


Guidance for using variable signs and signals (VSS)



M54 collision
For Telford
use M6 J12

Document control

Document title	National Highways guidance for using variable signs and signals (VSS)
Author	[REDACTED]
Owner	[REDACTED]
Distribution	Unrestricted
Document status	Issued

Revision history

Version	Date	Description	Author
2.1	1 February 2016	Update for Highways England with other minor alterations	[REDACTED]
2.2	29 August 2017	Update to several sections	[REDACTED]
3.0	4 June 2018	Update to all sections	[REDACTED] and [REDACTED]
3.1	31 October 2019	Update to all sections	[REDACTED]
3.2	22 July 2020	Update to all sections	[REDACTED]
4.0	26 July 2022	Update to all sections	[REDACTED]
4.1	7 March 2024	Update to all sections	[REDACTED]
4.2	2 March 2026	Update to all sections	[REDACTED]

Reviewer list

Name	Title	Version
[REDACTED]	Head of Customer Service Development	4.2
[REDACTED]	Customer Development Team Leader	4.2
[REDACTED]	Senior VSS project manager	4.2

Approvals

Name	Title	Version
[REDACTED]	Customer Experience Director, Customer, Strategy and Communications	4.2

Changes for version 4.2

- References to 'accident' deleted following agreement of National Highways to switch to 'collision' or 'incident' to come into line with DfT, police and road safety organisations. 'Accident' is no longer used to avoid suggesting that collisions are unavoidable and out of respect for victims of road traffic collisions and their families where reckless behaviour has often been the cause of incidents.
- Reference to National Network Managers changed to National Highways Duty Managers to reflect change in role title.
- Section 2.7 – Requirement for strategic closure legends to use flashing amber lamps deleted meaning no strategic signing requires flashing amber lamps as they don't relate to an immediate hazard.
- Section 2.8 – Explanation of sentence case amended to say capitals should be used for each new sentence and supporting examples presented. VMS examples throughout the document have been changed from upper case to reflect preference for sentence case and the increasing ability to display legends in sentence case.
- Section 3.4 – Approved source changed to trusted source, reflecting first occurrence in work instruction. Reference now made to the work instruction for the list of trusted sources.
- Section 3.7 – Guidance now added for legends to be used when speeds limits are set for weather conditions.
- Section 3.9 – Subsection title and content changed to remove reference to 'accident' as a legend and to explain why it has been replaced and to focus on when 'incident' should be used rather than 'collision'.
- Section 4.4 – 'To' removed from multiple junction travel time VMS following insight showing it's unnecessary.
- Section 4.17 – Examples of technology failure legends replaced and wording amended in line with corresponding Operational document.
- Section 4.17 – Guidance for speeds set for technology issues to be accompanied by an explanatory legend.

Contents

1.0 Introduction

1.1	Purpose	5
1.2	Types of signs and signals	6
1.3	Scope	6
1.4	Key definitions	6

2.0 Signs and signals guidance notes

2.1	Relationship between tactical and strategic signs and signals	7
2.2	Fixed or portable?	7
2.3	Diversions	8
2.4	Height and width restrictions	8
2.5	Flashing and scrolling VMS legends	8
2.6	Telephone numbers, websites and email addresses	8
2.7	Design principles of legends	8
2.8	Upper case or sentence case text	10
2.9	Pictograms	10
2.10	Routine congestion	11
2.11	Overuse of VMS legends	11
2.12	Blank VMS and strategic messages	12

3.0 Tactical signs and signals requirements

3.1	Introduction	13
3.2	Lane closures	13
3.3	Variable speed limits	13
3.4	Incident management and unconfirmed reports	14
3.5	Police pursuits	15
3.6	Ending restrictions	15
3.7	Severe weather	16
3.8	Up and over	16
3.9	Stationary and trapped traffic	17
3.10	Motorway Incident Detection and Automatic Signalling (MIDAS)	18
3.11	Roadworks and tactical VSS	19
3.12	No visible activity legends	19
3.13	Testing VSS equipment	19
3.14	Smart motorways opening	20
3.15	Speed limits for air quality	20

4.0 Strategic signs requirements

4.1	Introduction	21
4.2	Future notification of roadworks	21
4.3	Dual legends	21
4.4	Travel time messages (TTVMS)	22
4.5	Signing for delays	23
4.6	Signing for closures	24

4.7	Expected closure duration	24
4.8	Now open	24
4.9	Other road authority legends	25
4.10	Legends for other modes of transport	25
4.11	Toll roads	27
4.12	Campaigns	27
4.13	Special events	28
4.14	Postponed or cancelled events	29
4.15	Crisis management	30
4.16	Area wide severe weather warnings	32
4.17	Unavailable VSS	33
4.18	Motorway service area legends	34
Annex A: Authorised signals and key documents		35
Annex B: Authorised variable message sign legends		36
B.1	Tactical incident management legends	
B.2 (a)	Tactical weather legends	
B.2 (b)	Strategic weather legends	
B.3	Tactical bus lane legends	
B.4	MIDAS legends	
B.5	No visible activity legends	
B.6	Diversion legends	
B.7	Driver information legends (link legends)	
B.8	Driver information legends (network legends)	
B.9	Strategic driver information legends	
B.10	Three line strategic driver information legends	
B.11	Strategic diversion legends	
B.12	Motorway service area legends	
B.13	Legends for other network management tasks	
B.14	Campaign legends	
B.15	Technology loss legends	
B.16	Traffic Officer vehicle message panel (VMP) legends	
Annex C: Initial request for a new VMS legend		55
Annex D: Key terms		56
Annex E: Full revision history		57

1.0 Introduction

1.1 Purpose

This document has been produced by the Customer Experience Division, in Customer, Strategy and Communications, and sets out guidance relating to National Highway's operation of electronic variable message signs (VMS) and electronic light emitting matrix signals, known together as variable signs and signals (VSS). Signs are the legends (words and pictograms) displayed or the devices capable of this display, and signals are the lane availability symbols or speed limits or the devices or parts of a device that display these aspects.

VSS provide the capability to display a wide range of warning messages and other traffic information. The purpose of VSS is to enable those who set signs and signals to meet National Highway's obligations as a network operator. These obligations include incident management, reducing congestion, informing motorists, improving network performance and ensuring the safety of our road users and workforce. VSS also allows us to improve the customer experience, providing information to enable informed journey choices and a sense of control.

A VSS is any discontinuous variable sign or signal, whether fixed or portable, that is either located on the strategic road network or is operated by or on behalf of National Highways.

VSS are used for managing temporary or dynamic traffic situations. Where signs are needed for longer term or static conditions permanent traffic signs should be used. See sections 3.15 and 4.11 for examples of where extended use of VSS may be appropriate.

VSS are traffic signs as defined in [section 64](#) of the Road Traffic Regulation Act (RTRA) 1984. Every sign or signal used by the company must either be prescribed in the Traffic Signs Regulations and General Directions (TSRGD) 2016, or approved for use by special authorisation. For guidance or queries on authorising new legends, contact the VSS policy team (see Annex C).

The underlying purpose of the RTRA is the regulation of traffic and equipment placed on a road under the powers contained in the RTRA – therefore traffic signs must not be used for any other purpose than to convey road traffic messages to drivers. Additionally, VMS legends must only be used to provide road users with information that is relevant to their current or future journey.

[Schedule 15](#) of the TSRGD details signal displays prescribed for use – additional signals, authorised by Department for Transport (DfT) but not yet included in the TSRGD, can be found by following the link in Annex A.

[Schedule 16](#) of the TSRGD details legends to be displayed on VMS – the company has authorisation to display an expanded set of legends, details of which can be found in sections 3, 4 and Annex B.

This document provides high level VSS guidance that shall be followed. Subject to these, the operational decisions when to use VSS are the responsibility of the Regional Operations Centre (ROC) or the National Traffic Information Centre (NTIC) and their operators.

Everyone who sets VSS on the National Highways network must adhere to this guidance.

1.2 Types of signs and signals

The types of VSS available on motorway and trunk road carriageways can be broadly subdivided into six categories as follows:

- MS1 – capable of displaying a single signal. Found as: post mounted central reservation matrix, gantry mounted matrix over each lane, or post mounted entry slip road matrix.
- EMS and MS2 – these message signs are 2 lines of 12 characters or 3 lines of 18 characters that can be either gantry or cantilever mounted.
- MS3 – these message signs are either 2 lines of 16 characters or 3 lines of 18 characters and are normally cantilever mounted. Some have an equivalent of a matrix signal incorporated as part of the sign, (reducing the sign to 2 lines of 12 characters or 3 lines of 14 characters when in use).
- MS4 – these message signs are usually configured to display either messages of 2 lines of 12 characters with matrix signals, speeds and pictograms or messages of 4 lines of 12 characters.
- Portable VMS (pVMS) – these message signs have a variety of line and character configurations and can be transported to locations as and when required.
- Remotely Operated Temporary Traffic Management Signs (ROTTMS) – these are VSS but are not connected to other VSS on the network. They are used where there is no hard shoulder, instead of metal plate signs on the approach to roadworks. They can only display signs for Temporary Traffic Management.
- Traffic Officer vehicles also contain a small variable message panel (VMP) which have the capability to display legends to drivers. These legends and the criteria for use can be found in Annex B.16.

1.3 Scope

- It is not within the scope of this guidance to specify safe locations for the placement of VSS. This is the responsibility of the team installing the VSS equipment.
- This guidance does not include Fixed Text Message Signs or rotating prism signs.
- Electronic Boards for Roadworks (EBRW) which are used to display non-traffic sign information are out of the scope of this guidance.
- Schedule 13, part 6 of the TSRGD provides details for 'Additional Temporary Signs' including signs mounted on roadworks vehicles. These types of signs are outside the scope of this document.
- LED signs used at roadworks, which either improve offside sign visibility, or allow signs to switch between diagrams showing lane closures and narrow lanes are outside the scope of this document.
- All VMS legends detailed in this guidance are authorised for use on both fixed and portable VMS.

1.4 Key definitions

Within this document the word **must** or **must not** is used to indicate a legal requirement which must be complied with. The word **shall** or **shall not** indicates a mandatory requirement of this document. **Should** or **should not** indicates a course of action that is strongly recommended. The word **may** is used to indicate an option, which requires consideration depending on the circumstances.

2.0 Signs and signals guidance notes

2.1 Relationship between tactical and strategic signs and signals

There are two categories of use for signs and signals, these are **tactical** and **strategic**. Where a reasonable level of VSS infrastructure is available, tactical signs and signals shall only be set in an area which is a maximum of 5km or 2 junctions from either the scene of an incident (or other event which drivers need to be informed of), or from the rear of any queues which have formed as a result of the incident.

Tactical VSS are set by the Regional Operations Centre (ROC) and shall focus on providing legends which warn drivers of an incident that is immediately ahead, protecting both those at the scene and queuing or approaching traffic.

Strategic VMS are set by the National Traffic Information Centre (NTIC) and typically warn of closures, delays or diversions. These messages shall be set far enough away and at locations that allow drivers to make an informed choice about their journey. Signals shall not be used strategically.

To ensure that customers receive the most relevant information at the right time, all strategic messages within the tactical signing area must be removed by NTIC when an incident or delays occur, until all tactical signs and signals for the incident or delays have been cleared unless:

- In circumstances where drivers have joined the motorway within the tactical signing area and the strategic message applies to their journey and the information being provided could allow them to make an informed decision on how to proceed.
- A relevant travel or delay time message is displayed – see section 4.4.
- A crisis management legend is displayed – see section 4.15.
- The VMS is located on the first portal gantry, on an ALR (all-lane running) link.

Specific uses of tactical and strategic VSS are detailed in sections 3 and 4.

2.2 Fixed or portable?

The most visible type of VMS to drivers are fixed and these shall always be used before a portable VMS is considered. If a decision is made that a portable VMS is to be used it is subject to all guidance detailed in this document and shall only be used when:

- filling in a gap in the fixed VMS infrastructure
- to guarantee the 24/7 availability of a legend
- for use as permitted with Traffic Signs Manual: Chapter 8.

Portable VMS shall be set, monitored and used under the direction of the relevant operations centre. Any dynamic messages set on portable VMS, such as travel times or delays, must have the appropriate data to support near real-time updates.

