highways
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Policy for using **variable signs and signals** (VSS)

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Document control

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Revision history

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2.1	1 February 2016	Update for Highways England with other minor alterations	Chris Lomax
2.2	29 August 2017	Update to several sections	Chris Lomax
3.0	4 June 2018	Update to all sections	Chris Lomax and Tim Priest
3.1	31 October 2019	Update to all sections	Chris Lomax
3.2	22 July 2020	Update to all sections	Chris Lomax

Reviewer list

Name	Title	Version
Paul Hill	Head of Customer Service Development	3.2
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Approvals

Name	Title	Version
Pete Martin	SES Customer Experience Director	3.2

Changes from version 3.1

- There are 30 new tactical VMS legends available to all regions (documented in the annexes), which provide more detailed information to our customers during:
    - Rolling road blocks – such as "Traffic held removing debris".
    - Unconfirmed incidents – such as "Report of blocked lane" and "Report of cyclist".
    - Vehicle recovery – such as "Recovery in progress" and "Slow vehicle joining ahead".
    - Incident related congestion – such as "Delays due to earlier incident".

- Strategic legends added (documented in Annex B.13) to notify of:
    - Clean air zones charges
    - Enforcement activity

- Section 3.2, requirement to use "RED X MEANS LANE CLOSED" in all lane running sections added, to help increase awareness and compliance with Red X.

- Section 3.3 on variable speed limits created to clarify guidance on both mandatory and advisory speed limits.

- Section 3.4, setting 60mph speed limits for unconfirmed reports updated from a trial to standard practice.

- Section, 3.15, has been created covering speed limits that have been introduced to manage air quality, and prescribing display of the supporting legend "SPEED LIMIT FOR AIR QUALITY" to assure customers that speeds have been correctly set and why.

- The guidance on varying a strategic legend in section 4.1 has been revised to clarify that if a National Incident Liaison Officer (NILO) or National Network Manager (NNM) need to vary a legend they must first seek approval from the VSS policy team or if required out of office hours, then approval should be sought from the Senior Officer on Call or the Gold Commander.

- Section 4.15 crisis management guidance has been updated to reflect that NNMs and affected regions are jointly responsible for agreeing display of appropriate legends in response to a non-traffic incident. Legend options have been expanded following wording used during the Covid-19 pandemic.

- Link added in Annex B to the full set of legends available to Regional Operation Centres.

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1.0 Introduction

1.1 Purpose

This document has been produced by the Customer Experience Division, in Safety, Engineering and Standards, and sets out the policy relating to Highways England'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 Highways England's obligations as a network operator. These obligations include accident and 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 Highways England.

VSS are used for the management of temporary situations. Events which require long term signing in a static location should be shown on permanent traffic (hard) signs. See sections 3.15 and 4.11 for examples of where longer-term 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 policy statements 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 Highways England network must adhere to this policy.

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 – found as: post mounted central reservation matrix, gantry mounted matrix over each lane, or post mounted entry slip road matrix. It should be noted that both gantry and entry slip road matrices are capable of displaying mandatory signals but the central reservation matrices are not.
- 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 either configured as 2 lines of 12 characters or 4 lines of 12 characters and are normally cantilever mounted; they can be configured to include the ability to display matrix signals, speeds and pictograms.
- Portable VMS (pVMS) – these message signs have a variety of line and character configurations and can be transported to required locations as and when required.
- 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.15.

1.3 Scope

- It is not within the scope of this policy to specify safe locations for the placement of VSS. This is the responsibility of the team installing the VSS equipment.
- This policy does not include Fixed Text Message Signs or rotating prism signs.
- 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 policy 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 an essential (or 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 policy 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 accident or 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 accident or incident.

Tactical VSS are set by the Regional Operations Centre (ROC) and shall focus on providing legends which warn drivers of an accident or 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 accident, incident or delays occur, until all tactical signs and signals for the accident, 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 policies 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 control room. 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   Location of legends

Care shall be taken to avoid setting non-essential legends on VMS within 1km of the entry or exit slip chevrons. This is to minimise distraction where lane changes are increased and demands on driver concentration are consequently greater.

