Hampshire County Council

Bramshaw traffic calming proposal

Initial options appraisal report

July 2017

1. Project background

Hampshire Country Council has commissioned Test Valley Borough Council to carry out an option appraisal for possible traffic calming measures on the B3079 through Bramshaw with a view to addressing road safety concerns in the village.

The scheme forms part of Hampshire Country Council's Local Highways and Transport Fund (LHTF) programme and funding was approved at the Highways and Transport Members Workshop in November 2015. The fund, which provides capital for a number of smaller (under £50,000 in value) transport and mobility improvement projects ran from 2013/14 to 2016/17 and is now closed to new scheme applications.

The agreed geographical scope of the scheme covers the following two stretches of the B3079:

1) From the junction of the B3078 and B3079 to Burnford Bridge (southern section)

2) From the Village Hall to St Peters Church/The Old Vicarage (northern section)

As agreed with Bramshaw Parish Council, the main objectives of the traffic calming scheme are to:

- reduce the animal casualty rate in the village
- reduce the number of vehicles using this route as a 'rat run' to bypass more obvious major routes
- create a safe environment for appropriate use of a rural road by diverse parties including pedestrians, cyclists and horse riders

whilst at the same time:

- minimising the impact of vehicle-generated noise on local residents
- preserving safe access to properties
- preserving the rural visual aspect of the local environment
- preserving safe access by all vehicle types, including emergency vehicles, farm equipment, livestock trailers, motorhomes and towed caravans

2. Project approach

In order to identify suitable traffic calming options that meet as many of the above objectives as possible, a combination of desktop studies (traffic calming policy documents, design guidance, etc.), site visits and the application of Best Practice examples from both the New Forest, Hampshire and beyond has been used.

Please note that at this stage, the report is an initial appraisal of potential options to provide a basis for further discussions.

3. Assessment of potential traffic calming options

A wide variety of traffic calming features is currently being used around the UK. The following measures have been considered and assessed in light of the objectives listed in Section 1 above, national traffic calming regulations and local (HCC/NFNPA/NFDC) policies. The interventions are listed in the order of their potential for speed reduction (high to low).

3.1. Speed limit reduction - REJECTED

The village already has a 30mph limit, no further reduction is therefore planned.

3.2. Average Speed Cameras - REJECTED

Average Speed Cameras measure the speed of vehicles travelling along a specific route by using an automatic number plate recognition system to record a date and time stamp as the vehicle passes between two cameras. By measuring a vehicle's average speed over a set distance rather than at a single location, drivers tend to stay within the speed limit throughout the length of the controlled zone rather than break and accelerate as they approach/go past a speed camera. The use of average speed cameras has been found, on average, to cut the number of crashes resulting in death or serious injury by more than a third.

In order to be effective, the system needs to include a minimum of two cameras covering the entry and exit points of the targeted route. The cameras must be positioned on a clear road with no side roads and with a known distance between each camera. In addition, a back office system is required for processing the data.

A basic system is likely to cost in the region of £100,000 and extension to the system may cost around £40,000 for each individual addition. In the case of the B3079 through Bramshaw, an Average Speed Camera system could involve the installation of six or more cameras, potentially costing well in excess of £250k.

The use of Average Speed Cameras in the New Forest has been considered by Hampshire County Council and the Police but it was found that there are factors that are challenging to overcome such as difficulties in achieving the necessary 3G signal and electricity supply, the visual impact on the landscape of the New Forest and the high cost of providing and operating the system. Currently, these factors are considered prohibitive in taking forward an Average Speed Camera installation but the County Council continues to explore this option to support traffic speed enforcement.

3.3. Vertical traffic calming features such as road humps, speed tables and speed cushions – REJECTED

These measures require street lighting and are not suitable for an unlit rural road such as the B3078 through Bramshaw.

3.4. Vehicle-activated signs (VASs) – RECOMMENDED

Vehicle-activated signs are electronic safety signs that warn drivers that they are exceeding the speed limit on a particular stretch of road.

There are two main types of VASs that display slightly different warning messages:

- Speed Limit Reminder (SLR) signs which usually display a message such as 'Slow Down' in combination with the current speed limit.
- Speed Indicator Devices (SIDs) that display the current vehicle speed in green (within the speed limit) or red (exceeding the speed limit) colours. Alternatively, a smiley or sad face can be displayed to indicate compliance with the speed limit.

On average, vehicle-activated signs have proven to have a beneficial effect on traffic speeds and can reduce traffic speeds on 30 mph roads by around 4% to 7%.

Vehicle-activated signs can be either permanent or portable. In Hampshire, permanent VASs are only provided in locations with a history of personal injury crashes; the B3079 through Bramshaw therefore does not qualify for the installation of this type of sign.

