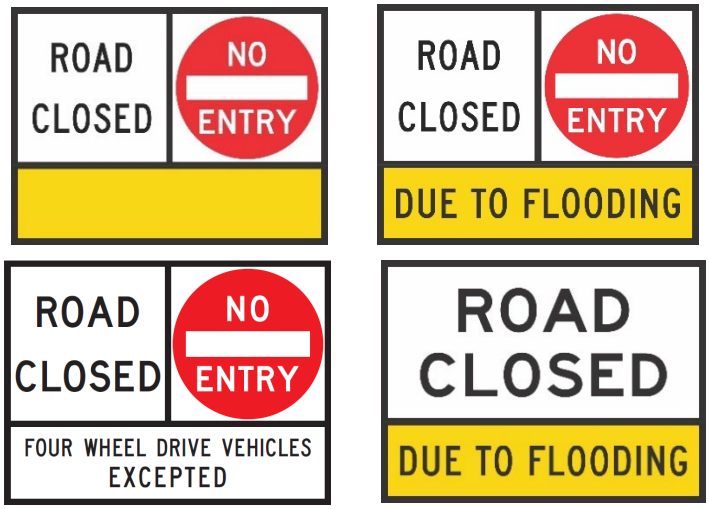


Figure A.3.2 – Example electronic VMS sign arrangements for closing a road

Figure A.3.3 – Example arrangement for closing a road

A.4 Restricting access

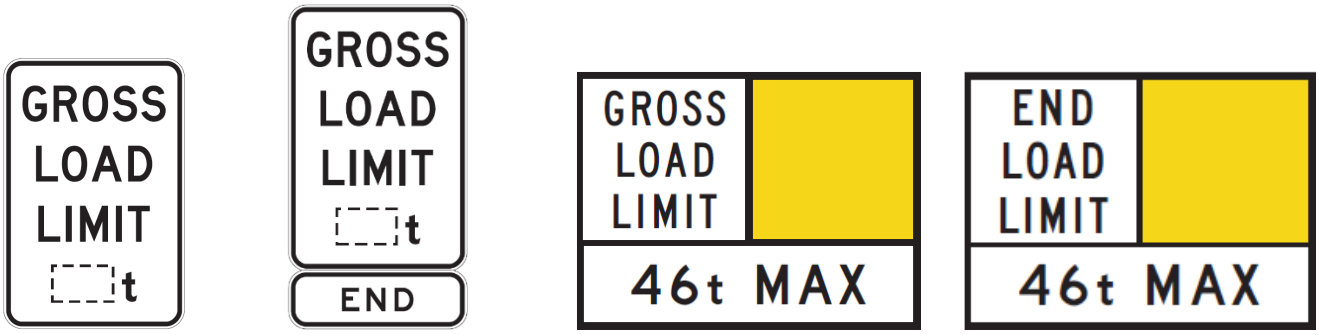
New

Section A.2 is specific to restricting access to a state-controlled road only, however there are standard signs and multi-message panels that may be used to restrict access to any road (including a state-controlled road).

Standard signs may be used to place a permanent or temporary restriction on a road, including a load limit, bridge load limit, height limit or length limit on vehicles using a road. Refer to the Queensland MUTCD Part 2 Section 4 for options.

As an example, the standard GROSS LOAD LIMIT (R6-4) sign may be used to apply a weight limitation on any road. It is important where access to a road is restricted that the start and end points of the restriction are identified. In association with using the R6-4 sign at the start of where the weight limit applies, an END (R7-4) plate is used with the R6-4 sign to indicate where the weight limitation ends. The same arrangements are possible in a multi-message sign, see Figure A.4.1.

Figure A.4.1 – Example signs for restricting access on a road



A.5 Warning of a road closure ahead

New

Advanced warning of a road closure ahead should be provided. Warning signs (see Figure A.5.1 and A.5.2) may be installed at the start of the road section and may be some distance from actual closure point. They should be installed at decision points, where areas exist to turn around the longest vehicles using that stretch of road or where alternative routes are available.

Special arrangements for local traffic to access their properties may need to be considered and the signs adjusted accordingly. Where local traffic is provided access, the ROAD CLOSED signs should be located where the road is closed to all traffic and the ROAD CLOSED AHEAD sign used at the point where only locals should be permitted to travel past.

Where speed limits on approach to a road closure are greater than 60km/h, a 60km/h temporary speed limit must be implemented 300 to 500m in advance of the closure point.

A PREPARE TO STOP message may be used 300 to 500m in advance of the closure point.