2.4   Using place names and junction numbers

Legends should contain both a place name and a junction number or an intersecting road number. However, if this cannot be achieved, preference should be given to junction numbers; or consideration should be given to pairing the legends, with the first displaying the place name and the second the junction number or intersecting road number.

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

2.5   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.

2.6   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.

2.7   Flashing and scrolling VMS legends

VMS must not be used to display scrolling, alternating 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.15.

2.8   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.

2.9   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 Highways England 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, 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 (ACCIDENT) and guidance (SLOW DOWN).

Location	Where is the problem? (M6 J32/M25 J20-21)
Problem	What is the problem? (Accident/Major Event/Closed)
Effect	What has the problem caused? (Delays/45 MIN DELAY)
Guidance	What should be done? (Slow Down/Use M1/Follow Diversion)

The TSRGD prescribes how flashing amber lamps are to be used to support certain VMS legends. Where sign type permits, flashing amber lamps should only be used in tactical legends which contain an imperative such as SLOW DOWN or for ONCOMING VEHICLE, and also in strategic legends which detail a full road closure. All other legends should not use flashing amber lights.

The flashing red and amber elements of a variable signal shall only be used as described in Schedule 15, Part 2 of the TSRGD.

2.10 Upper or sentence case text

All legends detailed in Annex B of this policy are authorised for use on either fixed or portable VMS.

Where VMS type permits, legends should be displayed in sentence case (e.g. *Debris on slip road*) using Transport Mixed Case font at the character height prescribed in standard BS EN 12966:2014.

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

Urgent warnings:

- **SLOW DOWN** - (e.g. Fog patches / SLOW DOWN)
- **SLOW** - (e.g. Animals in road / SLOW)
- **ONCOMING VEHICLE**

Geographical:

- **M*** - motorway numbers (M* East accident)
- **A*** - A road identifier (e.g. A* Closed after J*)
- **NOTE: text following a motorway or A road identifier is displayed in sentence case (e.g. M* Closed use A*)**
- **B*** - B road identifier (e.g. A* Closed use B*)
- **N,E,S,W** - abbreviations for carriageway direction that are displayed in brackets (e.g. Exit closed to A*(E))
- **J*** - Junction identifier (Long delays at J* exit)
- **JCT** - used when referring to the next junction and not giving a junction number

Initials:

- **FM** - used for travel information signs (e.g. Travel news tune ***.*FM)
- **HGVs** - (e.g. HGVs leave motorway)
- **LPG** - (e.g. No LPG at service area)

2.11 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 accident or incident pictograms, as shown below.

Pictograms shall only be used for tactical purposes and all tactical accident and 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 fixed plate 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 accident and incident pictograms

Accident	Incident	Queue	Road works
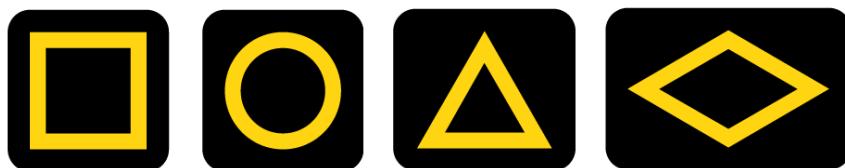
Skid risk	Snow	Strong winds

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

2.12 Routine congestion

Congestion is defined as an increase in travel time of at least 10 minutes above journey profile. 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.

2.13 Overuse of VMS legends

Agreed European best practice is to only display strategic legends 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 Highways England, has shown that repeating strategic messages 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.
- Do not give too much information on one sign.
- 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.
- Try to employ uniform solutions to improve recognition.
- Repeat information, limited to two VMS per junction (information could be partially missed the first time and is easily forgotten after a short time).
- Eliminate irrelevant information to reduce the amount of information drivers need to assimilate.

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[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

Tactical legends provide information about an immediate accident or 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.