2.3 Diversions

When diverting traffic off the strategic road network, consideration should be given to the impact on surrounding roads and communities. In meeting our obligations under the Traffic Management Act 2004, agreed diversion routes should be used where possible. See Annexes B.6 and B.11 for legend options.

2.4 Height and width restrictions

When a temporary height or width restriction is to be advised using VMS, imperial measurements must be used. Wherever possible, the metric equivalent shall also be displayed within the same VMS legend, but this must be as additional information and not in place of the imperial measurement.

2.5 Flashing and scrolling VMS legends

VMS must not be used to display scrolling, alternating, flashing or sequential legends whilst traffic is moving. There is one exception to this rule, which is the scrolling chevrons on the variable message panel (VMP) displayed from the rear of Traffic Officer vehicles – see Annex B.16.

2.6 Telephone numbers, website and email addresses

Website or email addresses, and references to online content including use of the @ and hash-tag symbols #, must not be used in VMS legends. Legends must not encourage drivers to use electronic devices such as mobile phones. Telephone numbers must not be displayed on VMS even when they are being provided on hard signs for roadworks in accordance with the TSRGD.

2.7 Design principles of legends

VMS legends must be suitable for all drivers to read and shall focus on providing information that benefits the largest number of customers using the road network.

Research carried out in 2018 by TRL, on behalf of National Highways has shown that drivers can recall on average 4 to 5 pieces of information. A VMS legend should contain as few pieces of information as possible, with a maximum of 7 pieces. If it is necessary to convey more than this, then messages should be paired using two separate consecutive VMS, as long as each message can be understood and has relevance on its own.

Volume 8, Section 2 (TD33/05) of the Design Manual for Roads and Bridges (DMRB) provides more detailed guidance on the maximum number of words which are permitted for use in VMS legends. However, based on the TRL research, the number of words used should be minimised.

A piece of information is a word that is meaningful when read on its own or multiple words read together as one subject. For example, 'Hard shoulder' and 'Jct 25' each represent one piece of information even though they both contain two words. However, the individual words carry no meaning on their own on a VMS legend, and require the context that the other words give.

Portable VMS are located on a verge, and not above a carriageway. Due to this all legends shown on portable VMS shall not normally contain more than 4 pieces of information as the verge location limits the amount of time drivers have to read and absorb the information displayed.

TRL's 2018 research also showed that when constructing legends the LPEG order (location, problem, effect, and guidance) provides the most effective means of communicating succinctly with drivers, although not all of the 4 elements are required for every legend – for example tactical legends mainly focus on the problem (Collision) and guidance (SLOW DOWN).

Location	Where is the problem? (M6 J32/M25 J20-21)
Problem	What is the problem? (Collision/Major event/Closed)
Effect	What has the problem caused? (Delays/45 min delay)
Guidance	What should be done? (SLOW DOWN/Follow diversion)

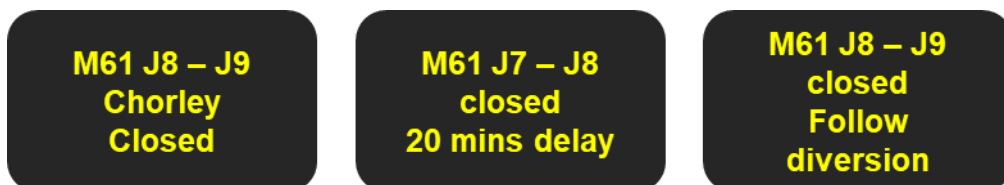
Legends should contain both a place name and a junction number. VMS can be paired to achieve this. Where it's not possible to provide both details the junction number shall take priority.

It may be appropriate to set multiple strategic VMS about the same incident between junctions, when doing so details should be given as follows:

Every VMS should state	<ul style="list-style-type: none"> ▪ Location – road and junction(s) ▪ Problem or Effect
At least one VMS should state	<ul style="list-style-type: none"> ▪ Location – place name
Where relevant* at least one VMS should state	<ul style="list-style-type: none"> ▪ Effect ▪ Guidance ▪ Reason

* Operations should select which details are most relevant and helpful to customers and for managing the network.

Example of different elements being covered over three VMS set for the same incident:



All information displayed on VMS (place names, junction numbers and intersecting roads) should match that shown on the route directional hard signs.

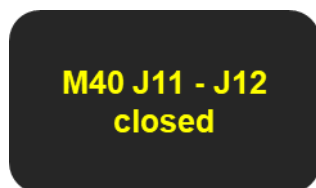
The flashing red and amber lamps of a variable signal shall only be used as described in Schedule 15, of the TSRGD.

Flashing amber lamps should only be used for VMS legends which contain an imperative such as SLOW DOWN or for ONCOMING VEHICLE.

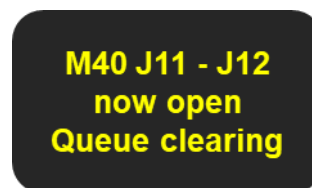
Note: MS4 VMS are not programmed to display flashing amber lamps with legends.

2.8 Upper case or sentence case text

Where VMS type permits, legends should be displayed in sentence case, with a capital letter starting each new sentence using Transport Mixed Case font.



One-sentence legend



Two-sentence legend

Exceptions: The following should remain in Transport Upper (TU) case text:

Urgent warnings:

- **SLOW DOWN** - (eg Fog patches / SLOW DOWN)
- **SLOW** - (eg Animals in road / SLOW)
- **ONCOMING VEHICLE**

Geographical:

- **M*, A*, B*** - motorway and road numbers (M4 East collision)
- **N,E,S,W** - abbreviations for carriageway direction that are displayed in brackets (eg Exit closed to A*(E))
- **J*** - Junction identifier (Long delays at J* exit)

Initials:

- **FM** - used for travel information signs (eg Travel news tune ***.*FM)
- **HGVs** - (eg HGVs leave motorway)
- **LPG** - (eg No LPG at service area)
- **EV** - (eg Keele Services EV charging out of service)

2.9 Pictograms

Pictograms are a graphical representation of a tactical legend. Currently 11 pictograms are available for use on an MS4 type VMS, comprising 4 diversion route pictograms and 7 tactical incident pictograms, as shown below.

Pictograms shall only be used for tactical purposes and all tactical incident pictograms must be shown within a red warning triangle. Tactical diversion route pictograms must not be shown with a red warning triangle and shall only be displayed at locations where related diversion signs exist along the diversion route.

Unless a pictogram has more than one meaning, when used, the text the pictogram represents shall be removed from any legends displayed on the VMS, unless doing so means no text will be displayed on the VMS. Where technology allows, the text will be replaced with additional information such as 'lane closure ahead' or 'after jct' to supplement the pictogram.

Tactical diversion route pictograms



Tactical incident pictograms



Unless approved separately, pictograms should always be displayed using a height dimension of 1500mm (1.5 metres).

2.10 Routine congestion

Congestion is defined as an increase in travel time over the normal journey profile. When journey time is 10 minutes or more above the journey profile, VMS may then be used to warn customers. VMS shall not be used to advise of routine slow-moving traffic (such as rush hour traffic) which does not increase journey time above this threshold. However, congestion management and queue protection legends generated by MIDAS shall still be used to help manage congestion and protect the rear of any queues formed respectively.

2.11 Overuse of VMS legends

Agreed European best practice is to only display the same strategic legend twice between junctions, as these are usually displayed over a wide area meaning drivers have more than one opportunity to view them.

Simulator trials carried out in 2018 by TRL on behalf of National Highways, have shown that repeating the same strategic message more than twice between a junction does not improve driver behaviour or recall.

To minimise distraction and avoid overloading drivers with information on VMS, the following guidelines shall be adhered to:

- Limit the number of signs as much as possible.
- Limit the information on one sign as much as possible and do not exceed 7 pieces of information.
- Try to use pictograms instead of words, if possible (especially important for foreign drivers).¹
- Give information in a concise way; do not divert the driver's attention for too long.

¹ Wogalter, M. S; Conzola, V. C; Smith-Jackson, T. L. (2002) Research-based guidelines for warning design and evaluation. Applied Ergonomics 33, p. 225

- Set no more than three strategic VMS about the same incident or event per link and no more than two of the same message – see guidance on message construction in section 2.7.
- Eliminate irrelevant information to reduce the amount of information drivers need to assimilate.

Tactical legends provide information about an immediate incident and therefore there is no limit on the number of times that a legend can be shown in the tactical area, but overuse should be considered when setting legends for the reasons stated above.

2.12 Blank VMS and strategic messages

Research by TRL (2018) identified that strategic messages followed by blank VMS appeared to encourage a considerable proportion of drivers to assume an earlier restriction has ended. The trials also found that drivers may fail to notice small changes in consecutive messages. Due to these findings, when setting strategic messages, it is recommended that the last two available signs before a junction should be set and if different strategic messages are set consecutively, the difference may be highlighted by a blank VMS where possible.

3.0 Tactical signs and signals requirements

3.1 Introduction

Tactical VSS enable Regional Operations Centres (ROCs) to provide early warnings of incidents on the strategic road network which may require drivers to stop, change lanes or reduce speed.

To increase driver compliance, where possible all tactical signals shall be supplemented by a VMS legend to provide drivers with information stating why the signals have been set. VMS legends are listed in this section when appropriate – the most commonly used national tactical legends used can be found in Annex B.

Tactical incident legends have been designed to fit on VMS that are only capable of displaying the minimum number of characters (2 lines of 12), even if a larger sign is available – this is to ensure 100% availability to operators.

As tactical legends provide information about an immediate incident, no flexibility can be granted in their construction and only approved legends shall be used.

When traffic or police officers are deployed or working on the carriageway, less restrictive signals such as higher speeds must never be implemented without the consent of the scene commander (eg traffic or police officer).

ROCs should request removal of NTIC-set legends when they are no longer appropriate due to changes in road conditions. For example, 'Keep left unless overtaking' should be removed where lane 1 is subject to flooding.

3.2 Lane closures

Lane closures shall not be implemented that result in central lane(s) being closed with the outer and inner lanes remaining open as this would create an island. Lane closures must always provide safe refuge for the workforce on the carriageway.

Where lanes are closed by a red X, 'Red X means lane closed' should also be displayed in advance of the lead-in VSS where possible, in all-lane running sections of smart motorways.

3.3 Variable speed limits

Variable speed limits may be displayed from 20mph to 60mph and at 10mph intervals in between. Although research shows that a 30mph speed reduction is considered safe,² decrements of greater than 10mph should only be used where the spacing between signals is greater than 800 metres, and here the advice is that, where possible, speeds should not be reduced by more than 20mph at a time (eg 60mph to 40mph). This provides a balance between not setting speed limits too far back, while giving enough warning to customers to reduce speed.

Where variable mandatory speeds are displayed the following should apply:

- A maximum of 40mph should be displayed alongside a lane closure.
- A maximum of 50mph should be displayed alongside a lane divert.

² Atkins Jacob JV (2022) VSS Policy research report

Where advanced motorway indicators (AMIs) are used to display a speed limit, the limit must be displayed above all open lanes.

Where MS4s are used to display the speed limit which applies to open lanes, the speed limit will be displayed in the upper right section of the sign, as illustrated to the right of this text.



Speed restrictions displayed in this way must conform to the authorised dimensions of the inverse variant of TSRGD diagram 670 or diagram 671 as required.

To avoid customer confusion and to ensure National Highways provides clear and 'adequate guidance'³, where possible speed limits should not conflict between variable mandatory or advisory limits and limits displayed on hard plate fixed signs. Setting the Highest Displayable Speed (HDS) on VSS to match the speed limit on hard plate fixed signs, can help reduce the likelihood of conflicting speed limits.

There may be occasions where there is a need to warn of a temporary hazard ahead with lower variable speed limits when compared to hard plate fixed signs, and this should be considered on safety grounds (eg MIDAS or an oncoming vehicle).

3.4 Incident management and unconfirmed reports

If an incident is reported by anyone other than a trusted source listed in the work instruction, it is an 'unconfirmed' report. Until such information can be verified by a trusted source, an operator should set a maximum speed of 60mph with a supporting text legend that begins, 'Report of ...' where VMS are available (see Annex B.1).

When none of the 'Report of ...' legends are appropriate, such as when police are dealing with an issue affecting the network, then 'Incident' should be used.

If, however an operator is reasonably satisfied with the accuracy of the information supplied (for example information received from a motorway telephone or several calls received from different sources giving the same incident location and description) then appropriate non lane-specific tactical signs and signals should be set. Depending upon the nature of the incident reported it may be that the setting of signs and signals is required on both carriageways.