Figure A.5.1 – Example sign arrangements for advance warning of a road closure

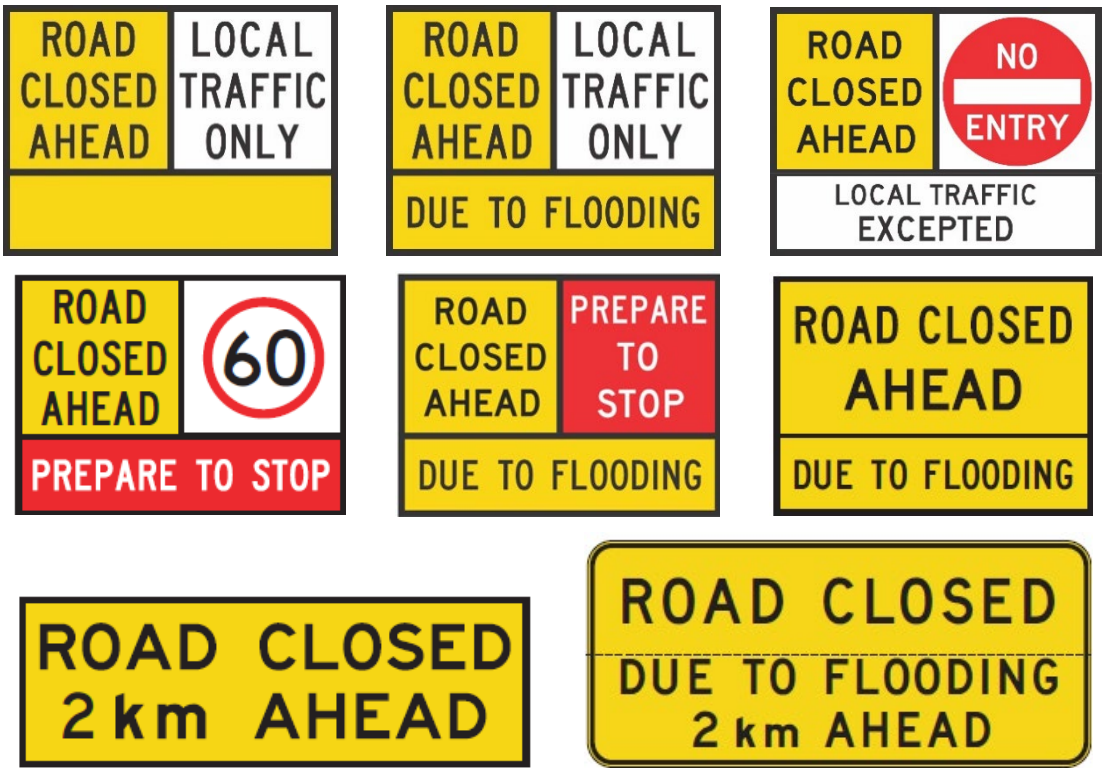


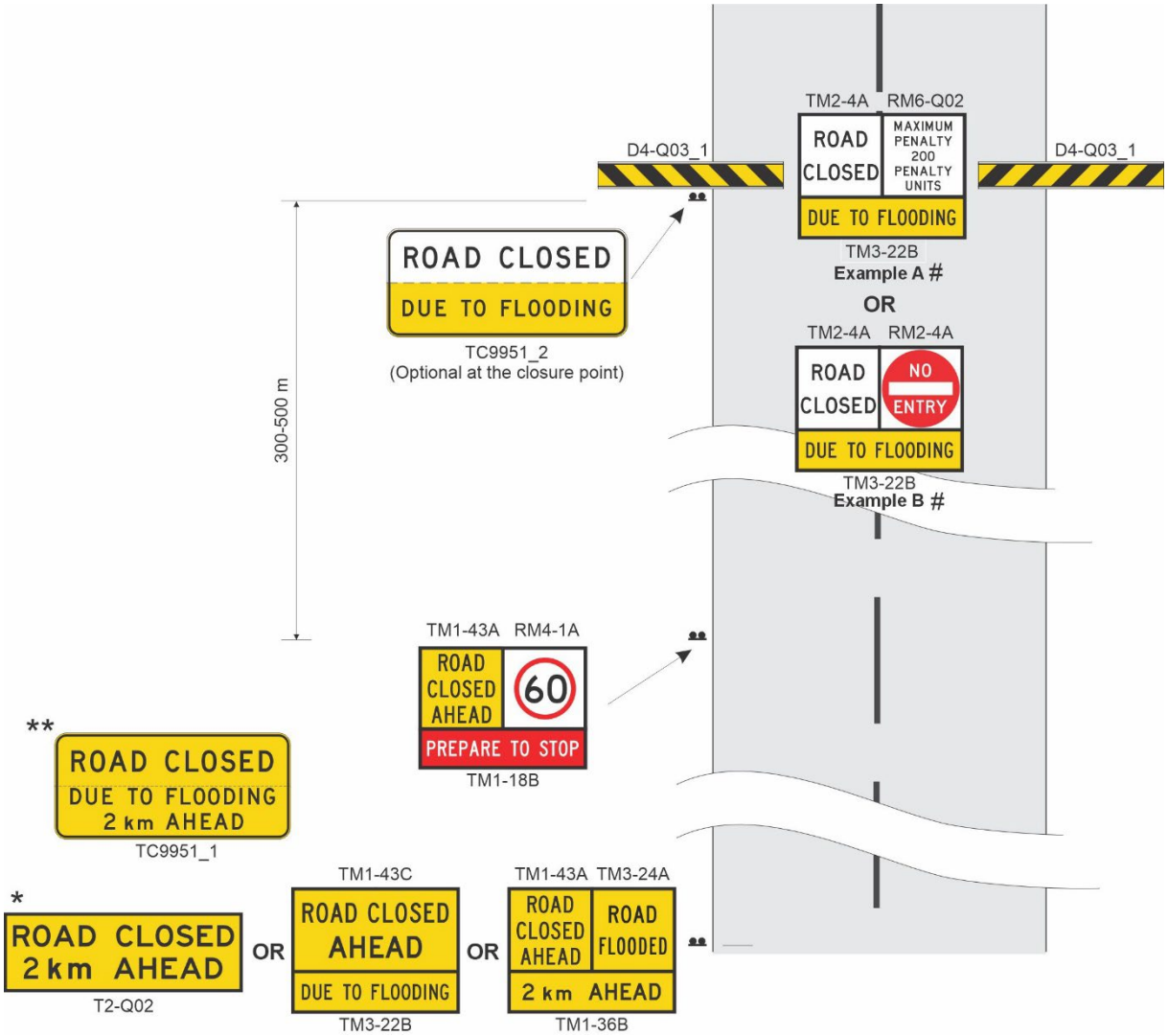
Figure A.5.2 – Example electronic sign arrangements for advance warning of a road closure