Unlike fixed VASs, mobile devices can be used at sites where speed is a concern even though there may not be a history of crashes. However, research has shown that their effectiveness can reduce over time as drivers become accustomed to them, and therefore changing the deployment locations can provide an effective reminder for drivers as the impact diminishes. To maintain their effectiveness, the signs therefore need to be relocated to other locations on a regular basis.

If used in accordance with Best Practice, mobile VASs can help to achieve a significant traffic speed limit reduction at relatively low cost without inconveniencing road users or residents.

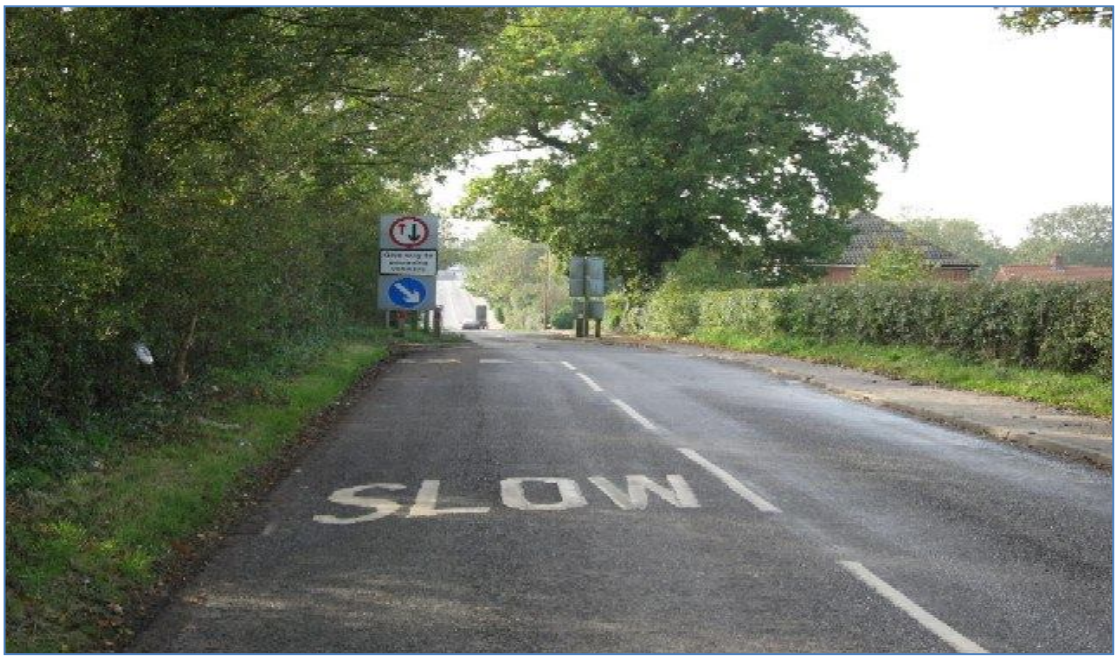
Hampshire County Council has policies and guidance in place that assist Parish Councils in purchasing and operating vehicle-activated signs. VASs could be used in Bramshaw instead of, or in tandem with, other traffic calming measures such as village gateways or build-outs. It is likely that due to the lack of street lighting in the village, the signs will need to be powered by solar panels and/or wind power.

3.5. Horizontal traffic calming features such as build-outs, chicanes, traffic islands or pinch points - PARTIALLY RECOMMENDED

It should be noted that not all types of horizontal traffic calming features are suitable for installation in Bramshaw. The reduction of road width to one lane, combined with priority working/give-way arrangements would have a significant impact on traffic speeds but can result in traffic queues, additional noise created by breaking and accelerating, and even an increase in speed caused by vehicles racing to get through the road narrowing first. In rural locations like Bramshaw it may also cause difficulties for agricultural vehicles and motorhomes/caravans.

However, priority build-outs could be considered to supplement wider (two-way) narrowings in locations without adjacent properties if care is taken to accommodate wider vehicles. Priority workings also require additional lining and signing which may not be supported in a rural context.

Example of build-out with priority working



Example of build-out with priority working

Wider (allowing two-way flow) horizontal traffic calming measures have shown to have a beneficial effect on traffic speeds without causing the above-mentioned negative side effects. The build-outs can be combined with road lining to visually narrow the carriageway, further reducing speeds on the approaches. This type of pinch point can be lines-only or include physical build-outs.

Example of build-out with priority working (a similar lay-out would allow two-way flow on wider roads)

Example of road narrowing without physical build-outs allowing two-way traffic flow

Example of road narrowing without physical build-outs allowing two-way traffic flow

3.6. Village gateways - RECOMMENDED

Installed at the start of the village, more visible signage combined with roundel markings on a coloured surface give a 'Gateway' appearance to the village; studies have shown that this has a small impact on speed reduction.
Village name signs can be customised to fit the character of the village.