2.14 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:

- Blank VMS shall be avoided on the approach to a decision point where a particular legend is applicable; that is, at least the last two available VMS leading to a strategic decision point shall display the relevant strategic message where possible.
- If multiple strategic messages need to be displayed in sequence, the difference should be highlighted to drivers by leaving a blank VMS between any two different messages where possible. This pattern can be repeated as required.

3.0 Tactical signs and signals policy requirements

3.1 Introduction

Tactical VSS enable Regional Operations Centres (ROCs) to provide early warnings of accidents or 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 accident and 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 accident or 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 officer in charge of the scene.

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, by using either the hard shoulder, or alternatively the central reservation.

Where lanes are closed by a red X, "RED X MEANS LANE CLOSED" should also be displayed in advance of the lead-in VSS, 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 the DMRB states 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 (e.g. 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 shall apply:

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

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[2] Design Manual for Roads and Bridges, Volume 9, Section 4, TA74/05, Chapter A3.2 – Signal sequencing

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 shall 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.

3.4 Incident management and unconfirmed reports

If an accident or incident is reported by anyone other than an approved source agreed by Traffic Officers, it is an 'unconfirmed' report. Until such information can be verified by an approved source, an operator shall 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 accident or incident location and description) then appropriate non lane-specific tactical signs and signals should be set. Depending upon the nature of the accident or incident reported it may be that the setting of signs and signals is required on both carriageways.

Once the exact details of an accident or incident have been confirmed by one of the approved 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 should 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. A blanket 20mph speed restriction and the 'ONCOMING VEHICLE' legend shall be set in both directions of the reported location. The rationale for this action is that the driver of the oncoming vehicle could have their attention drawn to the VSS set on the opposing carriageway.

3.5 Police pursuits

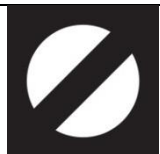The 'Tactics Directory for Police Pursuits' states that where VSS exist, then officers must request "low speed matrix and consider the use of a suitable VMS message if available".

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 accident, 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:

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

The exceptions to this are when:

- A FOG signal is set, so no 'end' signal is required.
- A further accident or incident has occurred up to 2km further along the motorway from an accident or incident, and drivers will soon encounter new accident or 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 shall 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 should not be set routinely for weather conditions that drivers can see, but can be considered if deemed 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 control room agrees with on road Traffic Officers that a particular situation justifies their use.

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 accident or 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 motorway 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 motorway 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 policy defines trapped traffic as: "Traffic that is unable to exit the strategic road network at the next available junction due to an accident or incident".

Legends to provide information and instruction:

- SERIOUS ACCIDENT (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
- HARDSHOULDER 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*ACCIDENT CLEARED

In addition Annex B.1A provides "TRAFFIC BEING HELD" legends to explain to customers what is happening during rolling road blocks.

Accident or incident?

Accident should be used in the majority of cases including when roads have been closed due to collisions. Fires and spillages should be signed using the most appropriate legend where possible.

Incident should be used when the road has been closed to deal with other types of situations such as security threats or where there is a risk someone will jump from a bridge. 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 the expected clearance of an incident the following legends could be used:

- SERIOUS INCIDENT
- ROAD REOPEN BY 3PM

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 "ACCIDENT / INCIDENT CLEARED".

3.10 Motorway Incident Detection and Automatic Signalling (MIDAS)

MIDAS is a queue protection and incident detection 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", down to 40mph with the message "queue caution". The speeds are mandatory on smart motorways and advisory on all other motorways.

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 Highways England 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.

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. These 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 can be used at the same location.

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 on smart roads. 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 policy requirements

4.1 Introduction

Strategic VMS are used to provide information to road users in advance of any accidents, 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 Network Manager (NNM) may need to vary an authorised legend: this should be first approved with the VSS policy team during office hours. Out-of-hours, approval should be sought from either the Senior Officer on Call (the SOoC) or the Gold Commander: out-of-hours notification of this approval should be copied to the VSS policy team.

Where the variation of a legend has previously been approved, the NILO or NNM 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 only be displayed a maximum of 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".

Unless a strategic diversion is required, legends notifying of future roadworks shall be displayed a maximum of 5km or two junctions from the roadworks to ensure relevance.

