

VEHICLE ACTIVATED SIGNS (VAS)



REVISIONS

v1.0	13/01/2021
v1.1	26/01/2021
v1.2	04/02/2021 Final

Devon County Council Traffic Management Fact Sheet

TMFS – 02.1 – Vehicle Activated Signs (VAS)

INTRODUCTION

Vehicle Activated Signs (VAS) can be used for either warning of a hazard or to encourage motorists to comply with the speed limit. They are not to be used as an alternative to conventional permanently fixed traffic signs.

VAS have been shown to be effective in reducing vehicles speeds when sited appropriately and can also be an important element of a co-ordinated approach to Speed Management in Communities.

Speed related VAS are ideally sited where there is evidence of a speeding problem as deploying them where they are rarely activated is not good value for money.

VAS can be used as an enhancement to existing signs when recommended through the SCARF process.

SCARF stands for **Speed Compliance Action Review Forum** which is a joint meeting between Devon County Council Traffic and Road Safety Officers and Devon and Cornwall Constabulary Casualty Reduction Officers where speed complaint sites are assessed and appropriate actions agreed. (See TMT-01 SCARF Process)

TYPES OF VAS

Permanent (fixed) VAS

- **Mains Powered** – these can sometimes be mounted on lamp columns and powered directly from the lamp column itself. If the lamp column is not strong enough to support the sign a separate post would be required. This type of sign would remain in place permanently. Purchase costs will vary depending on specification and supplier. Speed related VAS will be configured to activate at the Association of Chief Police Officers (ACPO) enforcement threshold which is 10% + 2mph above the Speed Limit. E.g. for a 30mph Speed Limit, activation level would be 35mph.

The sign may also include the text “SLOW DOWN” beneath the roundel/warning symbol and would only be displayed at the same time as the roundel/warning symbol. A basic mains powered speed warning sign with SLOW DOWN beneath the roundel would be around £2,800* VAT if attached to a lamp column. If a separate wide based post and connection are required the costs would be at least £1000 higher and potentially much more if no convenient power supply is available on the same side of the road. Mains powered VAS will typically remain functional for over 5 years and often for as long as 10 years.

- **Solar Powered VAS** - these signs can be the correct choice where there is no power available but can be expensive to maintain and are sometime a target of theft of the solar panel. Costs can be around £5,000*. The activation threshold and text are the same as a Mains Powered VAS.
- **Battery Powered VAS** – these permanently fixed VAS operate in the same way as the Mains or Solar powered VAS with the batteries being changed on site without removing the VAS. These VAS are not considered Mobile VAS. Therefore, the activation threshold and text requirements are the same as a Mains Powered VAS.

Mobile VAS

- **Mobile VAS (MVAS)** –These would be battery powered. Recent improvements to technology mean that, depending on activation level, battery charges can last for up to a month. These devices must be moved between different sites on a regular basis. Ideally this will be monthly for speed related signs with the MVAS at the site for a month then away from the site for a month. Normally this monthly relocation would coincide with battery charging or replacement. Costs per unit would be between £1,200*and £2,000*. The speed related VAS will be configured to activate at the Association of Chief Police Officers (ACPO) enforcement threshold which is 10% + 2mph above the Speed Limit. E.g. for a 30mph Speed Limit, activation level would be 35mph.
- **Speed Indicator Devices (SID's)** These operate the same as MVAS but display the speed of the approaching vehicle and may also show a Happy or Unhappy Emoticon.

DCC are happy to advise on the suitability of any particular VAS products that communities may wish to purchase.

*Based on 2017 prices

Devon County Council Funded

Devon County Council (DCC) has funded a large number of VAS at permanent sites around the County. These will usually have been provided at collision sites either providing enhanced warning of a particular hazard such as a road junction or as an enhancement to existing speed limit signing. DCC continues to maintain these signs but will review the need for the sign and may not replace if the sign costs are beyond reasonable repair.

DCC has an additional 10 battery powered Mobile VAS (MVAS) which it deploys at community concern sites for a month at a time in response to recommendations from the SCARF process. The signs are deployed by the DCC's Term Maintenance Contractor.

Parish and Community Funded VAS

DCC welcomes approaches from Communities interested in funding and operating their own VAS and has worked with several Parish Council's (PC's) who have funded the purchase of their own devices.

Purchase and servicing of speed related VAS was pioneered with Shaugh Prior Parish Council. The particular concern of the PC was the speed of vehicles across unfenced moorland where horses, cows and sheep roam freely. The PC agreed the sites for the VAS with the County Council (DCC) and the Police, the process of servicing the signs was risk assessed and covered

under the PC's Public Liability Insurance. Other Parish Councils operating their own VAS include, Lifton, Milton Abbot and High Bickington Parish Council's.

Community funded permanent VAS will only be considered at sites approved by DCC's SCARF process. The Parish Council's sponsored sites mentioned above were all agreed in this way. Community funded MVAS or SID will only be considered at sites approved by DCC. The SCARF team will be informed and the records updated.

