Messagemaker Displays

A Guide for Parish Councils:

How to implement Speed Reduction Initiatives using LED Speed Indicator Devices

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ABOUT THIS GUIDE

Thinking about installing LED traffic signs to reduce speeding in your local parish but not quite sure where to start?

In this guide to implementing Speed Reduction Initiatives using LED Traffic Signage, we provide an overview of the key areas to think about if you are looking at installing an LED sign for speed reduction purposes in your local area.

This guide covers some of the key considerations required when choosing to use a Vehicle Activated Speed (VAS) sign alongside public roads, such as:

- **Planning Permission Considerations**
- **Choosing a Speed Sign**
- **Positioning Your LED Sign**
- **Frequently Asked Questions**

Image: The Stocksigns and Messagemaker Displays team

For more detailed expert advice on your LED traffic signage project, let Messagemaker Displays be your trusted partner for information and guidance. We have over 25 years' experience in LED displays with key knowledge of LED traffic signage use in the UK Highways industry.

IDENTIFYING A VEHICLE SPEED ISSUE

When considering whether to use an LED or static road sign, the electronic LED option is certainly the sign of choice if you want to create an eye-catching, attractive and versatile display. However, planning permission is required for the installation and usage of public LED displays.

In particular, LED traffic-management signs require an in-depth approach to planning permission. This is due to them not only being installed beside public roads, but also because, by design, they influence the behaviour of road users.

LED speed signs are a means of raising awareness of vehicle speeds and educating driver behaviour. They are considered an overt speed reduction method, as they are clearly visible to passing motorists and have a direct impact on all road users passing them when deployed.

Vehicle Activated Speed signage can only be deployed on roads that are subject to 20, 30 and 40 mph speed limits. Enforcement activities on roads with higher speed limits remains solely within the remit of the Police.

Deployment periods are at the discretion of the relevant Town or Parish Council based on individual site circumstances, but it is recommended that this decision is evidence led.

The 85th Percentile

The 85th Percentile is a concept that has been developed via a considerable amount of research and observation in analysing driver behaviour.

It is defined as the highest speed at which most drivers tend to adopt while being considered to be driving sensibly and appropriately according to the road environment. The 85th percentile is calculated by recording the speeds that 85% of all vehicles travel at or under during free flowing conditions past a nominated point.

Motorists that exceed the 85th percentile speed value are much less likely to conform to usual patterns of driving behaviour, as such they are unlikely to pay regard to safety enforcement measures.

Example: If you record the speeds of 100 vehicles along a given road, the top 15 are discounted, leaving the 85th highest speed to be the 85th percentile.

85th Percentile Guidance Table

	No further action required	Speed reduction initiatives can be implemented
20 mph Speed Limit	85th percentile speed of drivers up to 23.9mph	85th percentile speed of drivers exceeds 24.0 mph
30 mph Speed Limit	85th percentile speed of drivers up to 34.9mph	85th percentile speed of drivers exceeds 35.0 mph
40 mph Speed Limit	85th percentile speed of drivers up to 45.9mph	85th percentile speed of drivers exceeds 46.0 mph

Town and Parish Councils are encouraged to review, amend or add to the deployment programme no less than every six months to take into account new sites or any changes in circumstances.

Trigger Speeds of the any Vehicle Activated Speed devices should be set to match the posted speed limit.

PLANNING PERMISSION

When considering whether to use an LED or static road sign, the electronic LED option is certainly the sign of choice if you want to create an eye-catching, attractive and versatile display. However, planning permission is required for the installation and usage of public LED displays.

In particular, LED traffic-management signs require an in-depth approach to planning permission. This is due to them not only being installed beside public roads, but also because, by design, they influence the behaviour of road users.

Road Traffic Regulation Act 1984

While Parish Councils do have certain powers that allow for the placement of VAS signage and similar traffic signage, they must obtain prior consent from their local highway authority under Section 72 of the Road Traffic Regulation Act 1984.

Can Messagemaker Displays help me submit a request for Planning Permission for LED Traffic Signage?