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 accidents, 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 accident, incident or event should always be displayed on line 1. An example is shown below.

```
A1 CLOSED AT M62

M1 J20 - 21 DELAYS
```
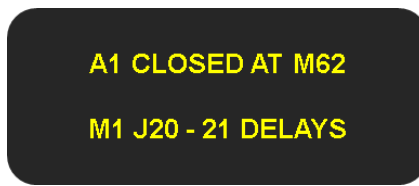
4.4   Travel time messages (TTVMS)

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: "ACCIDENT", "ROADWORKS", "OBSTRUCTION", "FLOODS", "INCIDENT", "STRONG WINDS", "LARGE LOAD" or "SEVERE WEATHER".

Unless providing multiple junction travel times a TTVMS legend should display both a place name destination and junction number, 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.

```
TO J18 (BRISTOL)
43 MILES
38 MINS
```

```
TO M6 J9
VIA M42/M6  28 MINS
VIA M42/M5  32 MINS
```

```
TO J20 (FOR M5)
40 MILES
36 MINS
```

```
TO J9   4 MINS
TO J11  12 MINS
TO J15  38 MINS
```

Travel time variable message sign (TTVMS) formats			
Message category	**Top line**	**Middle line**	**Final line**
Single destination	TO [Destination]	[distance]	[travel time]
	Examples 3 lines: TO J18 (BRISTOL) | 43 MILES | 38 MINS 2 lines: TO J18 | 16 MINS		
Multiple destinations	TO [Destination] [travel time]	TO [Destination] [travel time]	TO [Destination] [travel time]
	Example 2 lines: TO J17 8 MINS | TO J15 13 MINS		
Alternative routes to the same destination	TO [Destination]	VIA [route] [travel time]	VIA [route] [travel time]
	Example 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.

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 NNM 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
35 MINS DELAY

4.9 Other road authority legends

The Traffic Management Act 2004 requires Highways England 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 Highways England 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 at the formal request 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.

In addition, drivers can be advised of park and ride facilities as part of special event legends (see section 4.13), providing the park and ride facilities are temporary. Any permanent park and ride facilities must be signed for using permanent traffic (hard) signs.

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	Rail strike Rail disruption
Line 2 options	DD-DD Month DD Month Day DD Month Expect delay(s) Busier roads
Line 3 options	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

With the large number of freight vehicles using the trunk road network, delays at sea ports can cause severe traffic delays. Due to this, a number of legends have been developed to advise freight drivers of the delays; but they must only be used at the request of the port authority. The most commonly known of these are for 'Operation Stack'; the full list of legend options is shown below:

General legends for port disruption		
Line 1 options	[Location] Dock [Location] Ferry (Port) [Location] Port N* at [Location] Docks	
Line 2 options	long delays delays possible closed [Date]	
Line 3 options	use N*, N* HGVs use N*, N* delays possible long delays avoid area	
Specific legends for port disruption		
[Location] Port	closed to	container traffic
[Location] Port	delays possible	Operation Stack
[Location] Port	long delays	Operation Stack
Operation Stack	Dover [Date]	expected long delays
Operation Stack	Dover [Date]	cancelled

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 SES Customer Experience Director. 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 journeys[3], 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 – see section 2.3 – and care should be taken to limit the number of VMS that display the legend – see section 2.13.

The full list of campaign legends that have previously been authorised for use is found in Annex B.14.

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	▪ The event is located on or adjacent to the strategic road network.	▪ The event is located close to the strategic road network.
Nature of the event	▪ 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.	▪ The attendees will be arriving in vehicles which in large quantities can cause delays e.g. horse drawn vehicles.
Surrounding road network	▪ Other events up to two junctions away are already causing road users to experience congestion on their journey e.g. roadworks	
Alternative transport options	▪ Less than 25% of attendees are expected to arrive by public transport.	
Other factors	▪ There is a DfT or Highways England Board requirement for signing.	▪ The event is nationally or internationally important.

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[3] 2018 Transport Research Laboratory - Human Factors Review of Variable Signs and Signals Policy. R Robbins, J Mitchell, K Fairall and T Hyatt.