Once the exact details of an incident have been confirmed by one of the trusted sources, it becomes a confirmed report, and appropriate lane-specific signs and signals should be set as required.

Pedestrians or animals in road

Pedestrians and animals can act unpredictably and so operators shall consider setting signals on the approach to the location on both carriageways whether confirmed or unconfirmed.

Oncoming vehicle

A vehicle travelling against the flow of traffic creates extreme danger, so it shall be treated as a confirmed incident no matter the information source.

³ Road Traffic Regulation Act 1984, Section 85

A blanket 20mph speed restriction and the 'ONCOMING VEHICLE' legend shall be set in both directions of the reported location. By doing this, the wrong way driver may see the VSS on the opposite carriageway.

3.5 Police pursuits





The 'Tactics Directory for Police Pursuits' states that where VSS exist, then officers must request 'low speed matrix and consider the use of a suitable VMS message if available'.

Only existing tactical VSS legends shall be used and this shall only be when a formal instruction is received from a police force. In accepting this instruction the call sign and/or collar number of the requesting officer shall be recorded.

3.6 Ending restrictions

The end of a restriction (whether speed or lane control) shall always be displayed when tactical signs and signals have been set, at the first downstream device from the end of the incident, delays or roadworks, to inform drivers that the reason for any signs and signals has now ended.

This may be displayed in a number of ways:

<p>an 'END' aspect (eg on a MS1 matrix signal)</p>	
<p>an inverted national speed limit roundel (eg on AMIs and early smart motorway dynamic hard shoulder sections)</p>	
<p>a national speed limit roundel (eg on AMIs on later smart motorway schemes)</p>	
<p>a national speed limit roundel (eg on MS4s on smart motorway ALR schemes)</p>	

The exceptions to this are when:

- A FOG signal is set, so no 'end' signal is required.
- A further incident has occurred up to 2km further along the motorway from an incident, and drivers will soon encounter new incident VSS.
- It could conflict with the start of Chapter 8 roadworks signing, which have mandatory speed restrictions.
- Within roadworks.

Where an 'END' signal is displayed on VSS infrastructure that is able to display both a sign and a signal simultaneously, the sign element should remain blank until the 'END' has been cleared or removed. This is to ensure drivers aren't confused by reading the sign and 'END' as one message. Signals that display 'END' shall be shown for a maximum of 3 minutes after tactical signals have been removed.

3.7 Severe weather

Non-visible weather conditions

Speed limits and associated legends should be used to advise motorists of **weather conditions that they cannot see** (such as strong winds or ice) both on the approach to (around 2km before) and through the weather zone as required. See Annex B.2 (a) for a list of tactical weather legends.

'Risk of ice' signs and associated signals shall only be set when appropriate such as when the temperature has dropped to a point where 'salting' is of limited effectiveness or there is freezing rain or rain falling on extremely cold surfaces.

'Risk of hail' signs are available to warn of the likelihood or presence of hail and draw attention to the potential for slippery road surfaces that can present an unexpected hazard. Signs should be set on both sides of the carriageway and removed as soon as the risk has passed.

Visible weather conditions

Speed limits may be considered for weather conditions that drivers can see, if deemed likely to improve safety. We want to discourage blanket setting of speeds for weather conditions that people can see but don't want to prevent speed limits being used when, for example, the operations centre agrees with a trusted source (listed in the work instruction) that a particular situation justifies their use. If speeds are set for weather conditions then a suitable accompanying legend should also be set.

In foggy conditions, signs should be activated on unconfirmed reports and verified as soon as possible for accuracy and continued use.

VMS legends should be used up to 2km in advance of the weather zone to warn drivers of the soon to be experienced weather conditions. Legends may be set after each junction or entry to warn drivers joining the motorway because at higher speeds driving conditions can be more hazardous than on local roads.

Salt spreading

Overuse of salt spreading legends limits VMS available for NTIC to set more helpful strategic messages. Every effort should be made to set salt spreading legends only on the routes that are being treated and at the times the salt spreaders are scheduled to be on those routes. **This legend should be limited to one VMS per junction or one VMS after each access point.**

3.8 Up and over

When an incident takes place within a junction (between the slips) that closes the carriageway and results in traffic being diverted 'up and over', drivers can still continue on their journey subject to a minor diversion. Due to this, an 'up and over' shall only be considered as a closure from a tactical point of view but tactical signing should focus on directing customers to the diversion they will need to take.

Strategically an 'up and over' shall only be considered a potential disruption to traffic and not a full road closure as drivers can still continue on their journey subject to the minor diversion.

If however the exit and entry slip roads cannot cope with the volume of traffic being diverted, and there is a significant increase to journey time, then

strategic legends should be used which both warn of the delays and/or advise an alternate route. These strategic legends shall not advise that the road is closed as drivers can still continue 'up and over' and they have been informed of the delays and/or offered an alternative route.

3.9 Stationary and trapped traffic

When traffic is stationary, being held or trapped behind an incident, unable to move for more than 15 minutes, then ROCs should consider setting VMS to inform customers of the type of incident it is, progress at scene and likely time for clearance. MIDAS should first be disabled so that legends are not overwritten. VSS guidance defines trapped traffic as traffic that is unable to exit the strategic road network at the next available junction due to an incident.

Legends to provide information and instruction:

- Serious collision (Road closed)
- Serious incident (Road closed)
- M* J*-J* now open Queue clearing
- Road now open Queue clearing
- Switch off engine
- Await instruction
- Do not move vehicle
- Stay in vehicle
- Stay with vehicle
- Return to vehicle
- Hard shoulder Keep clear
- Keep hard shoulder clear
- Debris being removed
- Traffic being released
- Air ambulance on scene
- Travel info on local FM
- A/M* J*-J* collision cleared

In addition Annex B.1 provides 'Traffic being held' legends to explain to customers what is happening during rolling road blocks.

Use of collision and incident

Following a business decision to come into line with DfT and the police, we no longer refer to 'accident' on VMS as the word suggests collisions are an unavoidable consequence of road use. Instead we use 'collision'. Where there's no suitable legend to describe a situation such as when there's a spillage, security threat or customer in crisis then 'incident' should be used.

Operators should ensure consistency between tactical and strategic settings about the choice of wording.

Legends to indicate delay or carriageway opening

The information that customers most want to know when trapped is how long it will be until they will be moving. These types of legends are particularly useful when used as part of a sequence. The following time-related legends must only be used if it is certain the road will be re-opened within the next 60 minutes:

- Road reopen by ** am / pm
- Road reopen by midday / midnight

- Road closed until (at least) **am / pm
- Road closed until (at least) midday / midnight
- M*** to reopen by ** am / pm
- M*** to reopen by midday / midnight
- M*** reopen by ** am / pm
- M*** reopen by midday / midnight

Legends that specify carriageway re-opening times shall only be set in consultation with NTIC to ensure that information is consistent.

Sequenced VMS

Although these legends can be set in isolation, communication with customers can be improved by displaying a combination of them in sequence. So for example, when the central reserve barrier is to be removed to allow exit in the opposite direction then recommended legends for display are:

- Do not move vehicle
- Await instruction
- Traffic being released

To communicate to trapped traffic the expected clearance of an incident the following legends could be used:

- Serious incident
- Road reopen by 3 pm

ROCs should consider setting up to four legends in a sequence, with each legend displayed for two minutes, with the operator then blanking the VMS before setting the next message in the intended sequence.

Care should be taken not to set messages unnecessarily or to the annoyance of customers, for example 'DO NOT MOVE VEHICLE' should only be used where there is a perceived risk of drivers attempting to move vehicles and causing a safety hazard.

When a road has been reopened ROCs can indicate that the situation has been dealt with and that traffic flow will be improving by setting 'Collision / Incident cleared'.

3.10 Motorway Incident Detection and Automatic Signalling (MIDAS)

MIDAS is a queue protection, incident detection and congestion management system that uses inductive loops under the road surface or above ground radar to monitor the speed, flow and headway of traffic. The system detects slow moving or stationary traffic and sets reduced speed limits on upstream signals to slow traffic down to protect the back of the queue or to prevent queues from forming. The system reduces speeds to 60mph with the message 'queue ahead' or 'congestion caution', down to 50mph with the message 'congestion stay in lane', and down to 40mph with the message 'queue caution'.

During incidents, slow-moving, queueing or stationary traffic can result in the MIDAS system no longer serving its intended purpose. In these instances, consideration should be given to disabling the MIDAS system where the queue has formed so that 40mph speeds are not displayed, as inappropriate signs and signals add to driver frustration and dissatisfaction.

MIDAS should be disabled within total closures, to prevent inappropriate speeds and messages being displayed on VMS or gantries whilst investigation or clean-up work is taking place. More suitable incident management messages, such as those for trapped traffic, should be used instead. The signs and signals information that is displayed by the MIDAS system can be found in Annex B.4.

3.11 Roadworks and tactical VSS

Contractors and National Highways are responsible for the safe planning and operation of roadworks. Chapter 8 of the Traffic Signs Manual and the standard on mobile lane closures (TD49) set out safe working practices to accommodate roadworks. Signals should only be used for setting up, altering or removing traffic management measures unless signalling for roadworks is in operation and VMS are being used for the duration of roadworks in place of standard temporary traffic management signs.

Portable VMS shall be used as described within the Traffic Signs Manual: Chapter 8. Additionally, if deemed appropriate by the roadworks scheme designer, portable VMS may be used to display a legend providing a travel time through the works or diversion route (see section 4.4).

3.12 No visible activity legends

When roadworks are having an impact on a road but works activities are not apparent to motorists, then legends may be set on portable VMS to support reduced speed restrictions and or narrow lanes. If required, signs shall generally be displayed in advance of works in line with section D4.13.4 of Chapter 8 of the Traffic Signs Manual. This reduces the risk of driver distraction during works where greater concentration can be required in order to pass safely along the altered carriageway. If signs are necessary within works then they should focus on the reasons for lane closures. Approved legends are listed in Annex B.5.

3.13 Testing VSS equipment

When VSS need to be tested by engineers in a live traffic environment the below legends shall be used as described unless speeds are displayed.

Signal under test or Signal tests – Used to warn drivers that either a signal incorporated as part of the sign, or signals located on the same gantry are being tested. This legend shall be used when both the sign and signal are being tested simultaneously.

Sign under test – Used to warn drivers that the sign is being tested. Not to be used for signal tests.

Lane signals under test – Used within smart motorways but only when the lane signals are displaying a test pattern.

During testing any lines of the VMS not displaying a legend shall either be left blank or display the ‘checkerboard’ test pattern. The above legends shall not be used within one junction of signals displaying mandatory speed limits.

To explain speed limits that are set for commissioning technology in the final stages of opening new sections of smart motorway, the following legends may only be used at the same location when approved by the scheme’s project manager and the VSS policy team.

Speed limits in force for system test – preferred legend, to be used where the sign size will accommodate it.

Speeds apply System test – only to be used where space prevents display of the preferred legend.

3.14 Smart motorways opening

To encourage appropriate use of lanes on smart motorways all-lane running sections, setting ‘Keep left unless overtaking’ should be considered in appropriate locations for the first two weeks of opening. Further targeted use of the legend may be considered where required. This legend will be set by NTIC.

3.15 Speed limits for air quality

VSS should be considered to communicate a reduced speed limit that has been introduced to manage air quality. Where speed limits are applied for this purpose, one VMS along each affected junction should display the explanatory legend ‘Speed limit for air quality’ to assure customers that speeds are correctly set and why.

Using VSS to manage air quality on a section of road is subject to approval by the Customer Experience Director, by first submitting a request to the VSS policy team.

4.0 Strategic signs requirements

4.1 Introduction

Strategic VMS are used to provide information to road users in advance of any incidents or events affecting either the road they are travelling on or other routes.

Due to the number of potential legends it is not practical for this document to list all approved strategic legends. Instead a sample of the most commonly used legends is provided (Annex B).

A National Incident Liaison Officer (NILO) or a National Highways Duty Manager (NHDM) may need to vary an authorised legend: this should be first approved with the VSS policy team during office hours. Out-of-hours, approval will rest with the NHDM. However, the NHDM may activate the on-call senior leadership for advice and approval. The VSS policy team shall be made aware of any legend variations used.