A.6 Example layouts

New

The following figures show some example sign arrangement options available for temporarily closing or restricting access to roads. These are examples only and many other sign combinations, arrangements and layouts are possible and will depend on the site-specific circumstances.

Figure A.6.1 – Example sign layout for closing a road due to flooding



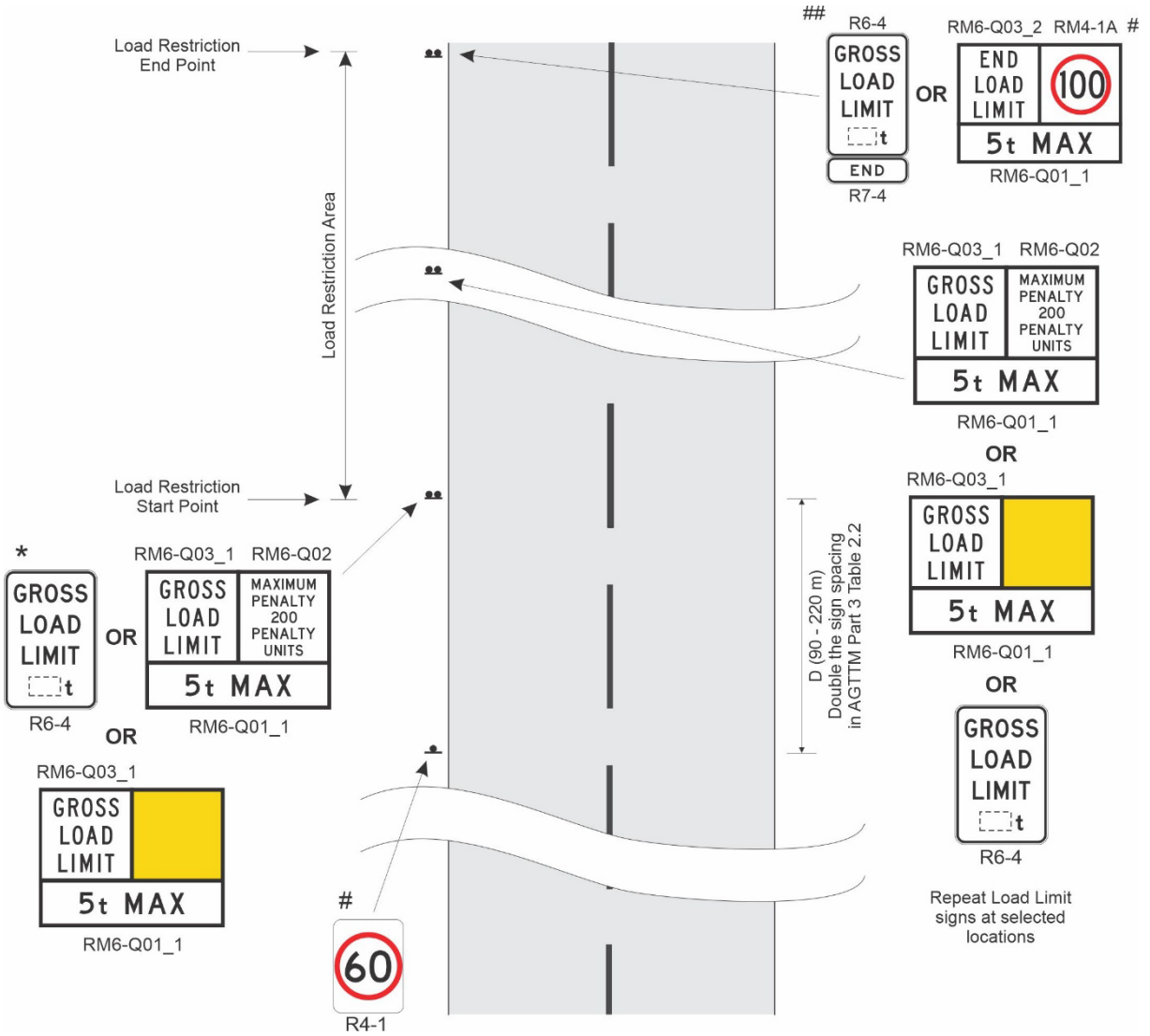
Notes:

1. * May be used if there is a requirement to give more advanced warning.
2. ** TC9951 hinged, permanent sign may be used in known flood locations to provide advance warning.
3. # Examples A or B may be used to close a road; however, Example A can only be used on a state-controlled road.
4. Signs may be installed in advance of the road closure to provide advance warning (1 or 2 km as shown) or may be installed some distance in advance of the closure where an alternative route may be taken.

