

- English
- Français
- Deutsch
- Italiano
- Čeština
- Polski
- Español

▶ Who's new

- busbyd
- nksalone
- mkristl
- Turvey
- David McGuigan

▶ Who's online

There are currently *1 user* and *2 guests* online.

Online users

- dick_mans

Selected ITS Service: Travel guidance using variable message signs (VMS)

[Back to ITS list](#)

[Export as pdf](#)

[View more details about "Travel guidance using variable message signs \(VMS\)"](#)

General description of service	Variable Message Signs (VMS) provide information to road users on incidents, speed limits, traffic and road conditions. In a motorway environment they are generally large gantry mounted devices using Light-Emitting Diode (LED) technology; operated from a traffic control centre. VMS are also used to provide information on alternative routes, planned works and special events, safety messages and in some instances advertising messages. In a motorway environment this type of technology is used most widely where traffic volumes are high and the effect of incidents leads to there being benefit in having advance warning and an appropriate speed limit with regard to the prevailing conditions. As the cost of these facilities is relatively high, they are best deployed where alternative routes are available and accessible, or where there is an identified safety benefit from speed management or the advance warning of incidents and congestion. This translates to mainly urban motorway situations with high traffic flows, or particularly vulnerable sections. A VMS system is installed within the TCC, capable of selecting and constructing messages for display on the signs. An agreed series of pre-set messages will be constructed that can be transmitted to all or selected signs by an operator. The system will control all communication and monitoring features with the VMS.	
Service Assessment Parameter	Indicator and Likely Impact Range (% of change following ITS Service deployment), if any	Expert summary of impacts or feasibility
Improve travel efficiency		The impact on road capacity and travel times depends on the information disseminated to drivers. Warnings on incidents or slippery road surfaces can reduce the average speed of traffic flow. Variable message signs can also be used to disseminate rerouting instructions in case of incidents and congestion which reduces travel times experienced by road users. Appropriate speed limits and recommendations reduce speed variation and harmonise of traffic flow resulting in improved efficiency and slightly reduced congestion.
Improve road safety	Number of Traffic accident injuries (per traffic unit) <-10% <-10% <-10%	Studies indicate positive safety effects from on-trip traffic information via VMS. These are due to the fact that real-time information and warnings make the drivers better prepared for the problem ahead and encourage them to approach the problem location with lower speeds, longer headways and better situation awareness. The likely effect of these systems on the number of injury accidents is estimated to be in the in range of -3...-10%, being closer to the lower limit. Concerning incident warnings, the whole range of the effect on the total number of injury accidents is from 1/2-45 per cent to + 9 per cent, where the largest reductions may include bias caused by the regression-to-the-mean effect. The effects are more beneficial on secondary accidents. Other sources report that rear-end injury accidents have decreased as a result of queue warning systems on motorways whereas the number of rear-end accidents resulting in property damage only have increased. Other studies have shown that slippery road warning VMS decreased mean speeds by around 11/2-1/2 km/h when the signs were lit. The system was also shown to affect the direction of attention to find cues showing potential hazards, and to make passing behaviour more careful indicating an even larger positive impact on safety than that due to lower speeds. The automatic fog-warning system on the M25 motorway in England displays the 1/2-Fog 1/2 legend on roadside matrix signals. The assessment of this system showed that the net mean vehicle speed reduction was around 3 km/h, when the signals were switched on as a result of the formation of fog. Variable weather-controlled speed limits have been shown to improve safety by 10-20%, traffic controlled speed limits also indicate similar accident reductions. The magnitude of the safety impacts depends on whether safety has been taken as the primary aim of the system or not.
Improve public transport service		Traffic guidance using VMS (on-route info) has no direct impact on public transport. Making car-drivers more comfortable, confident and secure may have negative impacts on the use of public transport.
Improve freight management		Freight fleet vehicles benefit to the same extent from this service as non-commercially used vehicles. However special information for Heavy vehicles are available especially for re-routing indication, transit limitation or dedicated truck parking areas.
Improve freight fleet management		Freight fleet vehicles benefit to the same extent from this service as non-commercially used vehicles. However there might be specific guidance using VMS (e.g. signalling re-routing due to weather conditions like heavy snow that are critical for Heavy Goods Vehicles) that are only of