Example of village gateway sign

Example of village gateway sign

3.7. Roadmarkings - RECOMMENDED

There is a variety of options including continuous solid edge lines to give the appearance of a narrower carriageway, speed limit roundels on a coloured surface strip, pinch points formed by road narrowing with white edge lines supplemented with a coloured surface and dragon's teeth markings; studies have shown these measures have a small impact on vehicle speeds.

3.8. Surface treatments such as rumble strips and false cattlegrids - NOT RECOMMENDED

These measures tend to create extra noise and have previously been rejected by New Forest District Council.

4. Suggested measures for implementation in Bramshaw

In light of the above options assessment and the criteria stipulated by Bramshaw Parish Council, the following traffic calming features are recommended for implementation in Bramshaw. Starting at the southern end:

Location 1: Junction of the B3078 and B3079

The give-way priority could be changed so that vehicles travelling north/south do not have the free flow movement they have at present, which would reduce speeds at the southern end of Bramshaw. However, it should be noted that the B3078 is a high risk animal casualty route and changing the priority may increase traffic speeds in Brook.

Location 1: B3078 junction with B3079 (possible change of priority)

Location 2: Southern boundary of Bramshaw village

Gateway signs should be erected, together with 30mph roundels re-marked on an enlarged red surface band. Yellow lines or red surface bands could be laid as countdown stripes on the approach. Alternatively, ‘dragon’s teeth’ markings could be applied to increase the visibility of the village gateway. These measures would highlight to drivers that they are entering Bramshaw village. Studies have shown a reduction in speed of approx. 6mph where these measures have been introduced.

Location 2: Start of Bramshaw village (installation of village gateway). NB: The 30 signs have now been removed

Locations 3 and 4: The straight section past the village store.

Two physical grass-topped pinch points should be constructed with kerbs and timber posts. In order to meet the specified criteria, the pinch points need be wide enough to allow two vehicles to pass each other. White edge lines and coloured surface should be used to visually narrow down the road. 'Give-way' priority could be provided (with appropriate signage and markings) in acceptable locations. While the addition of priority build-outs may result in some of the negative side effects mentioned in Paragraph 3, they would reduce the speed of vehicles considerably.

Location 3: Near the village store (installation of two-way road narrowing)

Location 4: Southern straight section approach to Burnford Bridge (installation of two-way road narrowing)

Locations 5 and 6: The straight section between the Village Hall and Harwoods Bentley garage

Installation of pinch points as described above

Location 5: Northern straight section between Village Hall and the Bentley garage (installation of two-way road narrowing)

Location 6: Northern straight section between Village Hall and the Bentley garage (installation of two-way road narrowing)

Location 7: Northern boundary of Bramshaw village

Installation of village gateway as detailed for Location 2.

Location 7: Start of 30 mph speed limit at northern entry to the village (installation of village gateway)

Supplementary measures: B3079 through Bramshaw village

Although only part of the village has continuous white edge lines, these should be extended through the whole length of the village. At the same time, the centre lines should be removed to give the visual appearance of a narrower carriageway; this measure has been successful in reducing vehicle speeds at other sites.

In addition, all existing 30 roundels and SLOW markings should be refreshed and in some locations, a background coloured surface laid to highlight these.

Further SLOW markings and coloured surface could be provided on each B3079 approach to Furzley Lane crossroads.

Installation of additional 30mph roundels

Alternative/supplementary measures: B3079 through Bramshaw village

As described in paragraph 3.4. above, the Parish Council could purchase and operate one or more vehicle-activated signs/speed indictor devices for rotation between a number of sites in the village. This could be done instead of, or in conjunction with, other traffic calming measures. Depending on the chosen locations, the installation of suitable foundations may require permission from the New Forest Verderers.

5. Conclusions

Based on existing data and experience from other traffic calming schemes, the recommended measures are likely to result in a slight reduction of the average traffic speeds through a combination of road narrowing features and a greater awareness of

the 30mph speed limit and village environment. This would be achieved without causing increased noise or congestion. The recommended interventions could either be supplemented with, or replaced by, vehicle-activated signs/speed indictor devices.

More radical measures such as priority build-outs or vertical traffic calming features would be required to achieve a significant reduction in traffic speed (and volumes). However, these would most likely require further urbanisation (installation of street lighting in the case of speed humps or cushions) and/or have some detrimental effects on local residents. Any more substantial intervention would also have to be agreed with the Verderers, The New Forest National Park Authority and, potentially, the Forestry Commission.