5. Regional staff should liaise with Transport Enforcement Officers and Queensland Police Service on sign locations prior to installation.

6. Advance signs may be installed at the start of the road section and may be some distance from actual closure point. They should be installed at decision points, where areas exist to turn around the longest vehicles using that stretch of road or alternative routes are available. As an example, refer to page 3 for details.

Figure A.6.2 – Example sign layout for restricting access on a road (weight limit)



Notes:

1. Example of a temporary sign arrangement for a 5 tonne maximum limit. For other load limits refer RM6-Q01.

2. * Either of these signs shall be located at the actual point road restrictions are to apply. MMS arrangement shown may only be used on a state-controlled road.

3. Advance signs may be installed at decision points, where areas exist to turn around the longest vehicles using that stretch of road or alternative routes are available. As an example, refer to Figure A.6.3.

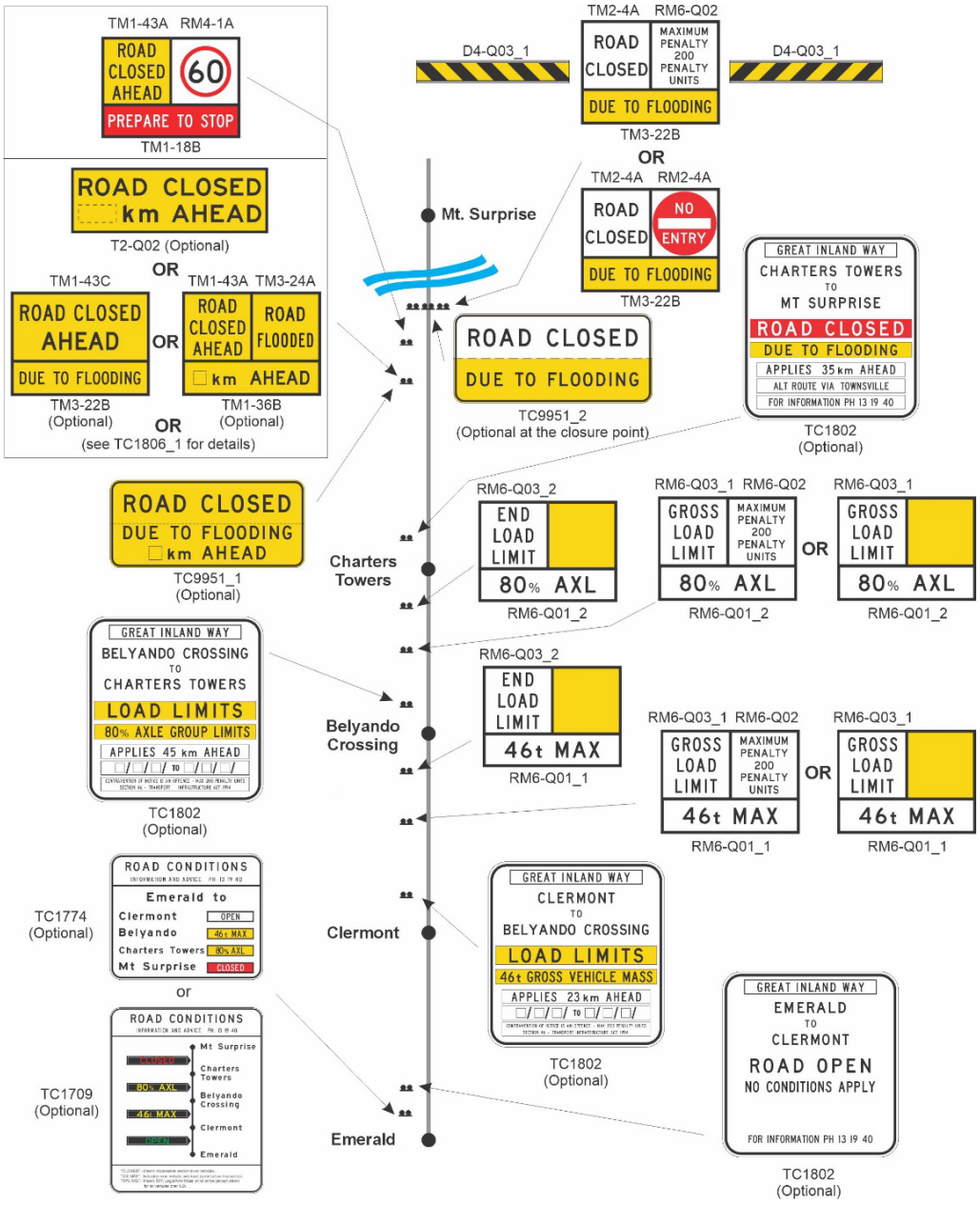
4. # If the speed limit reduction is required in conjunction with a GROSS LOAD LIMIT sign, install R4-1 in advance of the load limit sign. Repeat R4-1 signs over the length of the reduction as required.