Where the variation of a legend has previously been approved, the NILO or NHDM should alert the VSS policy team as soon as it is reasonable to do so, notifying them that it has been used again.

All examples provided in this section have assumed that either a 3x18 or a 4x12 sized VMS is available. Where smaller sized VMS are to be used, legends shall be modified as appropriate and the order of information shall be maintained where possible.

4.2 Future notification of roadworks

To supplement (Traffic Signs Manual) Chapter 8 black and yellow signing, VMS shall be considered to warn of future roadworks that require a full road closure and are expected to either cause delays or require the use of an alternative route which may not be suitable for all types of vehicle. These legends should generally be displayed one week prior to the roadworks taking place and should be requested at least two weeks in advance. Roadworks legends should display information in the order below.

1 – Place / location

2 – Times of closure*

3 – Date(s) of closure

* Times of closure examples are 'Night closure', 'Night closures', 'Weekend closure' or 'Weekend closures'.

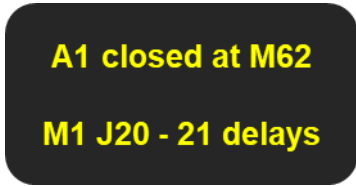
Legends notifying of future roadworks should be displayed a maximum of 5km or two junctions from the roadworks to ensure relevance unless a strategic diversion is needed or the traffic management plan requires display further away.

On A-roads where fixed VMS are not always available then portable VMS may be used to perform this task, as described within the Traffic Signs Manual: Chapter 8.

4.3 Dual legends

Where multiple incidents or events have occurred and more than one strategic legend needs to be displayed on the same sign, two legends may be shown on a 3x18 VMS, providing the middle line is left blank. Information

about the closest incident or event should always be displayed on line 1. An example is shown below.



4.4 Travel time messages (TTVMS)

Travel time messages provide travel time information:

- To a junction or destination located on the road being travelled on.
- Via different roads to the same junction or destination.
- Through long term roadwork schemes.
- For off network diversion routes for long term roadwork schemes.

Travel times are based on a combination of historical and near real time information and are calculated every minute. When there are delays on the network above an agreed threshold the legend shall automatically switch from a travel time to an estimated delay time legend.

When a delay time legend is displayed the authorised delay reason(s) include: 'Collision', 'Roadworks', 'Obstruction', 'Floods', 'Incident', 'Strong winds', 'Large load' or 'Severe weather'.

Unless providing multiple junction travel times a TTVMS legend should display both a junction number and a place name destination or intersecting road number where possible. The place name used should match the place name shown on the primary or non-primary route directional signs.

TTVMS legends show average journey times, and it is reasonable to expect that actual speeds will vary over the TTVMS distance displayed.

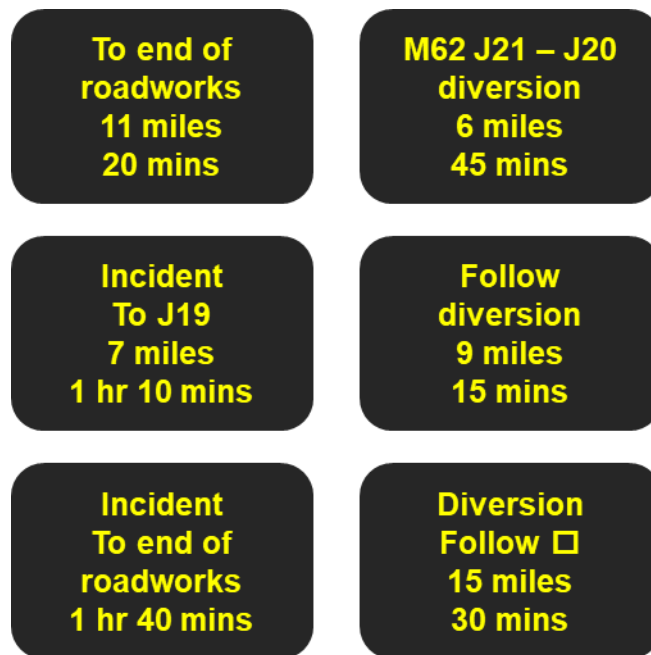
Legends must not show an average journey time which is only achievable by driving faster than the legal limit for the section of road being travelled upon.

Shown below are examples of TTVMS legends followed by detailed information on how to construct them.



Travel time variable message sign (TTVMS) formats			
Message category	Top line	Middle line	Final line
Single destination	To Destination	distance	time
	<i>Examples</i> 3 lines: To J18 Bristol 43 miles 38 mins 2 lines: To J1 for M60 16 mins		
Multiple destinations	Destination time	Destination time	Destination time
	<i>Example</i> 2 lines: J17 8 mins J15 13 mins		
Alternative routes to the same destination	To Destination	via route time	via route time
	<i>Example</i> To M66 via M60 E 32 mins via M60 W 28 mins		

The following legends have been authorised to provide travel times through roadworks in different scenarios and are intended for display on portable VMS:



4.5 Signing for delays

When signing for delays, the actual delay time above profile calculated by NTIC shall be displayed on VMS. When delay data is not available, the use of 'Delays', 'Long delays' or 'Severe delays' is permitted. See Annex D for definitions of delay severity.

4.6 Signing for closures

A road is **closed** when:

- traffic is directed to leave the carriageway at a junction and cannot re-join the carriageway at the same junction, or
- an operational decision has been made to close the road and this has been formally logged, for instance when mandatory signals or on-scene resources are unavailable to immediately enforce a closure.

A road is **blocked** when traffic is being held and cannot leave the carriageway at the next available exit.

An **up and over** is when traffic is directed to leave the carriageway at a junction but can still access the carriageway again at the same junction. This is not considered a closure from a strategic point of view – see 3.8.

When a road is closed, NTIC shall always consider displaying a reason (see Annex B.10), as well as delay or closure times, in conjunction with closure signs; this helps customers to make an informed decision (see section 2.7).

In some closure scenarios, it's advantageous to only provide numeric delay times and to not set closure signs, because customers can easily continue their journey by use of diversions along network links and distributor roads (an extended 'up and over').

NTIC shall make the decision on which signing option is likely to give greatest overall customer benefit with input from the ROC. NTIC shall only set closure signs when a road is closed as described above.

4.7 Expected closure duration

If a section of road has been closed, then a legend based on the below examples should always be considered, to inform drivers of the expected time to reopen. ROCs shall be responsible for providing NTIC with the initial time to be displayed and all updates.

**M5 J10 – J11
closed until
at least 10am**

**M4 J7 – J9
closed until
at least Mon 2pm**

As an incident evolves, if the expected duration of a closure changes, ROCs, NILO or the NHDM shall instruct NTIC to revise the time to match the anticipated re-opening time.

4.8 Now open

To highlight that a change from 'closed' to a delay time means that the road has reopened, the term 'now open' may be used in strategic VMS legends. This legend should be displayed for a maximum of 30 minutes once a road has reopened, although it can be used for longer in exceptional circumstances. An example of a suitable legend is below.

**M180 J1 – J2
now open
30 mins delay**

4.9 Other road authority legends

The Traffic Management Act 2004 requires National Highways to facilitate the movement of traffic on all roads. To support this, our VMS should be used to display information about traffic conditions on other roads.

These legends should only include information about delays or events no further than 10km from the motorway junction or A road exit, unless it can be demonstrated that signing for events further afield will be of clear benefit to customers on our network.

If these legends are to be set remotely by third party access, the VSS policy team shall agree the legends for use by each local authority and agree which VMS they shall be used on. The legends shall not include information which instructs drivers to modify their route on the strategic road network as only a National Highways control room has the necessary information and authority to give such instructions.

Requests to use VMS to support the introduction of local authority clean air zone (CAZ) charges should be made to the VSS policy team. Annex B13 provides examples of legends that the policy team will consider approving.

4.10 Legends for other modes of transport

Legislation (RTRA) defines VSS as being used for the regulation of traffic and not for any other purpose. Therefore, VSS cannot be used to highlight the availability of other modes of transport or to encourage their use. However, it is acceptable to warn of any delays users may experience when using other modes of transport as detailed below.

Airport legends

Information about the closure of airport terminals or car parks may be shown where the information is needed for drivers who will be required to use another access route to the airport.

If an airport is closed, then VMS should be used to warn drivers but only with the agreement of the airport.

If an airport remains open but is experiencing delays in processing passengers due to flight delays, then unless this is affecting our road network VMS legends shall not be used as this information is not traffic related as it does not require drivers to do anything different; they are still to proceed to the airport as normal.

If a closure of airspace happens then the below legends should be used to warn drivers. The decision when to set these legends needs to be made at an operational level using agreed procedures.

**UK airspace
closed
Flight delays**

**English airspace
closed
Flight delays**

**Scottish airspace
closed
Flight delays**

**Welsh airspace
closed
Flight delays**

Park and ride legends

Information about the closure of a park and ride facility located close to the strategic road network may be displayed providing the closure is unexpected, and not a business-as-usual closure. A business-as-usual closure would be where the facility is closed as normal, such as outside its regular opening hours. An unexpected closure might be a security issue, or flooding.

When a park and ride facility is full and alternative facilities exist within a reasonable distance then legends may be used to advise of the alternative, but only if the alternative is known to have sufficient spare capacity available. Permanent park and ride facilities should be signed for using permanent traffic (hard) signs.

In addition, drivers can be advised of park and ride facilities as part of special event legends (see section 4.13), especially where park and ride facilities are temporary.

Train station closures

Information about the closure of a major rail station or one that is likely to affect customers on the SRN is permitted providing the closure is unexpected, and not a business-as-usual closure. A business-as-usual closure would be where the facility is closed as normal outside its regular opening hours. An unexpected closure might be a security issue, or flooding.

Alternatives shall not be offered as it is unlikely that any one station will have the spare capacity for such a large amount of people.

Rail disruption

When multiple train cancellations or significant delays are being experienced on a major train route, then legends may be set to warn of this but only at the request of the relevant rail authority.

The ROC can request NTIC to set legends constructed from the options below when industrial action among train operating companies is expected to noticeably affect traffic levels in their region.

Legends for rail industrial action		
Line 1 options	Line 2 options	Line 3 options
Rail strike Rail disruption	DD-DD Month DD Month Day DD Month Expect delay(s) Busier roads	Expect delays Delays expected Expect congestion Busier roads Expect busy roads Plan your journey*

* This option should only be used when it is uncertain whether there will be an impact on the roads.

Port disruption

Delays at sea ports can cause severe traffic delays. Due to this, a number of legends have been developed to advise freight drivers; but they must only be used in consultation with the port authority, ensuring accuracy, eg. 'no sailings' must not be used when some operators are still sailing from the location mentioned. 'Operation Brock' is the most commonly known response

to severe cross-Channel disruption affecting port and Eurotunnel operations. The full list of legend options is shown below:

Legends for port disruption		
Line 1 options	Line 2 options	Line 3 options
[Location] Dock [Location] Ferry (Port) [Location] Port N* at [Location] Docks	long delays delays possible closed to no sailings closed [Date]	use N*, N* HGVs use N*, N* container traffic until (after) [time / date] delays possible long delays avoid area

4.11 Toll roads

When strategic diversions are set, they shall not instruct drivers to use a toll road. Due to cost implications, the choice to use a toll road is the decision of drivers, however, strategic diversion legends may include information about the status of a toll road.

If a toll road temporarily allows free usage of the road, and a VMS legend is required to inform drivers of this, the term 'Charges suspended' shall be used within the legend. 'Toll suspended' shall not be used as this could be interpreted by some drivers as meaning the toll road is closed.

Once any charges are re-introduced, then the term 'Charges reintroduced' shall be used within a legend to inform drivers of the charges being reinstated.

Legends may be used beyond normal time limits to encourage compliance with the Dartford Crossing charge – see Annex B.13 for legend options.

4.12 Campaigns

The use of VMS to display legends which support road safety campaigns will only be granted exceptionally and by approval of the Customer Experience Director in Customer, Strategy and Communications. We will consider messages that are used at specific locations with known safety risks. Campaign legends must not include information which encourages drivers to respond in a way that would be unsafe if carried out immediately.

Of all the types of VMS messages, drivers find campaigns the least helpful for their journeys⁴, therefore we use them in a targeted manner as part of a coordinated series of activities.

Requests to display campaign legends for national, regional or local issues should be submitted to the VSS policy team in the first instance, as should requests for new campaign messages in line with guidance in Annex C. Please note that the authorisation process for new messages through DfT, takes at least 3 months before any new legend can be displayed.