As much as we try to help in every way we can, unfortunately the Messagemaker Displays team cannot complete a planning application on your behalf. We can help answer questions on the form regarding the signs, e.g. power option and technical information.

Each council will have a slightly different process and requirements, so it is essential to check with your local county council.

Please refer to the below links for guidance with your local council, such as:

- Surrey County Council
- West Sussex County Council
- Essex Highways
- Buckinghamshire Council
- Dorset Council
- Avon and Somerset Police

Messagemaker Displays is a member of the Association for Road Traffic Safety and Management (ARTSM). Further information on the specific requirements to consider can be found within their guidance materials.

CHOOSING A SPEED SIGN

Design and Legal Approval

The **Department for Transport's Traffic Signs Regulations and General Directions 2016 (TSRGD)** makes clear that all electronic traffic signs must be officially approved before being placed on or near a highway.

Permanent LED Traffic signs must follow strict rules under TSRGD. They must be either:

- Already listed within TSRGD, or
- Formally approved for special use by the Department for Transport

A lot of signs used along the roadside are pre-set designs that are compliant with TSRGD. However, if your sign is different from the approved pre-sets (e.g., double-sided or flashing) you will require further written approval before purchasing or installing.

One additional thing to note is that there are separate rules around temporary LED traffic signage. Temporary signage can be allowed alongside public roads, but it cannot be used as a permanent solution. Your local highways authority will advise on the timespan that they consider to be temporary, though most will advise around 8 weeks.

Further Considerations for Installation

Deployment of Vehicle Activated Speed signage must be undertaken by an approved contractor or by volunteers who have undertaken the relevant training courses.

Approved contractors for signage installation must have Operators Streetworks accreditation and Public Liability Insurance of at least £5,000,000. Responsibility for checking and approval of suitable contractors rests with Town & Parish Councils and is therefore self-policing.

Please contact your local Highways Authority or local County Council for further information.

Highways Furniture Precautions

No ladders, step ladders or other climbing aids should be placed in direct contact with or leant against the column or post that is being used to mount the LED sign. This is because any the additional weight may result in sudden failure of the post. You may be liable for any any damage to Highway furniture.

Deployment Timeframes of Temporary traffic signage

As a general rule of thumb, temporary speed reduction signage is deployed on site for between 2-8 weeks and is not redeployed in the same place until a minimum time of 4 weeks has elapsed.

This allows the signage to retain a "novelty" effect, as research shows that speed reduction is greatest within the first two weeks from deployment. As motorists become accustomed to the signage, speed reduction tends to diminish.

It may be prudent to implement **Rotation Programs**, where signage is moved between several pre-approved sites. This allows for greater cost effectiveness and speed reduction on multiple roads.

Messagemaker Displays can provide multiple signage backplates that can be installed in various locations to allow for ease of relocation of Vehicle Activated Speed signage.

What is on the market?

There are many different types of VAS signage that can be used across the market.

Here are some key questions to consider when choosing the right VAS solution for you:

- How long will the sign be in situ? Is this a temporary speed reduction scheme? Will the VAS sign be moved around the village? Do you require a permanent solution?
- How busy is the road that you are planning to install the sign on?
- How much maintenance are you willing to undertake to look after the sign? Does the road pose a safety risk to maintenance personnel?
- Do you require data collection for speed reduction analysis?
- Are you considering the use of solar powered signage?
- Is mains power available at the desired site?

Temporary VAS Solutions

The core 3 products offered by Messagemaker Displays for use by Parish Councils are the **Speed Indicator Device (SID), Smiley Activated Message (SAM)** and the **Speed Limit Reminder (SLR)**. Each device is fitted with a small radar device that identifies approaching vehicles and measures the speed at which they are travelling.

SID – This device measures and displays the speed of approaching vehicles in real-time, accompanied by a "SLOW DOWN" message. This gives direct feedback to motorists of their speed and encourages responsible driving behaviour.

View Product

SAM – Similar to the SID, this device displays the real-time speed of approaching vehicles. However, instead of a "SLOW DOWN" message, this device utilizes smiley faces to communicate with motorists. A green smiley face will show when the driver is adhering to the speed limit and a red face will show if they are driving over the limit. This is a popular product around schools due to the softer approach to behaviour changing.