5. ## The load restriction area must be terminated with a GROSS LOAD LIMIT sign (R6-4) showing the appropriate weight, combined with an END sign (R7-4) or the multi message frame as shown.

6. Regional staff should liaise with Transport Enforcement Officers and Queensland Police Service on sign locations prior to installation.

7. Load Limit signs should also be installed on the approach to all intersecting roads.

Figure A.6.3 – Example sign layout for a typical route with various restrictions and a closure due to fooding



Notes:

1. Sign TC1802 is not enforceable but may be used as an advance sign indicating a road restriction ahead.

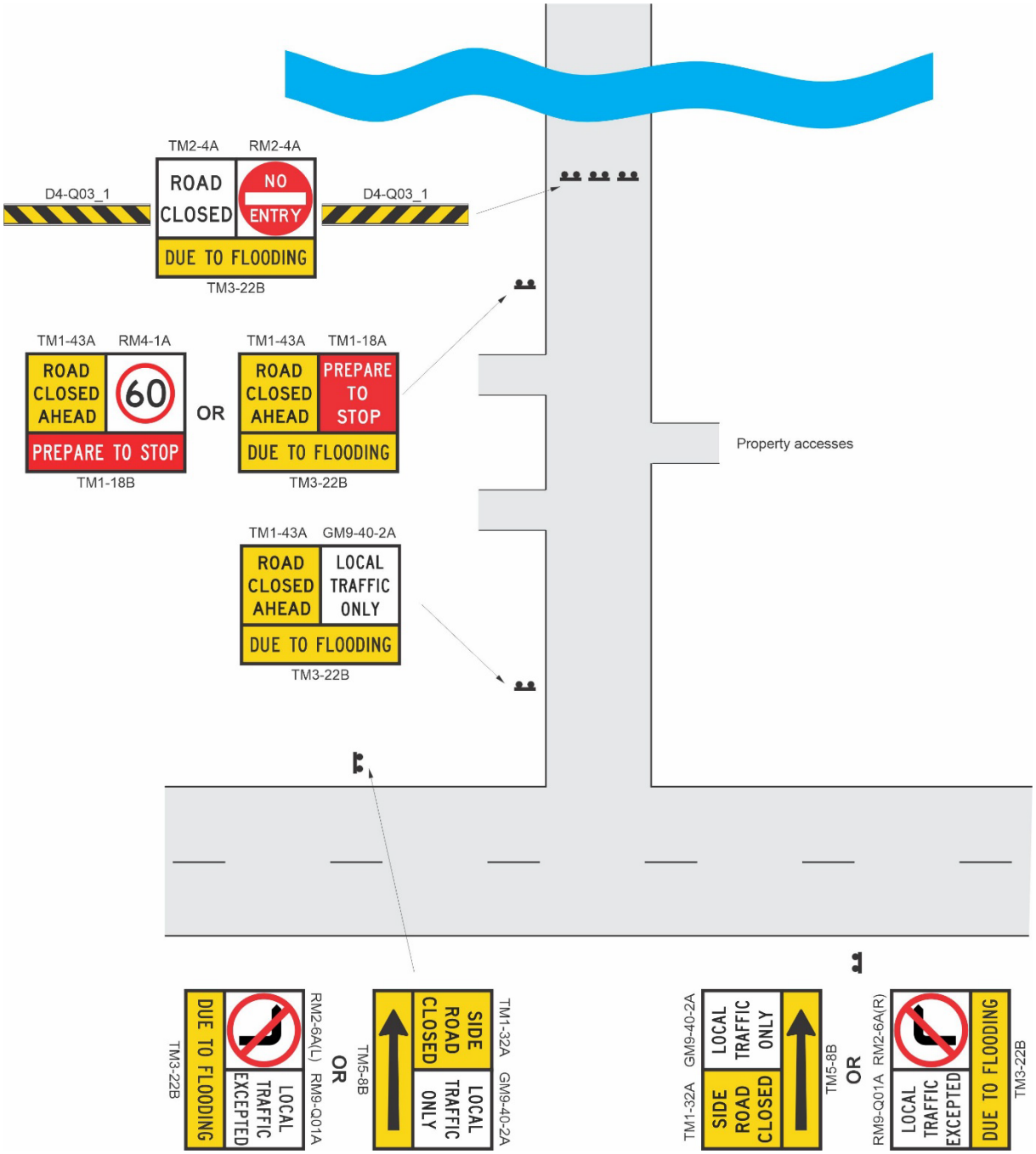
2. The actual point of the closure or restriction must also be signed, and it is this signage that enables enforcement to occur.

3. TC1774 or TC1709 or similar route signs are not enforceable and are advisory traveller information signs used to indicate road restrictions on various sections of the route ahead.

4. Unless signs are combined with a regulatory sign or meet the requirements of the TIA legislation, they are not enforceable.

5. Signs that still meet the requirements of the TIA legislation but provide greater detail may still be used provided any and all the extra detail sections on the sign are completed, accurate and include the penalty requirements.

Figure A.6.4 – Example sign layout for closing a side road due to flooding while allowing locals to access properties .



QGTTM Part 4

Added a new Section on using a combination of different work protection methods within a mobile work site.

2 Design Process

2.5 Essential Design Principles

2.5.8 Combining different works protection methods

New

Combining different works protection methods at the one mobile works site is permitted where the requirements for the different works protection methods are met.