When used, campaign legends should only be displayed on suitably located VMS and care should be taken to limit the number of VMS that display the legend. The full list of campaign legends that have previously been authorised for use is found in Annex B.14.

⁴ 2018 Transport Research Laboratory - Human Factors Review of Variable Signs and Signals Policy. R Robbins, J Mitchell, K Fairall and T Hyatt.

4.13 Special events

In addition to the required temporary traffic (hard) signs, VMS may also be used to warn drivers of special events if they are expected to cause delays to through traffic. For any new events where historical information is not available then the criteria shown below shall be applied to inform the decision.

Evidence required to determine if VMS use will be considered for special event signing		
Category	Evidence	Secondary evidence
Event location	<ul style="list-style-type: none"> ▪ The event is located on or adjacent to the strategic road network. 	<ul style="list-style-type: none"> ▪ The event is located close to the strategic road network.
Nature of the event	<ul style="list-style-type: none"> ▪ At least 75% of attendees are expected to arrive within a one hour period. ▪ The majority of attendees are expected to arrive or leave the event during peak hours. ▪ Predicted attendance is greater than 25,000 visitors per day if close to motorway. ▪ Predicted attendance is greater than 15,000 visitors per day if close to trunk road. 	<ul style="list-style-type: none"> ▪ The attendees will be arriving in vehicles which in large quantities can cause delays eg horse drawn vehicles.
Surrounding road network	<ul style="list-style-type: none"> ▪ Other events up to two junctions away are already causing road users to experience congestion on their journey eg roadworks 	
Alternative transport options	<ul style="list-style-type: none"> ▪ Less than 25% of attendees are expected to arrive by public transport. 	
Other factors	<ul style="list-style-type: none"> ▪ There is a DfT or National Highways Board requirement for signing. 	<ul style="list-style-type: none"> ▪ The event is nationally or internationally important.

The RTRA 1984 does not allow VMS to be used for advertising. Therefore an event description shall be used (eg BOAT SHOW), and not the name of the event. Inevitably some event descriptions will match the name of the event and this will not be considered advertising. Additionally, to help customers and to manage traffic more effectively, it may be necessary to use event names if any of the conditions below apply.

- a) More than one special event is taking place close to another, which requires each special event to have an individual distinct legend.
- b) Using an event description does not give a clear understanding of the traffic problems an event will cause, or the event is expected to cause disruption at more than one location. For example, using 'Truckfest' gives some indication of the types of vehicles that will be going to the event.
- c) The VMS is being used to support during-event signing, and using the event name will help road users to complete their journey safely and

efficiently. It is then acceptable to use the name of a special event, even if the special event name was not authorised for use in pre-event signing.

Due to concerns over advertising, only the VSS policy team can approve legends using an event name for pre-event signing.

Special event legends shall only normally be considered for display a maximum of 5km or two junctions from the location of the expected delays. The exception to this rule is when a strategic diversion is advised as part of the during-event signing – these shall be shown in the appropriate location no matter the distance from the event.

Where the delays are expected to take place off the strategic road network, special event legends shall only be permitted about events which are located no further than 10km from the closest junction or exit, unless it can be shown that signing for an event further away will be of clear benefit to customers on our network.

Pre-event signing may be used for a maximum of two weeks before an event to warn drivers of expected delays, although the standard warning shall be for one week. During-event legends shall not be used where there are already permanent local direction signs in place, unless alternative route legends are to be displayed to assist with traffic management.

Seasonal delays at major retail parks and events such as the arrival of Christmas markets in city centres, shall not ordinarily be considered a special event, as the delays they can cause should be anticipated by drivers.

Only the VSS policy team can approve the use of National Highways VMS to display pre-event signing legends for delays associated with retail parks.

Special events which are expected to cause disruption within large urban areas should be advised to drivers on VMS using the below order of information, but only with the agreement of the relevant local authority - the legend shall not be used without this agreement.

- 1 – Location and event description
- 2 – Date(s)
- 3 – Delays possible or expect delays

Examples of appropriate legends are below.



4.14 Postponed or cancelled events

Where legends have been used to advise drivers of a future event (roadworks or special event) and this event is either cancelled or postponed within 24 hours of the event commencing, then legends may be set using either the term 'cancelled' or 'postponed' to inform drivers of the change.

Due to the number of roadworks cancelled at short notice, VMS should not be used to warn of the cancellation or postponement unless they are high profile and would cause high volumes of traffic to be diverted.

If a special event that, while attracting a large number of visitors was not expected to cause delays, is cancelled or postponed at short notice, legends using the event name may be used to warn of this, even if pre-event signing was not needed.

If a major attraction (a theme park or zoo, for example) is closed due to unforeseen circumstances (such as a power cut or security alert) then due to the number of people likely to visit, a legend using the attraction name may be set to warn of the closure.

If an attraction is expected to be closed for more than one day, legends shall usually only be used to warn of the closure on the first day, as it is the responsibility of the attraction to provide long-term closure information to customers.

Certain special events such as county shows have a limited capacity and often sell out on the day. In such circumstances it is acceptable to warn drivers of this by VMS if it is anticipated that delays will occur due to queuing traffic being turned away from the special event venue. In these circumstances one of the below legends shall be used.



*Closed is only to be set at the agreement of event organisers

4.15 Crisis management

If a non-traffic incident has occurred and there is a risk to public safety or health, legends may be displayed to warn customers and advise of appropriate actions.

In response to an incident, National Highways Duty Managers (NHDM) and the affected region(s) will be responsible for agreeing display of appropriate legends from the list below.

Where active, Regional Silver and Gold Command Groups should also be consulted.

For multi-agency incidents, consideration should be given to the communications of other responders to ensure that we are providing consistent messages. The regional Emergency Planning Teams or National Incident Liaison Officer (NILO) will be able to advise on this.

Consideration should be given to how far from the incident, legends should be set to benefit customers.

To provide fuller details of the situation VMS can be paired to combine legend elements. When this is done, the location should be included in each VMS. Legends must not scroll or alternate. It is not necessary to include both a line

2 and line 3 option, but always ensure selections make sense when combined in a legend.

Legends for security incidents		
	Legends	Notes on usage
Line 1	(Avoid) Location Stay home	Instructions to avoid an area or to stay home should only be used in major incidents where there is a potential risk to life.
Line 2 (Problem)	Security alert	Police activity such as investigating suspect packages or premises – low level response.
	Incident	An event or situation that requires a response from emergency services or other responders. Effects limited to a single location or localised event(s). Minimum disruption to area.
	Major incident	An event or situation, with a range of serious consequences, which requires special arrangements to be implemented by one or more emergency responder agencies – high level response.
	Flooding	Warnings only to be provided when conditions are causing serious disruption that is likely to affect our customers such as in large towns that receive significant traffic from our network.
	Severe weather	
	Storms	
Storm damage		
Line 3 (Effect or guidance)	Delays (possible)	
	Expect delay(s)	
	Roads closed	
	Use other routes	
	Turn on radio	Use only when information provided on VMS is insufficient for customers to remain safe and media information that will assist public safety is being broadcast
	Seek info	
	Close windows	For use when there is immediate risk to health by inhalation of noxious fumes such as in a chemical leak. In such cases roads should be closed and traffic directed away from the area.
	Turn off air con	
	Avoid area	Use only in major incidents in which there is a potential risk to life by customers continuing to the stated location
	Essential travel only	

Examples:

Pairing of two 2x12 VMS for a major incident, in which lives may be at risk if customers continue their journey to the stated destination.

**South London
Incident**

**South London
Avoid area**

Pairing of a 3x18 and a 2x16 VMS for a major incident in which lives may be at risk if customers continue their journey to the stated destination and for which radio stations are providing information that will help people remain safe.

**Birmingham centre
Major incident
Avoid area**

**B'ham centre
Turn on radio**

Single VMS warning of flood conditions that will affect a significant proportion of customers on our network.

**Worcester
Flooding
Roads closed**

4.16 Area wide severe weather warnings

When severe weather is experienced either nationally or locally, strategic legends based on the below examples should be used to warn drivers, both before (advanced warning) and during the severe weather conditions. Be aware of conditions in neighbouring regions and make sure warnings remain appropriate for the location as the situation develops. For example, if West Midlands are advising that strong winds are present now then it might not be appropriate for East Midlands to be referring to forecasts of strong winds at the same time.

ADVANCED WARNING

**Weather warning
West Midlands
Sat 15 May**

DURING

**West Midlands
Severe weather
Expect delays**

If the advanced warning is only required to warn of 'Strong winds', then this should be advised of within the legend instead of the term 'Weather warning'. For all other types of weather 'Weather warning' should be used.

Flexibility may be permitted in constructing weather warning legends if:

- Describing the nature of the severe weather will help customers.
- We need to make advice consistent with the message from other authorities.
- Rearranging word order makes a legend easier to read.

Examples of legends constructed to meet specific needs are shown below.

**Lake District
Heavy snowfall
Consider avoiding**

**Heavy snowfall
warning
for South West**

'Consider avoiding', 'Avoid area' and 'Essential travel only' require approval by the national or regional lead (eg Gold Commander).

Met Office weather warnings can help decisions on setting related VMS. For example, when there is a red weather warning for extreme heat, the legend below can be used to indirectly encourage people to take breaks, as can the campaign message, 'Don't drive tired'. However, the same message displayed during ordinary high summer temperatures will feel less relevant to customers.

**Extreme heat
Carry water**

4.17 Unavailable VSS and roadside technology

If VSS unexpectedly become unavailable for use, the below legend should be set to warn drivers where possible. The same legend may be used on the approach to VSS unavailable due to power cuts.

**M23 J8 – J9
No signals**

If the VSS have become unavailable due to cable theft or vandalism then the term 'due to vandalism' may be also included if deemed appropriate. This should only be included when the police have been informed of the reason for the lack of signals and National Highways' press office made aware.

**M602 J2 – J3
No signals
due to vandalism**

Where there is a loss of roadside technology because of a planned or unplanned outage and it's still possible to set VMS prior to the affected section of road then the region should consult with the NHDM to consider if VMS should be set to warn customers. VMS options are provided in Annex B.15.

If opting to set VMS where only one type of technology is unavailable, consider legends which reflect this. Examples are shown below.

**M6 J10 – J12
Power
failure
No signs**

**Tue 5 Mar
4am – 6am
No SOS
phones**

Where non-visible assets such as CCTV or Stopped Vehicle Detection or where multiple technologies are affected then the following, more general legends should be considered:

**M6 J13 – J16
Tech repairs
in progress**

**M4 J10 – J11
Upgrading
technology**

If ROCs set speed restrictions for technology issues then legends from Annex B.15 should also be set to explain the restrictions.

4.18 Motorway service area legends

Motorways service area operators can request legends advising when fuel supplies or electric vehicle charging are not available. See Annexes B12 (a), (b) and (c).

Annex A: Authorised signals

Schedule 15 of the [TSRGD 2016](#) provides a list of authorised signs and signals, for use.

Additional signals, required for smart motorways all-lane running, authorised by Department for Transport (DfT) most of which were included in the 2016 revision of TSRGD can be found in the appendix to the [Driver Information Requirements Specification v3.2](#)

Key documents

This document is aligned with:

1. Motorway Traffic Regulations 1982
2. Road Traffic Regulation Act (RTRA) 1984
3. The Design and use of Directional Informatory Signs – Local Transport Note 1/94
4. The Design Manual for Roads and Bridges (DMRB)
5. The Traffic Signs Regulations and General Directions (TSRGD) 2016
6. Traffic Management Act 2004
7. Traffic Signs Manual: Chapter 8
8. Traffic Advisory Leaflet 04/11 – Temporary Traffic Signs for Special Events
9. Traffic Advisory Leaflet 01/15 – Variable Message Signs
10. TOPAS 2516 B Revision A (v4) – Performance Specification for Discontinuous Variable Message signs
11. BS EN 12666:2014

Related documents

This document should be read in conjunction with:

1. Traffic Operations Policy.
2. [GD 301](#) Smart motorways design requirements

Annex B – Authorised variable message sign legends

The legends below in Annex B.1 to B.16 are all authorised for use on the strategic road network. Any criteria for use is shown when appropriate.

All route numbers have been presented as ‘N*’ unless otherwise stated.