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 within a reasonable distance of 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 Highways England 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.

GARDEN SHOW AT NEC **15 – 18 SEP** **DELAYS POSSIBLE**	**B'HAM FESTIVAL** **29 JULY** **EXPECT DELAYS**

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.

EVENT / VENUE NAME **SITE FULL**	**EVENT / VENUE NAME** **NO FURTHER ACCESS**

EVENT / VENUE NAME **CLOSED ***

*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 Network Managers (NNM) 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 should only be used in major incidents where there is a potential risk to life by customers continuing to the stated location.
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 the day before (advanced warning) and during the severe weather conditions.

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
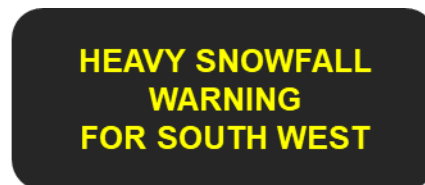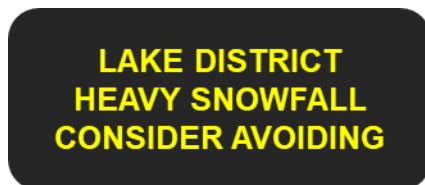
"CONSIDER AVOIDING" must only be used at the request of the regional or national gold or silver commander.

In addition there could be a scenario where there is a need to replace the term "EXPECT DELAYS" with "AVOID AREA". These legends shall only be used once approval has been granted by Highways England Gold Command or equivalent.

4.17 Unavailable VSS

If VSS unexpectedly become unavailable for use, the below legend should be set to warn drivers. The term "SIGNALS" is to be used and not "SIGNS" as "NO SIGNS" could be interpreted as meaning there are no signs at all, which would include permanent traffic (hard) signs.

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 Highways England's press office made aware.

M602 J2 – J3
NO SIGNALS
DUE TO VANDALISM

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) but not yet included in the 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. STO Processes and Procedures Manual – C4 – Agreeing the variation of an authorised VMS legend
2. Concept of Operations for Smart motorways Hard Shoulder Running and All Lane Running variants
3. Traffic Operations Policy

Annex B – Authorised variable message sign legends

The legends below in Annex B.1 to B.15 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
ACCIDENT J* ROUNDABOUT	To provide warning of an accident on the motorway roundabout at the stated junction.
ACCIDENT (SLOW DOWN)	To warn drivers of accidents on the main carriageway.
ACCIDENT ON SLIP ROAD	To warn drivers of accident on the off-slip.
ACCIDENT-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 *Police Standard National Motorway Manual*).
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.

B.1 Tactical incident management legends

Legend	Criteria for use
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.
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 accident or 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.
HARDSHOULDER 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 someone who is at risk of jumping onto the carriageway from 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*) ACCIDENT CLEARED	To inform traffic immediately affected by an accident 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 ACCIDENT	To warn traffic that we have received an unconfirmed report of an accident in the vicinity.
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 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.
RE-JOIN 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 (e.g. bus lane).
SERIOUS ACCIDENT (ROAD CLOSED)	To inform traffic when it has become trapped as a result of traffic related incidents such as collisions, fires and spillages.
SERIOUS INCIDENT (ROAD CLOSED)	To inform traffic when it has become trapped as a result of a non-traffic related incident affecting the road such as a security threat or where there is a risk someone will jump from a bridge.
SKID RISK ON SLIP ROAD	To be used when there is a temporary skid risk on the next slip road.

B.1 Tactical incident management legends

Legend	Criteria for use
SKID RISK (SLOW DOWN)	This legend caters for accident or 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 accident or 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 X MINS or by selecting one of the reasons: CLEARING ROAD, (REMOVING) DEBRIS, FOR ACCIDENT, FOR ANIMALS, FOR CYCLISTS, (FOR) PEDESTRIANS, FOR REPAIRS, FOR SAFETY, (FOR) SLOW VEHICLE, FOR INCIDENT.
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.