Within a mobile works site, a static work site treatment (QGTTM Part 3) or short-term low-impact works protection methods (QGTTM Part 5) may be used when appropriate and when satisfying the risk assessment and other provisions and criteria of the different works protection methods.

When a static work site treatment (QGTTM Part 3) or short-term low-impact works protection methods (QGTTM Part 5) are used in a mobile works site, the respective requirements of QGTTM Part 3 or Part 5 must be applied.

Added default speed limit values used in Queensland and adjusted terminology for default speed limits to match other TMR documents (built-up area and not in a built-up area).

Added a new Section on using a combination of different work protection methods within a mobile work site.

See changes highlighted yellow following.

3 TGS Design for Mobile Works

3.8 Step 6 – Identify the Operational Procedures to be Followed

3.8.4 Mobile temporary speed zone

Difference

Replace the entire Section 3.8.4 with the following:

To improve the safety of road workers and road users, a temporary speed limit may be applied to mobile works. When mobile works involve workers on foot or using small ride on plant within the lane or within 1.2 m of traffic, a temporary speed limit of 40 km/h must be applied.

The mobile work zone must be established using Speed Restriction signs or Speed Limit AHEAD signs located on vehicles in the mobile works convoy. Temporary speed limits must also be terminated on the vehicles in the mobile convoy. Depending on the works convoy arrangements and speed limit requirements, the work vehicle (or plant item) and the shadow vehicle may be used to display speed limit signs.

On undivided roads where traffic travels past the mobile convoy in both directions, temporary speed limits for the safety of road workers or road users must be applied for both directions of travel. In this case, at a minimum, the speed zone must be implemented between the work and shadow vehicles.

For works where a lead vehicle is not required, at a minimum, the speed zone must be implemented between the work vehicle (or plant item) and the shadow vehicle.

All temporary speed limits require a risk assessment to determine the appropriate speed limit. If a risk assessment indicates an unusually high risk to workers at a particular site, a speed limit lower than 40 km/h may be required.

When the need for the temporary speed limit is no longer applicable, the speed limit should be removed or altered to an applicable value; for example, when a 40 km/h speed zone is implemented for workers on foot or using small ride on plant within the lane or within 1.2 m of traffic and workers are no longer in this area, the temporary speed limit implemented for them must be removed and, if applicable, an alternative speed limit for the safety of road workers and road users may be implemented.

Ensure that the temporary speed zone is terminated by a Speed Restriction or END Speed Limit sign.

~~The END Speed Limit sign will trigger the default built up or open road speed limit.~~

In Queensland where an END Speed Limit sign is used, the speed limit which applies following this sign is the default speed limit applicable for that road environment of either a built-up area of 50 km/h or for a road that is not in a built-up area of 100 km/h.

QGTTM Part 5

Basic planning is required so that STLI is identified as best option, need to justify the use of STLI as opposed to another approach.

Removed the sentence regarding the need for a TMP and a risk assessment delivering a similar outcome.

See changes highlighted yellow following.

2 Design process

2.1 General

Addition

Note that, for Part 5 work protection methods only, a TGS could be in the form of a work method statement for short term low impact works.

~~A TMP may not be required for short-term low-impact works conducted in accordance with this Part, as the required on-site risk assessment will deliver a similar outcome.~~

QGTTM Part 6

Long term signs directed exclusively towards pedestrians should not be installed high up on posts in the same way long term signs for road users are. Pedestrians may not see them – need a practical approach.

Added mounting height requirements for signs directed exclusively towards pedestrians.

6 TGS installation

6.6 Typical Locations for Signs

6.6.1 Long term

Addition

Signs directed exclusively towards pedestrians must be securely installed at a height which will enable signs to be viewed easily by pedestrians (typically between 500 mm and 1000 mm above the footpath level to the underside of the sign).

QGTTM Part 7

The requirements for the 600x600 PREPARE TO STOP signs, mention ‘when used side-by-side’ which was leading to an understanding that a that when used as 1200 x 300 panel, this section is no longer applicable.

That is not the case with the 600x600 version of the sign being mandated.

Removed the reference to “side by side” for the traffic controller PREPARE TO STOP style signs.

See changes highlighted yellow following.

2 Traffic controller requirements

2.6 What to use

2.6.3 Approved equipment for manual control of traffic

Difference

Within subsection 'Warning signs', replace:

> When used side by side in a multi message situation, the PREPARE TO STOP sign must be placed closest to the travel way as a 600 x 600 sign. In this situation, the PREPARE TO STOP must not be the 1200 x 300 size as it does not demand the same authority as illustrated in Figure 2.4.

with:

> When used ~~side-by-side~~ in a multi message situation, it is mandatory that the PREPARE TO STOP panel is placed closest to the travel way and that the 600 x 600 version of this sign is used as illustrated in Figure 2.4, excluding where the use of the 1200 x 300 version is specifically permitted by QGTTM. The PREPARE TO STOP panel is used where warranted as part of the advance signage on approach to the traffic control position. See Section 4.8 of QGTTM Part 3 and *Guideline – Traffic Management at Works on Roads*.

QGTTM Part 8

Clarify the updating process for TTM road categories for new roads (bypasses and so on) and existing roads that may have changed.