All junction numbers have been presented ‘J*’.

‘N’ is limited to ‘M’, ‘A’ and ‘B’.

Unless stated differently the ‘*’ is limited to characters or numerals and may refer to more than one character or numeral as required.

The brackets for A* (M) motorways must not be shown within legends.

‘SLOW’ and ‘SLOW DOWN’ do not appear in sections of smart motorways showing mandatory speeds and so have been placed within brackets below.

Additional VMS legends, required for smart motorways (hard shoulder running) operation can be found in [this](#) Share link.

Alternative VMS legends, required for smart motorways (all-lane running) can be found in [this](#) Share link.

The full set of legends that ROCs can set are listed in [this](#) Share link.

B.1 Tactical incident management legends	
Legend	Criteria for use
Air ambulance on scene	To inform trapped traffic on either side of the carriageway that remedial activity is underway. This legend also indirectly explains why both sides of the carriageway may be closed or blocked – for safety in view of helicopter downdraught.
Animals in road (– SLOW)	Due to the unpredictability of stray animals, operators should set these legends on both carriageways on the approach to the location. Operators should also consider setting lower speeds.
Animals on slip road	To warn traffic that animals are on the next slip road but not on the main carriageway. Only to be used when the situation is being monitored so that Animals in road - SLOW can be displayed immediately if animals move onto the carriageway.
Collision J* roundabout	To provide warning of a collision on the motorway roundabout at the stated junction.
Collision (SLOW DOWN)	To warn drivers of a collision on the main carriageway.
Collision on slip road	To warn drivers of a collision on the off-slip.

B.1 Tactical incident management legends

Legend	Criteria for use
Collision-use hard shoulder	To support the emergency use of the hard shoulder as a temporary running lane only when determined by the officer in charge of the scene. Only to be used immediately before or after the commencement of the temporary use of the hard shoulder and must be used in conjunction with hard signing (see Section 8 of <i>Police Standard National Motorway Manual</i>).
Congestion (SLOW DOWN)	To protect the tailback of traffic. Requires monitoring to ensure continued validity.
Cyclist in road (- SLOW)	To warn traffic of a cyclist on the carriageway.
Debris in road (- SLOW)	To be used when potentially hazardous objects are located on the carriageway. It is suggested that for large objects or stranded vehicles a more appropriate legend would be Obstruction SLOW DOWN or Stranded vehicle-SLOW.
Debris on slip road	To be used when potentially hazardous objects are located on the slip road. It is suggested that for large objects and stranded vehicles a more appropriate legend would be Obstruction on slip road.
Delays due to earlier incident	To explain why there may be no visible reason for delays. Incident can be replaced with Road closure(s).
Do not use hard shoulder	To be used either: When motorists are illegally using the hard shoulder as a running lane. Or when there is an incident on the hard shoulder during planned use as a running lane during roadworks. Or after the hard shoulder has been used as a running lane to further advise motorists that the temporary arrangement has been withdrawn.
Hard shoulder Keep clear	To keep the hard shoulder clear for incident access.
Hard shoulder for emergency use only	To clarify that the hard shoulder is not being used as a running lane in dynamic hard shoulder sections of smart motorway.
Incident (SLOW DOWN)	To be used only when none of the specific unconfirmed or confirmed warning legends are appropriate such as when the police are dealing with a customer in crisis on a bridge.
Incident J* roundabout	To provide warning of an incident on the motorway roundabout at the stated junction.
Keep hard shoulder clear	To keep the hard shoulder clear for incident access.

B.1 Tactical incident management legends

Legend	Criteria for use
Lane * closed (- SLOW)	A temporary lane closure in support of incident management. This legend must not be used where a lane drop or gain is in close proximity (to avoid potential confusion over lane numbering). This legend shall be set at the same point as corresponding matrix signals that provide lane closure information. Distance from the actual closure should be considered so as not to reduce road capacity over too long a distance.
Lanes *** closed (-SLOW)	Temporary closure of up to three lanes in support of incident management. This legend must not be used where a lane drop or gain is in close proximity (to avoid potential confusion over lane numbering). This legend shall be set at the same point as corresponding matrix signals that provide lane closure information. Distance from the actual closure should be considered so as not to reduce road capacity over too long a distance.
Lane closed for clear up	To explain why a lane has been closed, including times when there is no visible worker activity, for example during clear up of an oil spill.
Lane closed for emergency vehicles (KEEP CLEAR)	To support lane closure signals for incident access in sections of smart motorway.
Lane closed for incident access	To support lane closure signals for incident access in sections of smart motorway.
Lane(s) closed for recovery	To explain that lane(s) are closed to recover a vehicle. The legend also indicates that the situation is being managed.
Lane closed on slip road	To support a temporary physical lane closure on the next accessible slip road.
Lane closure (SLOW DOWN)	To be used to support a temporary physical lane closure where a lane drop or gain is in close proximity and lane numbering is not clear.
Leave at next jct / junction	To be set in advance of a junction to direct all vehicles to leave the carriageway.

B.1 Tactical incident management legends

Legend	Criteria for use
Mobile works (SLOW DOWN)	This legend should only be used after consultation with those working on the road and agreed segments of road in which the Mobile Lane Closure (MLC) will operate are determined. The sign will only be displayed within the predetermined segments. To be used in conjunction with signals where available. Where CCTV is available more precise monitoring of the MLC's progress and use of the legend can be undertaken by control room operators when other demands permit.
(N* J*-J*) Collision cleared	To inform traffic immediately affected by a collision that it has been cleared to indicate that traffic flow will be improving. Location details may be included.
(N* J*-J*) Incident cleared	To inform traffic immediately affected by an incident that it has been cleared to indicate that traffic flow will be improving. Location details may be included.
Obstruction on slip road	To be used where there is a large object obstructing the slip road and the resulting tail back is not then affecting the main carriageway.
Obstruction (SLOW DOWN)	To be used when a large object is obstructing the carriageway.
ONCOMING VEHICLE	A vehicle travelling against the flow of traffic creates extreme danger, its movement is unpredictable and signalling systems must be used immediately to warn of its presence irrespective of whether the report is confirmed or unconfirmed. A blanket 20mph maximum speed should be set in the vicinity of the reported location and the 'oncoming vehicle' legend displayed on both carriageways. Operators MUST attempt to monitor the progress of the vehicle. It is imperative that signals and any legends are regularly updated.
Pedestrians in road (- SLOW)	To be used where, by virtue of their actions, pedestrians appear likely to act unpredictably. Operators should consider setting these legends on the approach to the location on both carriageways and should also consider setting lower speeds.
Pedestrians on slip road	To warn traffic that pedestrians are on the next slip road but not on the main carriageway. Only to be used when the situation is being monitored so that PEDESTRIANS IN ROAD - SLOW can be displayed if pedestrians move onto the carriageway.
Queue on slip road	This legend may be used to protect the tailback of traffic on the off-slip, but then requires regular monitoring to ensure continued validity.

B.1 Tactical incident management legends

Legend	Criteria for use
Queue (SLOW DOWN)	This legend may be used to protect the tailback of traffic but then requires regular monitoring to ensure continued validity.
Recovery in progress	To inform that a vehicle is being recovered and that the situation is being managed.
Red X means lane closed	To warn of red X settings ahead or as part a planned campaign.
Report of animals	To warn traffic that we have received an unconfirmed report of animals on or around the carriageway in the area. Should be set on both carriageways.
Report of blocked lane	To warn traffic that we have received an unconfirmed report of a broken-down or stranded vehicle(s) on the carriageway in this area.
Report of collision	To warn traffic that we have received an unconfirmed report of a collision in the vicinity.
Report of cyclist	To warn traffic that we have received an unconfirmed report of a cyclist on the carriageway. Consider setting on both carriageways.
Report of debris	To warn traffic that we have received an unconfirmed report of debris on the carriageway in this area.
Report of fire	To warn traffic that we have received an unconfirmed report of a fire on or around the carriageway, including verge areas and adjoining land.
Report of pedestrians	To warn traffic that we have received an unconfirmed report of pedestrians on or around the carriageway in the area. Consider setting on both carriageways.
Report of obstruction	To warn traffic that we have received reports of a large object obstructing the carriageway in the vicinity.
Report of vehicle fire	To warn traffic that we have received an unconfirmed report of a vehicle on fire in the area.
Rejoin main carriageway	This legend caters for the temporary use of the hard shoulder but must be used in conjunction with hard signing and should only be used close to the hard signing. It can also be used where traffic has been diverted temporarily onto a dedicated vehicle lane (eg bus lane).
Serious collision (Road closed)	To inform traffic when it has become trapped as a result of a collision.
Serious incident (Road closed)	To inform traffic when it has become trapped as a result of fires, spillages, or a non-traffic related incident affecting the road such as a security threat or with a customer in crisis on a bridge.

B.1 Tactical incident management legends

Legend	Criteria for use
Skid risk on slip road	To be used when there is a temporary skid risk on the next slip road.
Skid risk (SLOW DOWN)	This legend caters for an incident-related temporary skid risk such as an oil spillage. Maximum speed advised may be set after advice has been sought from the officers at the scene. The incident will need to be continuously monitored. This legend must not be used for a skid risk generated from design or structural defects. Hard signing should be used instead in such a situation.
Slip road closed (- SLOW)	To be used to give advance warning of a slip road closure within a tactical environment.
Slow moving large load	This legend shall only be used to support a police or TO escort of an abnormal load which is likely to have a serious adverse effect on traffic flows. The control room operator should be regularly updated with progress allowing a more precise use of the legend.
Slow moving vehicle	To be used to warn of a vehicle whose low speed presents a hazard or is adversely affecting traffic conditions. The vehicle's progress should be monitored and the legend set accordingly.
Slow vehicle joining ahead	To warn traffic of a vehicle joining the main carriageway from an emergency area.
Smoke (SLOW DOWN)	This legend should be used for smoke originating either inside or outside the boundaries of the road. Consideration should be given to the use of this legend on both carriageways, but should be monitored to ensure continued validity.
Stranded vehicle (- SLOW)	To be used when there is a vehicle stranded either on the main carriageway or other parts of the road where danger or adverse driver reaction is likely. This excludes vehicles correctly positioned on the hard shoulder.
STOP – Road closed	Must be used only to support the display of red Xs that are being used to close a road.
Traffic held	To warn traffic approaching a rolling road block and to inform why it is stationary. This legend should be supplemented by a time: for * mins or by selecting one of the reasons: clearing road, (removing) debris, for animals, for collision, for cyclists, (for) pedestrians, for repairs, for safety, (for) slow vehicle, for incident.

B.1 Tactical incident management legends

Legend	Criteria for use
Vehicle fire (SLOW DOWN)	To be used when a vehicle fire has been confirmed by CCTV or an officer at the scene. This may be before officer arrives on the scene. Signalling for lane closure(s) may also be applied if available and applicable. Regular monitoring is required.
Vehicle fire Lane closure	To warn of a vehicle fire and that a lane has been closed.
Vehicle fire Lane(s) *(-*) closed	To warn of a vehicle fire and the affected lane(s).
Workforce in road (- SLOW)	Only to be used for setting up, altering or removing traffic management measures on the main carriageway. At all other times Chapter 8 'hard signing' is to be used. It will only be activated when the workforce is on the scene and they have contacted the control room. Similarly it should only be removed when the workforce report completion of their traffic management task. It should not be removed, even if another incident occurs within the immediate vicinity, until the safety of the workforce can be ensured.
Workforce on slip road	Only to be used for setting up, altering or removing traffic management measures on the slip road. At all other times Chapter 8 'hard signing' is to be used. It will only be activated when the workforce is on the scene and they have contacted the control room. Similarly it should only be removed when the workforce report completion of their traffic management task. It should not be removed, even if another incident occurs close by on the main carriageway or the off-slip until the safety of the workforce can be ensured.