View Product

SLR – When the SLR unit identifies an oncoming speeding vehicle, it displays a clear and visible speed limit symbol in a red roundel, alongside a prominent "SLOW DOWN" message, encouraging drivers to lower their speed.

View Product

Permanent VAS Signage solutions

Many of the VAS signs available on the market today (including those mentioned above) are designed for temporary use. They are often relocated around villages or used over a specified period of time to influence driving behaviours. Under TSRGD rules, temporary signage can be allowed alongside public roads, but cannot be used as a permanent solution.

If you are looking to implement a long-term or permanent solution for speed reduction on a public road, you will need to purchase and install a TSRGD-compliant VAS sign. Messagemaker Displays offer a range of TSRGD-compliant signs for long term use.

Urban Speed Limit Repeater

Urban Speed Limit Reminder

Adaptive Speed Limit Reminder

Vehicle Activated Warning Signs

School Warning Signs

Welsh Traffic Signage Range

Power options for your Speed Sign

There are 3 power options available when purchasing a sign from Messagemaker Displays - Mains, Battery and Solar.

Mains - Mains-powered speed signs utilise the power grid to keep the sign running.

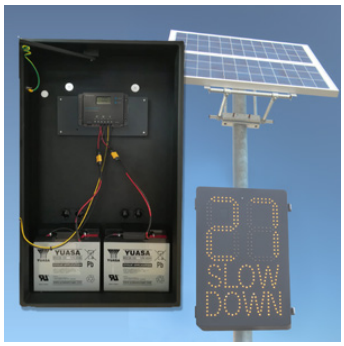
Pros:
- Low maintenance
- Secure and permanent
- Suited for private roads

Cons:
- Requires a qualified highways technician for installation
- Makes relocation of signage difficult

Battery - Battery-powered speed signs provide a more mobile solution to speeding in your area.

Pros:
- Quick installation
- Allows for easy re-location of the sign

Cons:
- Requires regular battery changes



Solar - The Solar power option enables speed signs to operate using renewable energy.

Pros:
- Minimal battery changes required
- Eco-friendly way to power
- Suited for remote areas

Cons:
- Requires a suitable location for sunlight absorption
- Generated solar power will be reduced during the winter months

COLLECTING TRAFFIC DATA

A key component in measuring the effectiveness of your speed reduction initiative is via capturing vehicle speed data during the deployment of your VAS unit(s). Additionally, this information can optimise traffic management strategies, identify high-risk areas, and develop targeted interventions to enhance road safety.

In Messagemaker Displays VAS units, data can be collected via Micro USB, nearby Bluetooth connection or fully remotely via a 4G modem.

Please note: the data gathered from a VAS unit cannot be used to prosecute speeding motorists as the radar within the unit is designed to only record vehicle speeds.

Traffic Report

Traffic Overview from Wed Aug 29 2018 to Sun Sep 23 2018

Vehicle Speed Classes (Mph)