Added information to the process for updating Queensland Globe maps.

See changes highlighted yellow following.

2 Road categories for temporary traffic management

2.4 TTM road categories map for Queensland

New

TTM road categories for roads across Queensland have been determined and are available on Queensland Globe. This map only shows Category 2 or 3 roads, with all other roads being Category 1. The TTM Road Categories map layer on Queensland Globe is accessible by following these steps:

- Click on 'Layers'.
- Click on 'Add Layers'.
- Scroll down to the 'Transportation' category and expand the layer list using the dropdown arrow.
- Select the 'Temporary traffic management road categories' layer by checking the tick box.

Please note that:

- A list of Local Government Authorities (LGAs) and their Queensland Globe map status is available on the QGTTM webpage. If no roads are displayed for the LGA in Queensland Globe, please check the LGA map status document and, if 'not included', contact the LGA directly, noting that only Category 2 and 3 roads are displayed on Queensland Globe. Additional road category information will be added to Queensland Globe by Transport and Main Roads for LGAs as this information becomes available.
- The road category layer is only visible at certain zoom levels, so navigate to your area of interest and zoom in to view the current TTM Road Categories.
- To enhance the visibility of the TTM category layer, deselect other road network layers and use the 'Queensland basemap grey' layer in place of the imagery layer. You can toggle them on and off as required.

If you are new to Queensland Globe, there is a range of tutorial videos available under the 'Help' section.

The TTM road categories map on the Queensland Globe will be maintained and updated by Transport and Main Roads periodically. Please email TrafficEngineering.Support@tmr.qld.gov.au with any requested changes for approval. The Traffic Engineering Practice team will forward any approved TTM road category changes to the TMR Corporate Mapping team for updating of the Queensland Globe maps.

Removed reference to “workplaces” from ETM Tasks.

Added that ETMs are volunteers who are only to be engaged at special events by the event organiser.

See changes highlighted yellow following.

Appendix A TTM Roles – Additional tasks and activities

Addition

The tables following outline the various TTM duties in relation to the selection, design, implementation, monitoring or modification of a Traffic Management Plan (TMP) or a Traffic Guidance Scheme (TGS) which may be performed based on the competent person definitions in Clause 1.3.2 Queensland MUTCD Part 3.

A competent person must only undertake activities relevant to their temporary traffic management role.

A person holding multiple competencies (qualifications) may apply all of the relevant sections for those competencies (or qualifications) as identified in the table following. If an activity is not listed for a given competency, then that activity cannot be conducted under that competency.

Difference

In Table A5 replace:

> The person under instruction should have the Working Safely Near Traffic training unit competency.

with:

> The person under instruction must be a Working in Proximity to Traffic Awareness Part 1 Competent Person or a Queensland accredited traffic controller.

Difference

Replace Table A7 with the following:

Table A7: Traffic management worker

Competent person – Working in Proximity to Traffic Awareness – Part 1	
Task – Implementation	
Activity	**Additional Information**
Install or remove signs under direct supervision and instruction by a *Working in Proximity to Traffic Awareness – Part 2* Competent Person, where those devices are part of a work method practice or TGS developed in accordance with the short-term, low-impact works in QGTTM Part 5, excluding works involving: a) grading, or b) protection by a shadow vehicle with (or without) a truck-mounted attenuator, or c) the use of sections 4.1, 4.4 or 4.5.	Direct supervision requires the supervising *Working in Proximity to Traffic Awareness – Part 2* Competent Person to be present (in close proximity) and able to intervene if required.
Install or remove signs and other devices included on a TGS under direct supervision and instruction by a TMI Competent Person	Direct supervision requires the supervising TMI to hold the Traffic Management Implement competency at the appropriate road category, and be present (in close proximity) and able to intervene if required
Cover or uncover signs	Generally, at the end or start of a shift. Instruction must be included on the TGS that the signs can be covered or uncovered and at what times or under what conditions.
Record Keeping	Daily record of installed traffic management signs and devices in accordance with QGTTM Part 6 Section 7.
Task – Implementation	
Activity	**Additional Information**
Modify the TGS on site in response to an emergency event	In accordance with QGTTM Part 10 Section 5.2 *Initial Response* only.