B.2 (a) Tactical weather legends

Legend	Criteria for use
Floods (SLOW DOWN)	To be used when water has made at least one lane impassable.
Fog (SLOW DOWN)	To be used only where blanket fog is confirmed to be present, or is set automatically by fog detection equipment. When set manually the need for continued use must be carefully monitored. N.B. care is needed when using CCTV to determine visibility as it can distort or exaggerate perception of fog density.
Fog patches (SLOW DOWN)	To be set where there is intermittent or moving fog, particularly where control room or operational staff are not in a position to continuously monitor visibility. This legend can also be set automatically by fog detection equipment. Care is needed when using CCTV to determine visibility as it can distort or exaggerate perception of fog density.
Risk of hail (SLOW DOWN)	To warn of the likelihood or presence of hail and draw attention to the potential for slippery road surfaces that can present an unexpected hazard.
Risk of ice (SLOW DOWN)	See section 3.7.
Salt spreading	This legend should only be used after consultation with National Highways' service providers and agreed routes the salting spreaders will operate, and their timings are determined. It is not ordinarily used with signals but is intended to provide warning to road users. This legend should be limited to one VMS per junction or one VMS after each access point.
Snow (SLOW DOWN)	To be used only when snow is confirmed to be falling and affecting visibility, or has visibly settled on the carriageway.
Snow plough (SLOW DOWN)	To be used only after consultation with the service provider and agreed segments of road in which the snow plough will operate are determined. The sign will only be displayed within the predetermined segments. It is not ordinarily used with signals but is intended to provide prior warning to road users. Where CCTV is available, more precise monitoring of the snow plough's progress and use of the legend can be undertaken by control room operators when other demands permit.
Strong winds for * miles	To be used only for indicating strong winds which are prevalent for a section of road, immediately following the sign, and will generally be on sections that are known regularly to suffer from strong winds, eg an unsheltered section of road between more sheltered sections.

B.2 (a) Tactical weather legends

Legend	Criteria for use
Strong winds on bridge	To be used only to indicate that winds are strong on the following bridge. As for other wind legends, the bridge in question should be known to regularly suffer very strong winds.
Strong winds (SLOW DOWN)	To be used where strong or gusting winds are likely to cause danger to any class of vehicle.
Surface water (– SLOW)	To be used only when a significant amount of surface water is on the carriageway, such that vehicles may be at risk of aquaplaning or skidding.

B.2 (b) Strategic weather legends

Legend	Criteria for use
N* closed to high sided vehs	To be used to inform drivers that a section of road, either motorway or trunk road, is closed to high sided vehicles due to strong crosswinds. To be used in conjunction with other wind legend for use on 2x16 and 3x18 VMS only.
N* J*-J* Floods	To be used when water has made at least one lane impassable between two junctions on the named road.
N* J*-J* Fog patches	This legend must only be used when an incidence of fog patches, which presents a significant road safety hazard due to reduced visibility, is confirmed between two junctions upon the named road. It should be noted that fog conditions can change rapidly, therefore additional care needs to be taken to ensure suitability of the legend.
N* J*-J* Risk of ice	This legend must only be used when an incidence of ice on the carriageway, which presents a significant road safety hazard due to slippery conditions combined with lack of road surface treatment, is confirmed between two junctions upon the named road, eg freezing rain – See section 3.7.
N* J*-J* Snow	This legend must only be used when an incidence of snow, which presents a significant road safety hazard due to settling or severity of fall, is confirmed between two junctions upon the named road.
N* J*-J* Strong winds	This legend must only be used when an incidence of strong winds, which presents a significant road safety hazard, is confirmed between two junctions upon the named road. This legend should only be used when other wind legends are not appropriate.
N* J*-J* Surface water	This legend must only be used when an incidence of surface water, which presents a significant road safety hazard due to the risk of vehicles aquaplaning, is confirmed between two junctions upon the named road.

B.2 (b) Strategic weather legends

Legend	Criteria for use
Strong winds on [Name] bridge Delays possible	This legend may only be set by the NTIC on strategic VMS. These legends are to indicate strong winds affecting traffic on an important (and well-known by name) bridge and can be set both tactically and strategically as necessary, eg when there is a likelihood of delay to traffic.
Strong winds on [Name] bridge Expect delays	This legend may only be set by the NTIC on strategic VMS. These legends are to indicate strong winds affecting traffic on an important (and well-known by name) bridge and can be set both tactically and strategically as necessary, eg when there is a likelihood of delay to traffic.

B.3 Tactical bus lane legends

Legend	Criteria for use
Bus lane closed	Indicates that all classes of traffic are precluded from using the bus lane.
Obstruction Use bus lane	This legend must only be set and removed by The ROC operator under the authority of a police constable or TO. The authority shall be recorded in the Control Works log. This legend can be used where an obstruction restricts the use of one or more running lanes and traffic volume is such that, in exceptional cases, the use of the bus lane by all classes of traffic is necessary.

B.4 MIDAS legends

In addition to the below legends, MIDAS can also display speed limits ranging from 60mph to 40mph

Legend	Criteria for use
Congestion Stay in lane	This legend is exclusively used on smart motorways and shall not to be used on the approach to a junction.
Congestion caution	This legend is exclusively used on smart motorways.
Congestion after Jct	This legend is exclusively used on smart motorways.
Queue Caution	This legend is exclusively used within the MIDAS system where traffic is either slow moving or stationary.
Queue ahead	This legend is exclusively used within the MIDAS system where traffic is either slow moving or stationary.
Queue after Jct	This legend is exclusively used within the MIDAS system where traffic is either slow moving or stationary.
Queue on slip road	This legend is used within the MIDAS system where traffic is either slow moving or stationary on the slip road. Note: this legend is the only one on this page which is also available for manual setting by operators.

B.5 No visible activity legends – see section 3.12

Legend	Criteria for use
Constructing new bridges	When new bridges are being built.
Installing new drains	When installing or repairing drains or carrying out drainage works.
Installing pipes and cables	When installing, diverting or moving pipes and cables.
Installing new traffic equipment	When installing traffic equipment.
Roadworks adjacent to carriageway	When works are taking place offline but are impacting the network such as when building a new carriageway that joins the existing carriageway.
Roadworks under carriageway	When work is being carried out under elevated sections.
Technology under test	When commissioning technology and undertaking site acceptance testing.
Work suspended unsuitable weather	When weather conditions prevent scheduled work taking place. A suitable weather legend may be more appropriate in hazardous conditions (Annex B.2 (a)).
Lane(s) closed for adjacent works	When works are taking place offline but impacting the network such as building new carriageway which joins the existing carriageway.
Lane(s) closed Concrete [structure] setting	When a new concrete structure (bridge or barrier) has been built but is not ready for use because it has not fully set.
Lane(s) closed further works ahead	When a scheme has long sections of traffic management but work is focused in one area, particularly after a long lead-in of traffic management.
Lane(s) closed Markings drying	When new road markings have been painted.
Lane(s) closed for overnight works	Displayed during the day when works are being carried out at night.
Lane(s) closed surface setting	When a new road surface has been laid but is not ready for use because it has not fully set.
Speed limit in force for system test	To explain speed limits set for commissioning technology on new sections of smart motorway. This is the preferred legend to be used where the sign size will accommodate it.
Speeds apply system test	Only to be used where space prevents display of the preferred legend.

The following two legends shall only be used by operators to support major roadworks. These legends should be displayed on VMS located up to 2km in advance of the start of the works. These legends do not form part of Chapter 8 and shall not be used in conjunction with mobile works or workforce in road/on slip road legends.

Take extra care at road works

Take extra care through road works

B.6 Diversion legends		
Line 1	Line 2 options	Criteria for use
Diversion	at N* J* follow (circle) follow (square) follow (triangle) follow (diamond)	See section 2.9 for pictograms permitted for use when 'follow' legends are displayed on an MS4.
HGVs	follow (circle) follow (square) follow (triangle) follow (diamond)	See section 2.9 for pictograms permitted for use when 'follow' legends are displayed on an MS4.
HGVs - leave	at N* J* motorway	None
Winds - HGVs	follow (circle) follow (square) follow (triangle) follow (diamond)	See section 2.9 for pictograms permitted for use when 'follow' legends are displayed on an MS4.
High sided vehs	follow (circle) follow (square) follow (triangle) follow (diamond)	Only for use with 2 x 16 and 3 x18 VMS. Note: For MS3s these legends will not be displayed on the sign when the matrix signal is set. See section 2.9 for pictograms permitted for use when 'follow' legends are displayed on an MS4.
N* closed	use N*	Shall use road numbers rather than names. If A627 (M) type road number, then it shall be shown as A627M.

The following legend templates may be used for diversion routes:

Follow diversion signs not satnav

M42 diversion follow signs not satnav

B.7 Driver information legends (link legends)

Line 1	Line 2 options	Criteria for use
Collision Incident	after J* after J* exit	None
Congestion Long delays	after J* at J* exit at Toll J*-J*	None
Exit closed	to N* (N/E/S/W) at J*	None
Exits closed	at J* & J*	This is the closure of two consecutive junctions only.
No SOS phones	for * miles J*-J*	
Next SOS	area closed	To be set by NTIC on VMS before a closed or occupied emergency area.
Next service	area closed	This legend shall, ordinarily, be used only after consultation with the service area. Additional service area legends also exist – see Annex B.12.
No diesel at No fuel at No LPG at No petrol at	next services	This legend shall, ordinarily, be used only after consultation with the service area. Additional service area legends also exist – see Annex B.12.
No diesel No fuel No LPG No petrol	at services	This legend shall, ordinarily, be used only after consultation with the service area. Additional service area legends also exist – see Annex B.12.

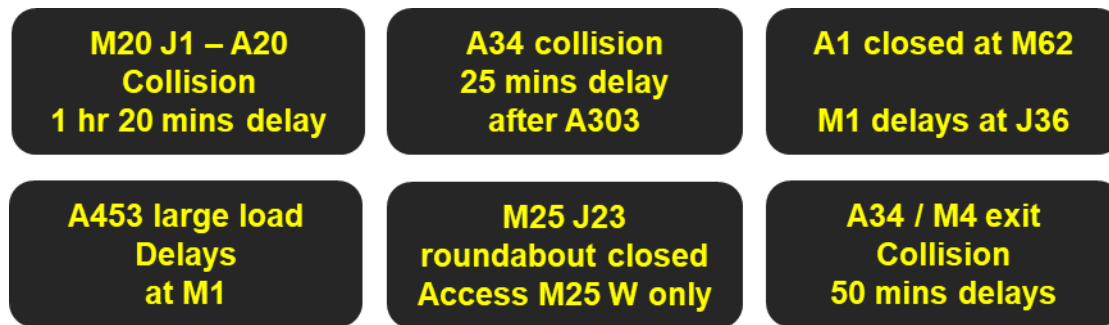
B.8 Driver information legends (network legends)

Line 1	Line 2 options	Criteria for use
N* north / east / south / west N* J* N* J*-* N* J* & *	(* hr) (* mins) delay closed Collision Congestion Incident Long delays	None
N* J*	Exit closed	None
N* closed	after J* J*-J* after N* at N* at J* & *	None

B.9 Strategic driver information legends

Line 1	Line 2 options	Criteria for use
N*	closed	None
N* closed N* Collision N* Delays N* Incident	at N* after N*	None
N* closed	J* to N* (from) N* to J*	None
N* J*-N* N* J*-J* N* J*	(* hr) (* mins) delay closed Collision Congestion Delays Incident Large load Long delays	None
Collision Congestion Delays Incident Large load Long delays	after N* after J*	None
N*	entry closed entry delays	None
N* / N*	exit closed exit delays	These are link legends used on the approach to a roundabout.
N* J* roundabout closed	No access to N* (compass direction) Access N* (compass direction) only	

Below are examples of driver information legends:



B.10 Three line strategic driver information legends			
Line 1	Line 2	Line 3	Criteria for use
N* J*-J*	Collision Incident	* mile queue	To indicate the length of queues when it is not possible to provide a delay or travel time.
N* J*-J*	* lanes closed	until (at least) *	To inform of a reduction in carriageway capacity.
N* J*-J*	Emergency repairs	(Long / Severe) Delays	To give warning of the effects of emergency works.
N* J*-J*	closed due to	barrier / emergency repairs, collision, fire, floods, incident, obstruction, roadworks, snow, strong winds, (vehicle) recovery	To provide a reason for a road closure.
N* J*-J*	closed for		
N* J*-J*	until (at least) *		

B.11 Strategic diversion legends	
Line 1 options	N* Collision / Incident N* Collision / Incident J*-J* N* closed J* / at J* / J*-J* N* delays (J* / at J* / J*-J*) N* (north / east / south / west) closed / delays Diverted traffic
Line 2 options	For [location] For [regional destination] For N*
Line 3	use [diversion route]