PRINCIPLES FOR COMMUNITY FUNDED VAS

- VAS are considered following a SCARF assessment indicating that a VAS is appropriate or at sites approved by DCC with the SCARF Team members acknowledgement.
- DCC must approve all VAS installations prior to any works being started. DCC may refuse the request to install a VAS. Approval should be gained prior to the purchase of any equipment.
- The information displayed on the sign needs to be agreed with DCC.
- The PC/Town Council/Community Group will be responsible for:
 - all costs including purchase, installation and removal. No setup costs should accrue to DCC.
 - insuring the unit against claims for Injury, Accident or Damage. Public Liability Cover in the amount of at least £10m is recommended.
 - all maintenance not covered under the manufacturer's warrantee, including vandalism.
- It is recommended that the sign should carry an on-site warranty from the manufacturer for at least 5 years.
- Any VAS mounted on a lamp column will need the approval of the DCC Street Lighting Team.
- DCC will fund the cost of the electricity of mains powered permanent VAS.
- If a permanent VAS is to be battery or solar powered the VAS should be located on a dedicated post.
- A PC/Town Council/Community Group funded VAS won't be approved if the proposed location is in the vicinity of a DCC funded VAS, unless the DCC funded site is decommissioned.
- DCC will remove the VAS from site in the event of a collision and make the site safe but would not be responsible for its replacement.
- For a PC/Town Council/Community Group funded MVAS/SID (where the PC/Town Council/Community Group will be relocating the MVAS/SID on a regular basis), a risk assessment must be completed prior to the initial installation. The risk assessment must cover all the activities relating to the MVAS/SID. This must ensure that all personnel/operatives working on the highway at any sites have successfully completed the appropriate nationally recognised training and have been successfully assessed for competency against national standards for temporary traffic management (NRSWA Signing Lighting and Guarding certificate (Chapter 8)). The risk assessment must be carried out by the PC/Town Council/Community Group.
- Installation on Telegraph or electricity poles is not permitted.
- New posts will be arranged by the Neighbourhood Team or Traffic Management Team paid for by the PC/Town Council/Community Group.

MVAS/SID Speed Threshold Settings

Device	Threshold Setting	Speed Display	Suitable Text Displays	Suitable Icon
MVAS	Below the speed limit and up to a speed 10% of the speed limit plus 2mph	(blank screen)	(blank screen)	(blank screen)
	Speed exceeding the limit above	Speed limit	SLOW DOWN	(blank screen)
SID	Speed at or below the limit*	Actual vehicle speed	THANK YOU	Happy Emoticon
	Between the speed limit and a speed 10% of the speed limit plus 2mph higher than the speed limit	Actual vehicle speed	SLOW DOWN	Unhappy Emoticon
	Speed exceeding the limit above	Speed limit	SLOW DOWN	(blank screen)

* For battery only units it is recommended the minimum detection speed is set at 10mph below the speed limit, so the sign is not on too often. However, this may lead to concerns that the sign is not working properly.

VAS Positioning

When siting any highway sign, care should be taken to ensure that it can be seen by approaching drivers at an appropriate distance, that it is relevant to the hazard in question and that it is in a position where it can be safely maintained.

This is particularly true of VAS as the vehicle detector needs to have a clear line of sight to the approaching vehicle and the LED lighting on the sign needs to be aimed at the approaching vehicle much more accurately than a conventional static sign which can be seen from a much wider angle. In particular this can present problems if a VAS is sited at the top of a hill or on a bend where there might be limited scope for aiming the sign downwards or to one side.

The DCC as Highway Authority has a duty of care to ensure that all signs placed on the highway network are sited safely and will not present a danger to road users. The location and positioning of VAS must therefore be agreed with DCC before erection.

Information Required for the Approval of MVAS/SID Installations

Information required from PC/Town Council/Community Group

- Plan of the VAS locations,
- How often it will be moved and the various locations it will be moved to. Details of who will be responsible for this especially if personnel are moving between areas/parishes.
- Power type.
- Device settings, for example
 - Type of message, (colour, speed, text) and the speed range to be activated.
 - Type of radar system (i.e. Doppler radar antenna)
 - Radar range
- Type and frequency of data recorded. Details of how DCC can access the data if required.
- Risk assessment for installation and maintenance. Including working at heights, traffic management arrangements and confirmation that all personnel/operatives working on the highway are properly trained and competent (for example, successfully completing the NRSWA Signing Lighting and Guarding certificate (Chapter 8)).
- The type of street furniture the VAS going to be fixed on to and that it is suitable for the weight and size of the VAS.
- How device is going to be fixed to the street furniture and the type of fixing.
- Confirmation that the security of the sign has been considered i.e. padlock, lockable case, Tamtorque straps, etc.
- Battery charging procedure including frequency and charging location.
- Maintenance agreement / arrangement.
- Confirmation that the VAS meets current TOPAS Requirements or other UK standards.

Current TOPAS Standards (2021)

- TOPAS 2541A Performance Specification for Control Systems for Vehicle Activated Discontinuous Variable Messages.
 - [http://www.topasgroup.org.uk/MyFiles/Files/Specifications%202016/TOPAS%202541A%20\(Final\).pdf](http://www.topasgroup.org.uk/MyFiles/Files/Specifications%202016/TOPAS%202541A%20(Final).pdf)
- TOPAS 2516B Performance Specification for Discontinuous Variable Message Signs
 - <http://www.topasgroup.org.uk/MyFiles/Files/specifications/2516B%20v3%2070315.pdf>
- TOPAS 2516C Performance Specification for Discontinuous Variable Message Signs
 - <http://www.topasgroup.org.uk/MyFiles/Files/Specifications%202016/2516C%20v4%20draft%20uploaded.pdf>

Link to the TOPAS list of the devices that meet their specification

TOPAS 2541

<http://www.topasgroup.org.uk/shop/topas-2541a-performance-specification-for-control-systems-for-vehicle-activated-discontinuous-variable-messages/>

TOPAS 2516

<http://www.topasgroup.org.uk/shop/topas-2516b-performance-specification-for-discontinuousvariable-message-signs/>

<http://www.topasgroup.org.uk/shop/topas-2516c-performance-specification-for-discontinuous-variable-message-signs/>