<table>
<tr><th colspan="2">Competent person – Working in Proximity to Traffic Awareness – Part 2</th></tr>
<tr><td colspan="2">All of the Tasks and Activities for a Working in Proximity to Traffic Awareness Part 1 Competent Person, in addition to the following.</td></tr>
<tr><th colspan="2">Task – Selection and Implementation</th></tr>
<tr><th>Activity</th><th>Additional information</th></tr>
<tr><td>Select, design and implement a work method practice (including the installation or removal of signs) in accordance with the short-term low-impact works in QGTTM Part 5, excluding works involving:
a) grading, or
b) protection by a shadow vehicle with (or without) a truck-mounted attenuator, or
c) the use of sections 4.1, 4.4 or 4.5</td><td>Develop a simple sketch as part of the on-site record keeping requirements for short-term low-impact works in accordance with QGTTM Part 5.
Signs applicable for installation or removal by a Working in Proximity to Traffic Awareness – Part 2 Competent Person are only those required for compliance with the relevant sections of the short-term low-impact works in QGTTM Part 5, including:
Workers (symbolic)
SURVEYORS AHEAD
LINE MARKERS AHEAD
MOWING AHEAD or Mowing (symbolic)
ROAD PLANT AHEAD
NEXT x km / NEXT 500 m</td></tr>
<tr><td>Install or remove signs on a TGS developed by a TMD in accordance with the short-term low-impact works in QGTTM Part 5, excluding works involving:
a) grading, or
b) protection by a shadow vehicle with (or without) a truck-mounted attenuator, or
c) the use of sections 4.1, 4.4 or 4.5.</td><td>Signs applicable for installation or removal by a Working in Proximity to Traffic Awareness – Part 2 Competent Person are only those required for compliance with the relevant sections of the short-term low-impact works in QGTTM Part 5 and as listed previously.</td></tr>
<tr><td>Select an appropriate generic TGS (from a system designed by a TMD), assess as site suitable and implement.
The generic TGS must be developed in accordance with the short-term low-impact works in QGTTM Part 5, and excludes works involving:
a) grading, or
b) protection by a shadow vehicle with (or without) a truck-mounted attenuator, or
c) the use of sections 4.1, 4.4 or 4.5.</td><td>Selection and implementation of the generic TGS must be performed in accordance with the established protocol or procedure as documented by the TMD Competent Person when developing the generic TGS.
Signs applicable for installation or removal by a Working in Proximity to Traffic Awareness – Part 2 Competent Person are only those required for compliance with the relevant sections of the short-term low-impact works in QGTTM Part 5 and as listed previously.</td></tr>
</table>

Competent person – Lookout person	
Activity	**Additional information**
Perform lookout activity as required in the QGTTM Part 5.	Must have good eyesight, hearing and be competent to perform lookout activities.
Competent Person – Roadworks pilot vehicle driver	
Activity	**Additional information**
Drive a pilot vehicle on a worksite working with the Traffic Controllers in attendance for the purpose of traffic management at that worksite only.	Must have a current driver's licence and be competent to perform roadwork pilot vehicle driver duties. NOTE: This task is separate to and different from the requirements for pilot vehicles for heavy vehicles in general traffic situations.
Competent Person – Truck-mounted attenuator (TMA) vehicle driver	
Activity	**Additional information**
Drive a vehicle fitted with a truck-mounted attenuator (TMA) on a worksite	TMA driver must have a current and valid Heavy Vehicle drivers' licence of a suitable class to operate the TMA vehicle. Completed specific training and is deemed competent in the operation of a TMA. The TMA operator / driver must also hold the TMI competency at the appropriate road category.
Display text messages or electronic signs on VMS screens mounted on the TMA vehicle.	In accordance with requirements and instructions on the TGS.
Display of direction arrow(s) on arrow boards mounted on the TMA vehicle.	In accordance with requirements and instructions on the TGS.
Competent person – Authorised person	
Task – Install and remove	
Activity	**Additional information**
Install and remove advance warning signs in accordance with procedures nominated in permits; for example, 'Smoke Hazard', 'Stock'.	An example of a procedure would be Queensland Fire and Emergency Services gazette notice for cane burning.

Competent Person – Event Traffic Marshal (ETM) for Special Events **(In accordance with the Traffic Marshal – Special Event Approved Procedure)**	
Task – Implement **(ETMs are volunteers who are only to be engaged at special events by the event organiser and cannot ~~not to~~ be used at roadworks ~~or workplaces~~)**	
Activity	**Additional information**
Only the signs and devices specifically nominated by the TMD on the TGS (for a permitted Special Event) as able to be installed and removed by an ETM.	Signs and devices to be installed by ETMs will be located in simple low-speed, low-risk traffic environments for the duration of a permitted Special Event. A TC may also install devices nominated on the TGS for an ETM.
Control traffic only at locations specifically nominated by the TMD on the TGS (for a permitted Special Event) as appropriate for an ETM.	ETMs may control traffic in low-speed, low-risk traffic environments for the duration of a permitted Special Event. A TC may also control traffic at a location nominated on the TGS for an ETM.

QGTTM Part 9

The example layout 40 is primarily for a title block arrangement example, but which strangely does not include a space for a signature of the TMD.

Added information to clarify that a signature is required, and that it may be electronic.

See changes highlighted yellow following.

Appendix I: Sample Layouts (Worked Examples)

Addition

Add the following to the Design Considerations, note 4 in Sample Layout 40 *Title block, notes and certification.*

The TMP and TGS(s) must be signed and dated by the person that designed it. This signature may be electronic.

Difference

The following sample layout is not accepted in Queensland:

- Sample Layout 42 *Application of AGTTM Part 3 Figure 5.1*.

Addition

For worked examples and guidance on developing Traffic Guidance Schemes in Queensland, refer to TN195 *Traffic Guidance Schemes worked examples*.

QGTTM Part 10

Added reference to Queensland MUTCD Part 3.

See changes highlighted yellow following.

4 Events on Roads

4.5 Event Traffic Management Signage

Addition

Traffic control measures and devices used to warn, instruct and guide road users in the negotiation of events must be in accordance with both the *Queensland MUTCD Part 3* and the *Event traffic management design guidelines* available on the departmental website.