Time of day	<15	15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	>70	Total	85th Percentile
00:00	0	0	1	1	3	19	11	6	3	1	0	0	0	45	47.1
01:00	0	0	0	0	3	5	4	1	4	1	0	0	0	18	51.1
02:00	0	0	0	0	1	2	2	5	2	0	0	0	0	12	49.2
03:00	0	0	0	0	0	0	1	3	3	0	0	0	0	7	**51.4**
04:00	0	0	0	1	1	2	8	3	0	1	0	0	0	16	45.3
05:00	0	3	4	9	12	16	27	13	5	5	**2**	**1**	0	97	48.5
06:00	0	1	7	6	34	92	80	45	24	**10**	1	0	0	300	47.8
07:00	1	0	14	17	110	361	264	**122**	**31**	3	0	1	0	924	44.5
08:00	**2**	**8**	25	25	147	**459**	250	83	19	2	1	0	0	1021	42.6
09:00	0	6	**31**	54	152	371	266	68	16	5	1	0	0	970	42.6
10:00	1	8	26	**73**	**176**	442	268	70	12	1	0	0	0	**1077**	41.8
11:00	1	5	25	50	135	431	**307**	72	9	3	2	0	0	1040	42.4
12:00	1	8	**32**	55	139	451	296	72	10	2	**1**	0	0	1067	42.4
13:00	**6**	9	18	**56**	147	432	252	77	13	3	1	0	0	1014	42.4
14:00	1	4	22	48	169	438	264	67	17	1	1	0	0	1032	42.1
15:00	1	**10**	21	48	168	552	296	96	19	2	0	0	0	1213	42.4
16:00	1	5	29	49	**181**	**671**	**428**	**151**	25	4	0	0	0	**1544**	43.1
17:00	0	1	24	45	169	649	412	116	18	0	0	0	0	1434	42.4
18:00	0	2	21	33	92	302	217	93	**30**	3	1	0	0	794	44.3
19:00	0	0	10	26	78	192	110	49	21	**5**	1	**1**	0	493	44.3
20:00	0	2	5	5	31	119	116	27	12	2	1	0	0	320	43.7
21:00	0	0	2	13	26	66	65	27	14	4	0	0	0	217	45.6
22:00	0	0	0	3	13	46	35	24	6	3	1	0	0	131	46.2
23:00	0	0	1	5	10	20	34	12	9	1	1	0	0	93	**46.7**
AM Total	5	31	133	236	774	**2200**	1488	491	128	32	7	2	0		
PM Total	10	41	185	386	1223	**3938**	2525	811	194	30	8	1	0		
Total	15	72	318	622	1997	**6138**	4013	1302	322	62	15	3	0		
Percent	0.10%	0.48%	2.14%	4.18%	13.42%	**41.25%**	26.97%	8.75%	2.16%	0.42%	0.10%	0.02%	0.00%		

Total Vehicles :	14879
30th Percentile :	35.5 MPH
50th Percentile :	37.8 MPH
85th Percentile :	42.9 MPH
95th Percentile :	47.0 MPH
Average Speed :	38.2 MPH
Highest Speed :	67.8 MPH

Image: Example - Traffic Overview Report, Tetbury Parish Council 2018 data

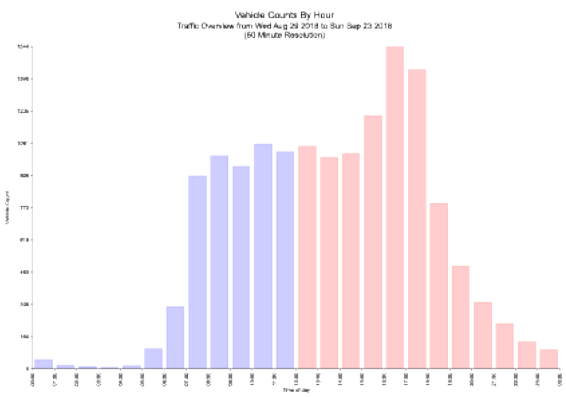


Image: Example - Vehicle Counts by Hour Report, Tetbury Parish Council 2018 data

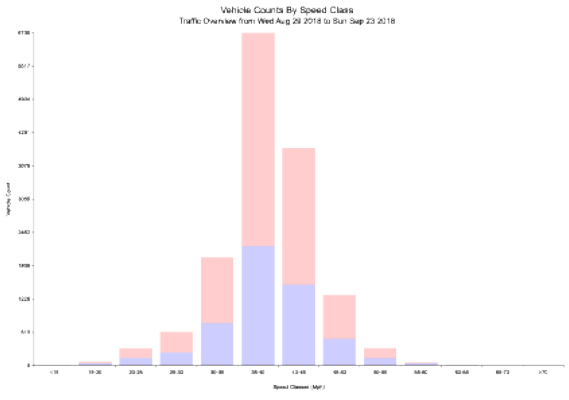


Image: Example - Vehicle Counts by Speed Class Report, Tetbury Parish Council 2018 data

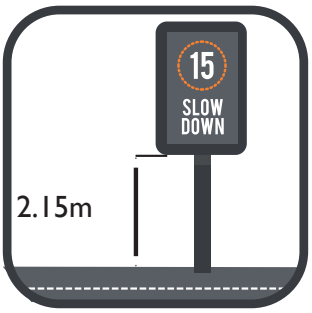
POSITIONING YOUR SPEED SIGN(S)

Ensuring that your speed signs are placed appropriately is a key element to an effective speed reduction campaign. A well placed LED sign should fit neatly within your local parish

Please use the below guidelines to help you choose the best placement of speed signs in your local area.

