



TS 00198:1.0

21.099

Standard

Portable Variable Message Signs

Issue date: 30 May 2024

Effective date: 30 May 2024

Disclaimer

This document has been prepared by Transport for NSW (TfNSW) specifically for its own use and is also available for use by NSW public transport agencies for transport assets.

Any third parties considering use of this document should obtain their own independent professional advice about the appropriateness of using this document and the accuracy of its contents. TfNSW disclaims all responsibility and liability arising whether directly or indirectly out of or in connection with the contents or use of this document.

TfNSW makes no warranty or representation in relation to the accuracy, currency or adequacy of this document or that the document is fit for purpose.

The inclusion of any third party material in this document, does not represent an endorsement by TfNSW of any third party product or service.

For queries regarding this document, please email Transport for NSW Asset Management Branch at standards@transport.nsw.gov.au or visit www.transport.nsw.gov.au

Document information

Owner: Director Corridor Infrastructure and Engineering
Asset Management
Safety, Environment and Regulation

Mode: Roads

Discipline: Traffic

Document history

Revision	Effective date	Summary of changes
0.01	11/04/2024	DS initial edit
1.0	30/05/2024	First issue as TS 00198. Version number recommenced in line with new designation

Preface

This Standard is the first issue as TS 00198. It supersedes TS 06314 *Instructions for the use of portable variable message signs*, version 0.00. It also adapts sections on portable VMS from TS 05394.10, version 0.00, *Supplement to Austroads Guide to Traffic Management Part 10: Traffic Control and Communication Devices*.

Portable variable message signs (VMS) are electronic signs used for traffic management and to display information to road users. With the increased use of portable VMS, the safe and effective application of these devices is essential.

This document provides requirements and guidance on the use of portable VMS in New South Wales including their safe placement, location and message display.

It also outlines other standards, laws and guidelines that apply to the use of portable VMS. Compliance with this standard will encourage consistent use of portable VMS while prioritising the safety of workers and road users.

Table of contents

1	Scope	6
2	Application	6
3	Referenced documents	6
4	Terms, definitions and abbreviations	7
5	General	8
5.1	Communications	8
5.2	Portable VMS as a traffic or safety hazard	8
5.3	Concessions	8
5.4	Site-specific risk assessment	9
5.5	Traffic management plans	9
6	Use of portable VMS	9
6.1	Examples of use	10
6.2	Information on advertising	10
7	Safe placement and location	11
7.1	Portable VMS location along roadways	11
7.2	On paths used by pedestrians and cyclists	12
8	Message display	12
8.1	Legibility	12
8.2	Priority	13
8.3	Content	13

1 Scope

This Standard sets out requirements and guidelines for the use of portable VMS on NSW roads.

It focuses on operational policy aspects of portable VMS including their application, safe placement, location, and message display.

This document does not cover system and performance specifications for portable VMS. Nor does it include requirements for portable variable speed limit signs.

2 Application

This document is intended for use by:

- Transport for NSW (TfNSW)
- local councils
- industry, plant hire and other contractors.

For information on the responsibility for road management, refer to *Schedule of Classified Roads and Unclassified Regional Roads*.

Requirements in this document are mandatory for TfNSW.

Local government, industry and plant hire companies are encouraged to adopt this document as best practice and for consistent use of portable VMS.

3 Referenced documents

The following documents are cited in the text. For dated references, only the cited edition applies. For undated references, the latest edition of the referenced document applies.

International standards

EN 12966 *Road vertical signs – Variable message traffic signs*

Australian standards

AS 1742.2 *Manual of uniform traffic control devices, Part 2: Traffic control devices for general use*

AS 4852.2 *Variable Message signs, Part 2: Portable signs*

Transport for NSW standards

TS 00003.1 *Concessions to Transport Standards Part 1 – Concession Process*

TS 05394.10:0.00, *Supplement to Austroads Guide to Traffic Management Part 10: Traffic control and Communications Devices*

TS 05492 *Traffic Control at Work Sites*

TS 06336 *Guide to Traffic and Transport Management for Special Events*

Legislation

Roads Act 1993 (NSW)

State Environmental Planning Policy (Industry and Employment) 2021 (NSW)

Other referenced documents

Austrroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections
(AGRD04A)

Austrroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers (AGRD06)

Austrroads Guide to Road Design Part 6A: Paths for Walking and Cycling (AGRD06A)

Austrroads Guide to Traffic Management Part 10: Transport Control – Types of Devices
(AGTM10)

Austrroads Guide to Temporary Traffic Management Part 3: Static Worksites (AGTTM03)

TfNSW Schedule of Classified Roads and Unclassified Regional Roads

4 Terms, definitions and abbreviations

The following terms, definitions and abbreviations apply in this document.