B.12 (a) Motorway service area legends - fuels

Line 1	N* J* (-J*)							
Line 2	Name of service area, followed by: <ul style="list-style-type: none"> ▪ 'Services', 's'vcs' or 'svcs' as space permits ▪ a compass direction, if necessary 							
Line 3	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; vertical-align: top;"><i>Closures and restrictions</i></td> <td style="width: 33%; vertical-align: top;">No diesel No fuel No LPG No petrol</td> <td style="width: 33%; vertical-align: top;">No fuel for cars No fuel for HGVs Fuel for HGVs only No HGV access No HGV parking Services closed</td> </tr> <tr> <td style="vertical-align: top;"><i>Restoration of service</i></td> <td style="vertical-align: top;"><i>Legends for restored services should be displayed for no longer than 15 minutes</i></td> <td style="vertical-align: top;">Services reopened Service fully open</td> </tr> </table>		<i>Closures and restrictions</i>	No diesel No fuel No LPG No petrol	No fuel for cars No fuel for HGVs Fuel for HGVs only No HGV access No HGV parking Services closed	<i>Restoration of service</i>	<i>Legends for restored services should be displayed for no longer than 15 minutes</i>	Services reopened Service fully open
<i>Closures and restrictions</i>	No diesel No fuel No LPG No petrol	No fuel for cars No fuel for HGVs Fuel for HGVs only No HGV access No HGV parking Services closed						
<i>Restoration of service</i>	<i>Legends for restored services should be displayed for no longer than 15 minutes</i>	Services reopened Service fully open						

B.12 (b) Electric vehicle charging not available

	Preferred options ←	→ Options where space is limited
Line 1	Name of service area followed by 'services' or 'svcs'	No EV charging
Line 2	EV charging	no EV charging next services
Line 3	out of service out of use	

B.12 (c) List of motorway service areas:

Baldock	Gordano	Rownhams (E/W)
Beaconsfield	Hartshead Moor (E/W)	Rugby
Birch (E/W)	Heston (E/W)	Sandbach (N/S)
Birchanger Green	Hilton Park (N/S)	Sedgemoor (N/S)
Blackburn with Darwen	Hopwood Park	Severn View
Blyth	Keele (N/S)	South Mimms
Bridgwater	Killington Lake	Southwaite (N/S)
Burton-in-Kendal	Knutsford (N/S)	Stafford (N/S)
Burtonwood	Lancaster (N/S) (Forton)	Strensham (N/S)
Charnock Richard (N/S)	Leeds Skelton Lake	Tamworth
Cherwell Valley	Leicester Forest East (N/S)	Taunton Deane (N/S)
Chester	Leigh Delamere (E/W)	Tebay (N/S)
Chieveley	London Gateway	Telford
Clacket Lane (E/W)	Maidstone	Thurrock
Cobham	Medway (E/W)	Tibshelf (N/S)
Corley (E/W)	Membrury (E/W)	Toddington (N/S)
Cullompton	Michaelwood (N/S)	Todhills (N/S)
Doncaster North	Newport Pagnell (N/S)	Trowell (N/S)
Donington	Northampton (N/S)	Warwick (E/W)
Durham	Norton Canes	Washington (N/S)
Exeter	Oxford	Watford Gap (N/S)
Ferrybridge	Pease Pottage	Wetherby
Fleet (NE/SW)	Peterborough	Winchester (N/S)
Folkestone	Reading (E/W)	Woodall (N/S)
Frankley (N/S)	Rivington (N/S)	Woolley Edge (N/S)
Gloucester (N/S)	Rotherham	

B.13 Legends for other network management tasks

Air quality

Speed limit for air quality

Clean air zones

Clean air (zone) charge(s) in [place name] (from) [dd mmm]

Clean air (zone) charge(s) now apply in [place name]

[Place name] clean air (zone) charge(s) (from) [dd mmm]

[Place name] clean air (zone) charge(s) now apply

Dart charge

Dart Charge pay online (or by phone)

Pay Dart Charge by midnight tomorrow

Pay Dart Charge online by midnight tomorrow

Remember to pay the Dart Charge

Enforcement activity

Speed cameras

Lane enforcement cameras

Lane closure cameras

B.14 Campaign legends – see section 4.12

Legends set with prior approval when required or as part of a planned campaign.

Supporting communications strategy is preferred but not essential.

Red X means
lane closed

Don't hog the
middle lane

Keep left unless
overtaking

Look out
for bikes

Think bike
Think biker

Speed limit to
manage congestion

Legends set with prior approval in support of substantial associated activities.

Evidence of a communications strategy is required.

Bin your litter –
other people do

Don't drop litter
– bin it

Don't drink
and drive

Don't drive
tired

Hands off
your phone

Drug driving
costs lives

Keep your
distance

Stay safe
Stay back

Watch your
speed

Check your
fuel level

Safe tyres
save lives

Is your vehicle
ready for winter

B.15 Technology loss legends – see section 4.17

N* J*-J*	No signals	*am/pm - *am/pm
	Power loss	Signal disruption
		No signals until *am/pm
	Power failure	No signs
	Tech repairs in progress	
	Upgrading technology	
No SOS phones		
No SOS phones	for * miles	
	In emergency	call 999
Day Date Month	*am/pm - *am/pm	No SOS phones

B.16 Traffic Officer vehicle message panel (VMP) legends

Legend	Criteria for use
DON'T PASS	May only be used on a moving or stationary TO vehicle when carrying out a rolling road block.
FOLLOW ME	Only to be used where a work instruction requires its use. May only be used on a moving TO vehicle
INCIDENT	May only be used on a stationary TO vehicle when traffic is stationary or slow moving.
LONG LOAD	May only be used when actively involved in escorting an abnormal load.
SLOW DOWN	May only be used on a moving TO Vehicle.
STAY BACK	May only be used on a moving or stationary TO vehicle when carrying out a rolling road block.
THANK YOU	May only be used on a moving or stationary TO vehicle and only displayed for a short time, as the TO vehicle leaves a cleared incident with a rolling road block.
WIDE LOAD	May only be used when actively involved in escorting an abnormal load.

B.16 Traffic Officer vehicle message panel (VMP) legends

Scrolling Chevrons	<p>May only be used on a moving or stationary TO vehicle in the following circumstances:</p> <ul style="list-style-type: none">▪ On a moving TO vehicle to indicate to motorists following that they wish them to move out of their current lane because of an incident or obstruction on the carriageway immediately ahead.▪ On a moving TO vehicle, stopping at an incident in a live lane, to indicate to motorists following that they wish them to move out of their current lane because of an incident or obstruction on the carriageway immediately ahead, and before the TO has been able to exit the vehicle and place ETM.▪ On a stationary TO vehicle, together with other warning lights, when due to inclement weather, namely strong winds, ETM cannot be placed and this is the only available alternative to warn drivers of an obstruction or incident.▪ On a stationary TO vehicle, in conjunction with vehicle mounted warning lights, as an additional method to direct motorists to move out of their current lane as the result of an incident or obstruction on the carriageway ahead. If ETM is being set out or removed, the scrolling arrows should be turned off once the ETM task is complete.
--------------------	--

Annex C – Initial request for a new VMS legend

Initial request for a new variable message sign legend

All new legends must be reviewed by the Variable signs and signals policy team before they are submitted to the Department for authorisation by the Secretary of State for Transport.

Please set-out your requirements and consider potential drawbacks in the table below. Then send your completed form to: [REDACTED].
Resize the table as necessary.

Applicants are encouraged to contact the VSS policy team for an informal preliminary discussion before completing the form.

1	Legend request	Exact wording including variants
2	Type of legend and situation it is intended to address.	Eg.: dealing with a hazard or proposing a new safety campaign message*
3	When will it be used?	In what event or on which date or time?
4	For what duration do you anticipate the legend will be displayed?	Provide a range where appropriate, eg 'This legend may be required for 10 minutes to 2 days'
5	What response do you want from drivers when they see this legend?	
6	What will be the benefit(s) of using the legend in this situation?	Traffic management, safety of road users or roadworkers
7	Which existing legends or traffic signs have been considered and why are they not appropriate for this situation?	
8	What customer insight do you have or think necessary to support the request?	
What are the potential drawbacks of using this legend?		
9	Could it be misinterpreted? If so, in which ways?	
10	How much of a distraction might the legend cause?	Is it succinct and intelligible? Does it require any thought process beyond a simple and quick reading?
11	List and evaluate any safety problems or undesirable behaviours it might lead to.	For example, might it encourage lane changing around exit slips? Or might it encourage a false sense of security?
12	List and evaluate any commercial and political implications of displaying the legend.	
13	List and evaluate any potential drawbacks not covered above	

* The use of VMS to display legends which support road safety campaigns will only be granted exceptionally and by approval of the Customer Experience Director.

This form is available separately within [National Highways](#).

Annex D: Key terms

Confirmed report – An incident reported by someone who is a trusted source of information.

Congestion – Travel time is between 10 minutes and 19 minutes 59 seconds above journey profile.

Delays – Travel time is between 20 minutes and 29 minutes 59 seconds above journey profile.

Event – An issue which has or may have a negative impact upon normal journey profile.

Incident – Used as a general term for situations affecting the road such as a security threat, a customer in crisis, an unexpected weather event or a police-led incident.

Journey profile – The travel time between two locations at specific times of the day.

Legend – An authorised combination of words, numbers, letters and symbols displayed on VMS to communicate information to road users. Legends exclude signal aspects.

Long delays – Travel time is between 30 minutes and 1 hour 29 minutes 59 seconds above journey profile.

Long-term signing – Legend intended to be displayed for two weeks or more.

Paired VMS – Two consecutive VMS which either display the same legend, or two legends which contain related information. Each legend should make sense on its own.

Severe delays – Travel time is 1 hour 30 minutes or more above journey profile. The NILO or the NHDM may authorise use of the term in legends when journey profile exceeds one hour and indications are that it will exceed 1 hour 30 minutes.

Signals – Lane availability symbols or speed limits or the devices or parts of a device that display these aspects. Signals exclude the words that make up a message.

Strategic VMS – Signs mainly located outside of the tactical VSS area, which warn drivers further away of the reason for any tactical VSS.

Tactical VSS – Signs and signals located a maximum of 5km or 2 junctions from either the scene of an incident (or other event which drivers need to be informed of), or from the rear of any queues which have formed as a result of the incident. When smart motorway signs and signals are used for managing non-incident related traffic (such as for slowing traffic at peak times or the opening of a dynamically managed hard shoulder) there is no restriction on the distance they can be set over.

Unconfirmed report – An incident reported by anyone who is not a trusted source.

Annex E: Full revision history

Versions

Version	Date	Description	Author
0.1	Feb 2007	VMS and Matrix policies.	VMS Policy Team
0.2	13 Dec 2010	First draft of new VSS document.	
0.3	21 Mar 2011	Second draft, based on CAB feedback.	
0.4	7 Jun 2011	Third draft, based on CAB feedback.	
0.5	15 Jul 2011	Minor modifications based on Simon Sheldon-Wilson feedback.	
0.6	12 Aug 2011	Minor modifications.	
0.99	23 Sep 2011	Final draft, needing updates to meet writing and visual identity requirements.	
1.0	28 Oct 2011	Final version ready for issue 23 Dec.	
1.01	23 Dec 2011	Minor modifications based on feedback from version 1 prior to formal publication.	
2.0	01 Apr 2014	Updated to include smart motorways HSR and ALR. Minor updates to other areas.	
2.1	1 Feb 2016	Update for Highways England with other minor alterations	
2.2	29 Aug 2017	Update to several sections	
3.0	4 Jun 2018	Update to all sections	and
3.1	31 Oct 2019	Update to all sections	
3.2	22 Jul 2020	Update to all sections	
4.0	26 Jul 2022	Update to all sections	
4.1	7 Mar 2024	Update to all sections	
4.2	2 Mar 2026	'Accident' replaced and updates made to all sections.	

Reviewer list

Name	Version
Change Advisory Board (CAB)	0.2
VSS project team	0.3
	0.4
	All up to 1.01
	2.1
	2.2 & 3.0
and	3.1
and	3.2
and	4.0 – 4.2

Approvals

Name	Title	Version
	Head of Traffic and Information Policy	1.01
	Highways England Director, Traffic Management Directorate	1.01
	Variable Crewing /VSS Policy Manager	2.0
	Customer Experience Director, Customer, Strategy and Communications	2.2 – 4.2

For enquiries on the content of this document please email:

[REDACTED]