The Edge Distance
The distance between the nearest edge of the sign and the edge of the carriageway should be at least 0.75m.

Mind the Bend
The sign must be clearly visible to approaching traffic. Preferably on a clear straight road to allow sufficient time to be seen by drivers.



Mounting Distance
The lowest point of the sign must be at least 2.15m above the ground.

Mount the sign to a suitable post, or gain permission to use an existing pole or lamp post.

Side and Access Roads
The sign should not obstruct visibility from side roads or access roads.

Highway Boundaries
The sign should not overhang an existing highway boundary without the adjoining owners' consent.

Housing Considerations
The sign should not be visually instrusive from windows of adjoining properties.

Extra care must also be taken to ensure the sign does not hinder pedestrian movements.

Existing Road Signs
Exisiting signage should not be obscured by the LED sign.

The LED sign should not conflict with other signage in the immediate facility.

LED signage shall not replace permanent signage

Tree Considerations
Avoid placing your sign under overhanging trees/hedges, especially if using solar panels.

Tree coverage will reduce solar panel effectiveness and can obscure the sign.

FREQUENTLY ASKED QUESTIONS

Q: How long do the batteries last within a battery-powered VAS sign?

A: the batteries in your VAS sign are designed to last 45,000 triggers. however, battery life in your VAS sign depends on a variety of factors. these factors include:

- *How many vehicles pass through that particular road on a daily basis? Quieter roads will require battery charges less often.*
- *Do you require data collection, bluetooth or other optional extras? these will use battery life and realistically reduce the number of triggers to around 30,000.*

We recommend checking/charging your batteries every 6 weeks.

In terms of battery lifespan, we recommend replacing the batteries every 2.5 years.

Q: Does Messagemaker Displays offer Installation?

A: Installation is not something that is offered by Messagemaker Displays. This is because we have designed our VAS signs for ease of installation, so they can be installed by anyone.

If you are purchasing a mains powered device or otherwise cannot install the device yourself, please contact your local council/highways team to request assistance.

Q: What does a Speed Sign weigh? Can it be moved?

A: If you are looking to relocate your speed sign, we recommend installing backplates to each site, allowing for quick installation and removal.

Moving solar-powered devices and the solar panels is quite tricky and therefore we do not recommend it.

Please refer to the table for specific VAS sign component weights.

Component	Weight kg
SAM	9.75kg
SID/SLR	9.25kg
Backplate	1.6kg
Solar Bracket	6.25kg
Solar Panel	6.06kg
Yuasa Battery	6.2kg

Q: Can I change the speed settings on the VAS signs?

A: Yes. While the technicians here at Messagemaker HQ will pre-set the appropriate trigger speeds on your sign before dispatch, we understand that sometimes speed requirements change.

If the speed limit of the road changes or the VAS device is moved to a new location with a different speed limit the trigger speed can be changed. Please refer to the VAS Sign Manual for guidance.

Q: What devices can I download traffic data to?

A: Data can be downloaded to a Windows laptop via USB, Bluetooth or 4G Modem. Apple devices are NOT compatible with the Kestrel software.

Q: Which Vehicle Activated Speed sign is the most popular?

A: The SAM is our most popular VAS product due to the instantaneous feedback and that it rewards safe drivers by displaying a smiley face.

It also resonates with children, who can influence parents to reduce their vehicle speed, making it a particularly effective solution in school zones.

If you have a question or query that is not covered by this guide, please reach out to our team of signage experts who will be happy to help.

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