AGRD Austrroads Guide to Road Design

AGTM Austrroads Guide to Traffic Management

TfNSW Transport for NSW

TGS traffic guidance scheme

TMP traffic management plan

VMS variable message sign

VSLs variable speed limit sign

5 General

For the purposes of this document, portable VMS are mobile plant items temporarily located on a road or road reserve to display traffic management or safety messages. These VMS are typically trailer-mounted with remotely controlled display messages.

All portable VMS used on the State Road network shall comply with the requirements of AS 4852.2. They shall also meet the following requirements:

- have sufficient power storage for the period of use
- be approximately 3.2 m wide by 2 m high when placed on or adjacent to the road or 1.15 m wide by 1.88 m high near a footpath, shared path or bicycle path.

5.1 Communications

Portable VMS should be located in areas that have mobile phone coverage so the message can be accessed remotely in the case of emergencies.

If located in an area with poor or no mobile phone coverage, the portable VMS shall be capable of having the message programmed on site.

5.2 Portable VMS as a traffic or safety hazard

Under the *Roads Act 1993*, TfNSW may remove an unauthorised portable VMS located on a classified road or road reserve.

TfNSW may also request the relocation or removal of a portable VMS from any road or road reserve, if deemed a traffic hazard because of its location or the message display.

5.3 Concessions

Use of portable VMS shall comply with the requirements outlined in this document. Departures from these requirements for the following aspects of portable VMS shall comply with the TfNSW concessions process outlined in TS 00003.1. This applies to:

- placement of the portable VMS
- content of new or modified messages.

During the concessions process, appointed delegates of TfNSW shall make the decisions.

All stages of portable VMS use shall observe safety and compliance, from installation and operation to maintenance and removal. Ongoing monitoring of traffic management situations shall allow the portable VMS to be updated or removed when required.

5.4 Site-specific risk assessment

The agency responsible for the worksite, event or campaign shall conduct a site-specific risk assessment to identify and manage risks associated with the proposed VMS location. Factors to consider include clear passage and safety for pedestrians, wheelchair and mobility scooter users and cyclists. Proximity to traffic, overhead electricity lines, culverts, medians or steep embankments should also be assessed.

5.5 Traffic management plans

The use of a portable VMS should also be considered as part of a traffic management plan (TMP) and be included on a traffic guidance scheme (TGS). In this case, the TMP should explain the rationale for using a portable VMS. It should also confirm that all traffic and transport impacts of the proposed portable VMS have been identified, assessed and managed to minimise disruption to the road transport network and its users. The relevant roads authority should review and approve the TMP and TGS.

For additional technical guidance on portable VMS, refer to the following standards and documents:

- TS 05492
- AGTM10.

6 Use of portable VMS

The main purpose of a portable VMS is to provide information about road and traffic conditions. Before using a portable VMS, it is important to consider the objective and whether it is the best device for the situation. The benefits need to outweigh any potential risks or the costs of portable VMS use.

Portable VMS shall only be used on a road or road-related area to:

- provide traffic management messages for roadworks, incidents, special events or changed traffic conditions, including speed limit changes
- display road safety messages for government and community announcements such as total fire bans.

The following section provides details on the use of portable VMS in various contexts.

6.1 Examples of use

6.1.1 Near road construction or maintenance sites

The use of portable VMS to aid in temporary traffic management at road work zones shall meet the requirements in TS 05492. For information on the use of portable variable speed limit signs (VSLS) refer to TS 05492.

For roads managed by local councils, relevant authorities should be consulted on their requirements for the placement and operation of portable VMS. If no specific guidance is given, TS 05492 should be consulted.

6.1.2 Alongside special events

Use of portable VMS for special events helps to inform, warn and direct road users on necessary action regarding changed traffic conditions. In such instances, the requirements of TS 06336 shall be met where applicable.

6.1.3 For traffic incidents

Portable VMS may be used for the management of traffic incidents where permanent VMS are not available. Especially along major tourist routes and during holiday periods, portable VMS can warn motorists of expected delays, or detours due to traffic incidents.

6.1.4 For road safety campaign messages

Road safety campaign messages are permitted on portable VMS but should be assessed to ensure they are suitable for display. For example, considering whether the campaign message is relevant to the specific road and its users.

6.1.5 To encourage lower speeds

Portable VMS equipped with radar speed detectors may be used to encourage compliance with lower speed limits, such as at work sites or in high pedestrian activity areas.

These portable VMS shall be calibrated according to the manufacturer's instructions to ensure vehicle speeds are measured accurately within specified tolerances.

On site, these devices shall be regularly checked for accuracy and recalibrated if necessary.

6.2 Information on advertising

Portable VMS on a classified road or road reserve shall not be used for either private or community advertising. Advertising will undermine the importance of portable VMS for providing road safety and traffic management information and may distract drivers.