B.1 Tactical incident management legends

Legend	Criteria for use
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 accident or 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 accident or incident occurs in close proximity 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 Highways England's 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, e.g. 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, e.g. 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, e.g. 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, e.g. 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 Command & Control 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 2.11 for pictograms permitted for use when "FOLLOW" legends are displayed on an MS4.
HGVS	FOLLOW (CIRCLE) FOLLOW (SQUARE) FOLLOW (TRIANGLE) FOLLOW (DIAMOND)	See section 2.11 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 2.11 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 2.11 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.

B.7 Driver information legends (link legends)

Line 1	Line 2 options	Criteria for use
ACCIDENT	AFTER J* AFTER J* EXIT	None
CONGESTION	AFTER J* AT J* EXIT AT TOLL J*-J*	None
EXIT CLOSED	TO N* (E) TO N* (W) TO N* (N) TO N* (S) AT J*	None
EXITS CLOSED	AT J* & J*	This is the closure of two consecutive junctions only.
LONG DELAYS	AFTER J* AT J* EXIT AT TOLL J*-J*	None
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 NO UNLEADED	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 NO UNLEADED	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* EAST N* WEST N* NORTH N* SOUTH N* J* N* J*-* N* J* & *	(** HR) (** MINS) DELAY ACCIDENT CLOSED CONGESTION 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* ACCIDENT N* DELAYS	AT N* AFTER N*	None
N* CLOSED	J* to N* N* to J*	None
N* J*-N* N* J*-J* N* J*	(** HR) (** MINS) DELAY ACCIDENT CLOSED CONGESTION DELAYS LARGE LOAD LONG DELAYS	None
ACCIDENT LARGE LOAD CONGESTION DELAYS 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 shown on a 3x18 VMS.

M20 J1 – A20
ACCIDENT
1 HR 20 MINS DELAY

A34 ACCIDENT
25 MINS DELAY
AFTER A303

A1 CLOSED AT M62

M1 DELAYS AT J36

A453 LARGE LOAD
DELAYS
AT M1

M25 J23
ROUNDABOUT CLOSED
ACCESS M25 W ONLY

A34 / M4 EXIT
ACCIDENT
50 MINS DELAY

B.10 Three line strategic driver information legends

Line 1	Line 2	Line 3	Criteria for use
N* J*-J*	ACCIDENT	* 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 CLOSED FOR	(DUE TO) ACCIDENT FIRE FLOODS	To provide a reason for a road closure.
N* J*-J* CLOSED	UNTIL (AT LEAST) ****	INCIDENT OBSTRUCTION ROADWORKS SNOW STRONG WINDS	

B.11 Strategic diversion legends

Line 1 options	N* ACCIDENT N* ACCIDENT J*-J* N* CLOSED J* N* CLOSED AT J* N* CLOSED J*-J* N* DELAYS N* DELAYS J* N* DELAYS AT J* N* DELAYS J*-J* N* (NORTH / SOUTH / EAST / WEST) CLOSED N* (NORTH / SOUTH / EAST / WEST) DELAYS DIVERTED TRAFFIC
Line 2 options	FOR [location] FOR [regional destination] FOR N*
Line 3	USE [diversion route]

B.12 Motorway service area legends

Line 1	N* J* (-J*)	
Line 2	Name of service area, followed by: ▪ "Services", "s' vcs" or "svcs" where space permits ▪ a compass direction, if necessary	
Line 3 *Closures and restrictions*	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
Restoration of service	*Legends for restored services should be displayed for no longer than 15 minutes*	Services reopened Service fully open

List of motorway service areas:

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

Example legend

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M20 J8
MAIDSTONE SERVICES
NO PETROL
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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	LOOK OUT FOR BIKES
DON'T HOG THE MIDDLE LANE	THINK BIKE THINK BIKER
KEEP LEFT UNLESS OVERTAKING	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	KEEP YOUR DISTANCE
DON'T DROP LITTER BIN IT	STAY SAFE STAY BACK
DON'T DRINK AND DRIVE	WATCH YOUR SPEED
DON'T DRIVE TIRED	CHECK YOUR FUEL LEVEL
DON'T PHONE WHILE DRIVING	SAFE TYRES SAVE LIVES
DRUG DRIVING COSTS LIVES	IS YOUR VEHICLE READY FOR WINTER

B.15 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 procedure requires its use such as at the Dartford traffic management cell. 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 accident or incident with a rolling road block.
WIDE LOAD	May only be used when actively involved in escorting an abnormal load.
Scrolling Chevrons	May only be used on a moving or stationary TO vehicle in the following circumstances: ▪ On a moving TO vehicle to indicate to motorists following that they wish them to move out of their current lane because of an accident, incident or obstruction on the carriageway immediately ahead. ▪ On a moving TO vehicle, stopping at an accident or incident in a live lane, to indicate to motorists following that they wish them to move out of their current lane because of an accident, 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, accident 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 accident or incident or obstruction on the carriageway ahead. If ETM is being set out, the scrolling arrows should be turned off once the ETM set out 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: VSSpolicy@highwaysengland.co.uk. 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.	E.g.: 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, e.g. '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 Highways England.

Annex D: Key terms

Accident – Unforeseen and undesirable event particularly related to vehicles in which a hazard is created for road users, includes spillages, vehicle breakdowns, collisions or fires.

Capacity reducing – Loss of a lane or lanes, creating a reduction in road capacity.

Confirmed report – An accident or 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.

Demand increasing – A change in circumstance (accident, incident, event or weather) resulting in an increase in volume of traffic.

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

Incident – Used as a general term for non-vehicular incidents affecting the road such as a security threat, a risk that someone will jump from a bridge, 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 NNM 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 accident or 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 accident or incident. When smart motorway signs and signals are used for managing non-accident or 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 accident or incident reported by anyone other than an agreed approved source.

Annex E: Full revision history

Versions

Version	Date	Description	Author
0.1	February 2007	VMS and Matrix policies.	VMS Policy Team
0.2	13 December 2010	First draft of new VSS document.	Darren Evans (WM)
0.3	21 March 2011	Second draft, based on CAB feedback.	Darren Evans (WM)
0.4	7 June 2011	Third draft, based on CAB feedback.	Darren Evans (WM)
0.5	15 July 2011	Minor modifications based on Simon Sheldon-Wilson feedback.	Darren Evans (WM)
0.6	12 August 2011	Minor modifications.	Darren Evans (WM)
0.99	23 September 2011	Final draft, but requires updates to meet requirements of writing and visual identity guides.	Darren Evans (WM)
1.0	28 October 2011	Final version ready for issue 23 Dec.	Darren Evans (WM)
1.01	23 December 2011	Minor modifications based on feedback from version 1 prior to formal publication.	Darren Evans (WM)
2.0	01 April 2014	Updated to include smart motorways HSR and ALR. Minor updates to other areas.	Darren Evans (WM) Zachary Stamps Wendy Atkinson (IBI)
2.1	1 February 2016	Update for Highways England with other minor alterations	Chris Lomax
2.2	29 August 2017	Update to several sections	Chris Lomax
3.0	4 June 2018	Update to all sections	Chris Lomax and Tim Priest.
3.1	31 October 2019	Update to all sections	Chris Lomax
3.2	22 July 2020	Update to all sections	Chris Lomax

Reviewer list

Name	Version
Change Advisory Board (CAB)	0.2
VSS project team	0.3
Simon Sheldon-Wilson	0.4
Damian Morris	All up to 1.01
Ivan West	2.1
Paul Hill	2.2 & 3.0
Paul Hill and Tim Priest	3.1
Paul Hill and Lee Bow	3.2

Approvals

Name	Title	Version
Damian Morris	Head of Traffic and Information Policy	1.01
Simon Sheldon-Wilson	Highways England Director, Traffic Management Directorate	1.01
Darren Evans	Variable Crewing /VSS Policy Manager	2.0
Pete Martin	SES Customer Experience Director	2.2 - 3.2

If you need help accessing this or any other Highways England information, please call **0300 123 5000** and we will help you.

For enquiries on the content of this document please email:
VSSpolicy@highwaysengland.co.uk