State Environmental Planning Policy prohibits advertisements on trailers (which includes portable VMS) parked on, or visible from, roads or road-related areas. In certain situations, such advertising may be allowed with prior consent.

7 Safe placement and location

Portable VMS placed on or alongside roads are intended to inform road users, however, excessive use and unsuitable placement can be a traffic hazard or lead to driver distraction. Care should be taken to ensure the placement, location and display of portable VMS does not create a road safety hazard and increase risks for road users. Site selection should allow for safe maintenance access to the portable VMS unit, trailer and associated plant.

The project team or delivery partner shall verify the positioning as appropriate for the site and the context of the portable VMS use (TS 05492). If the location departs from the requirements in this document, this shall be approved as outlined in Section 5.

For guidance on the safe placement and location of portable VMS, refer to:

- TS 05492
- AGTM10
- AGTTM03
- AS 1742.2.

7.1 Portable VMS location along roadways

Portable VMS shall be placed along a road where there is adequate time for the driver to view and understand the message before a decision point or another sign. Decision points are intersections, merge points, exit ramps, traffic control signals, pedestrian crossings, sharp curves or speed zone changes. Minimum distances from a portable VMS to a decision point or another sign shall comply with Table 1.

Table 1 – Minimum distance of portable VMS from decision points

Speed limit (km/h)	Minimum distance to decision point or other VMS or sign (m)
40	65
50	90
60	115
70	140
80	170
90	200
100	235

If these distances are not feasible, a risk-based approach shall determine if a portable VMS is the most suitable device for the purpose, and if so, what is the safest location. Any risk assessment shall be included in the TMP. For guidance on providing separation between signs, refer to AS 1742.2.

7.1.1 Positioning away from traffic lane

In locations with a safety barrier, the portable VMS shall be placed either behind a TfNSW approved safety barrier or, if placed in front, as far from the edge of the traffic lane as possible. The position shall be determined through a risk assessment and documented where relevant in a TMP. Portable VMS should be located outside the clear zone. For more information on this refer to AGRD06.

7.2 On paths used by pedestrians and cyclists

The location of portable VMS shall enable the safe movement of cyclists and pedestrians. They should not be located on a footpath, footway, bicycle path or nature strip. In places where this is unavoidable, the position of the portable VMS shall allow for the minimum clearances outlined in AGRD06A. If minimum clearances are not possible, a safe alternative pathway shall be provided for pedestrians and cyclists. Otherwise, portable VMS shall not be used.

Portable VMS shall not be placed where they will restrict visibility between pedestrians and drivers at crossing points (for example refuges, pedestrian crossings or signalised intersections). These sight distances are based on AGRD04A. The placement of a portable VMS shall also consider the needs of pedestrians with mobility or vision impairment, and those of children.

8 Message display

8.1 Legibility

Requirements and guidelines for legibility and display of messages are set out in AS 4852.2 and AGTM10. Legibility covers aspects such as font, sight distance, observation angle and dimming. Particularly for VSLS, higher resolution displays are recommended to ensure speed limits are readable. To reduce glare, avoid using portable VMS with reflective front screens as specified in EN 12966.

Any portable VMS operated by or on behalf of TfNSW can be used for emergency or incident management purposes. Emergency messages are typically split over two frames. Therefore, sight distances should be calculated on two-frame legibility to allow for this potential use (refer to AGTM10).

When a message is displayed over two frames, the message shall be crafted so that a road user seeing only one frame will understand its meaning. The message should make sense regardless of the order in which the frames are viewed.

8.2 Priority

When various messages are to be displayed on a single portable VMS, a risk-based approach shall be used to ensure the highest priority message is shown at any given time. Refer to AGTM10 for more information on message priority.

Where there are multiple portable VMS and overlapping campaigns, the placement of VMS devices should be coordinated. Each message displayed on a portable VMS shall be appropriate to the location, time of day and local operating environment. To ensure the relevance of messages, traffic incident information shall only be shown for the duration of the incident.

Flashing lights on portable VMS shall only be used for traffic incidents, unexpected road conditions and other high-priority messages.

8.3 Content

The messages displayed on a portable VMS shall be written to allow users to read and understand them with ease. The wording shall draw on the messages and abbreviations outlined in AGTM10 or the additional NSW abbreviations listed in Table 2. Any messages departing from those shall be approved through the concessions process outlined in Section 5.

On site, the portable VMS display shall always display a sign or message. If there is no particular traffic information message to be displayed, temporary default messaging such as 'Report Traffic Incident' alternating with '131 700' shall be used to improve visibility of the portable VMS unit in the dark.

Table 2 – Additional abbreviations used in NSW

Word	Abbreviation
HIGHWAY	HWY
MOTORWAY	M WAY

Where portable VMS are used to display a static sign, refer to TS 05492 for signs permitted in NSW.