
Balance between 20mph speed limits and Street Architecture

Briefing Paper by Service Director, Assets & Infrastructure

AUDIT AND SCRUTINY COMMITTEE

10 December 2020

1 PURPOSE AND SUMMARY

- 1.1 This report provides details to Members on the balance between 20mph speed limits and the use of street architecture, and an update on the 20mph experiment across settlements in the Scottish Borders.**

2 STREET ARCHITECTURE AND TRAFFIC CALMING OPTIONS

- 2.1 There are a variety of traffic calming features available for construction. However, research into the efficacy of these in general is very dated, and in rural settings, is extremely rare. Examples in Appendix 1. The most commonly used traffic calming features are:
- Signing
 - Lining and Surface Treatments
 - Humps and Bumps
 - Variable Message Signs
 - Islands, Chicanes, Build Outs
 - Protected Parking and Realignment
 - Light Controlled Crossings
 - Roundabouts
 - Gateway Treatments and Transition Buffers
 - Shared Spaces (moratorium at present)
- 2.2 Each traffic calming feature comes with its own advantages and disadvantages and some work in tandem better with others. Costs vary depending on the interventions and some have ongoing maintenance issues. Others can cause problems on bus routes and emergency access roads and noise and vibration are frequently cited as intolerable by residents. It is rare for an individual traffic calming feature to be successful in the longer term, and it is generally accepted that a mix and match of features is the most appropriate. Also worth bearing in mind is that some traffic calming features have a very localised effect, and consideration is needed into possible adverse effects elsewhere and unintended consequences.

2.3 Eddleston Study

It is fair to say that there is a distinct lack of modern research into the effectiveness or otherwise of traffic calming features in rural areas and in particular on villages bounded by national speed limit roads. The Council's traffic and road safety team successfully applied to the Transport Scotland Road Safety Research fund for 'The Eddleston Study' into traffic calming features. This research involved Edinburgh Napier University conducting a worldwide literature review of the effects of traffic calming as well as an analysis of recently introduced local traffic calming features in Eddleston. An assessment of the strengths of traffic calming measures is detailed in the following table.

Assessment of Strengths of Traffic Calming Interventions:

Intervention measure to reduce speed	Strength of evidence*
There is little evidence as to the effects of rural roundabouts in villages	Weak
Vehicle Activated Signs (VAS) with the speed of travel or a message such as 'Slow Down' if travelling at a speed assessed as high for the speed limit appear to be effective at reducing speeds. Decreases of about 6 mph resulted for the mean and 85th percentile speeds at 12 months. VAS, including LED signs were reported to be very effective in reducing vehicle speeds at community entrances.	Strong
In-village speed tables and road humps are reported to be effective in reducing speeds on the approach to, at and at a short distance after the location.	Medium
In-village chicanes are reported to be effective in reducing speeds on the approach to, at and at a short distance after the location. These may include pavement build-outs in reducing the road width.	Medium
The use of centre islands and lane narrowing appeared to have a small effect on speed reduction relative to other measures	Weak
For pedestrian islands in-village symmetrical, induce 1 m lateral shift and be enhanced by post-and-chain barriers or barrier bollards and located near to residential buildings visible from the carriageway.	Weak
As gateway speed reduction measures rumble strips may be effective for reducing high speed entry to the settlement.	Weak/ Medium
The use buffer or transition zones outside of villages through use of Chevron markings (among other measures) appears to have a moderate effect on reducing entry speeds.	Weak
The use of Transverse bar markings at entrances to villages appears to have a moderate effect on reducing village entry speeds.	Weak
Red road markings and on-road speed signing have a moderate effect on reducing village entry speeds.	Weak
Centre-line removal in villages can reduce speeds driven by up to 2 mph.	Weak
The use of 'natural traffic calming' measures – hedges and trees – appear to have negligible impact on driver speeds.	Weak
The use of coloured road material such as red bricks can help to reduce speeds driven, often in combination with	Weak/Medium

physical intervention measures at locations such as at village gateways and at intersections.	
Use of a combination of measures appears to be effective at reducing vehicle speeds entering and travelling through a low speed limit area within small settlements	Medium

2.4 In the context of Eddleston village, where Dragon’s teeth at the speed limit change were introduced first, followed by Vehicle Activated Signage (VAS), the evidence from this Literature Review is that careful selection of additional traffic calming measures may provide a synergetic effect in bringing down motor vehicle speeds as they enter and proceed through the village. Further application of traffic calming measures on the approach or at the village gateways, plus the potential for further measures in the village itself, would look to be the approach needed. There is a range of options which include, for example, installing VAS at or close to each gateway and changes in road surface colour, potentially with the 30mph speed limit painted onto the red surfacing. The potential for speed tables and chicanes may be limited by proximity of residential properties and geometry but may be worth exploring as they were both reported as achieving relatively high speed reductions.

3 20MPH EXPERIMENT UPDATE

3.1 At its meeting on 27 August 2020, Council agreed to implement a Sustrans/Transport Scotland externally funded £1.2M trial of 20mph across all streets in settlements with existing 30mph speed limit in the Scottish Borders. This involved 97 settlements in total, including 8 trunk road towns. The timetable for the work was as follows:

- **August 28 2020** – First Traffic Survey (pre/baseline data collection)
- **September 3 2020** – First Email issued to all Community Councils
- **October 5 2020** - Roll out of trial 20mph schemes across all 89 settlements with 30mph speed limit, excluding trunk road settlements.
- **October 26 2020** - All signing completed in 89 settlements and awaiting Transport Scotland permission for remaining 8 settlements with trunk routes running through.
- **October 30 2020** – Second Email and first Community Council Survey sent out to all Community Councils.
- **November 16 2020** - Agreement from Transport Scotland for trunk route towns starting with Hawick.
- **November 16 2020** – Second Traffic Survey (post signing only data collection).

3.2 From December 2020 through to February 2021, an analysis of traffic surveys and determination of possible traffic calming features will be carried out in discussion with Elected Members and Police Scotland. The timetable is then:

- **January 2021** – Second Community Council Survey
- **March 2021** – Third Traffic Survey
- **April 2021** - Public consultation; Third Community Council Survey; Parent survey
- **May 2021** – Fourth Traffic Survey

3.3 From June to August 2021, further consultation will be carried out with Elected Members on options for a recommendation report to Council. It is

anticipated this report will be presented to Council in September 2021. Depending on the decision of Council at that time, from October 2021 to May 2022, the statutory process will take place to introduce any retained 20mph schemes, and decommission others.

- 3.4 A marketing strategy for the current scheme is ongoing with radio, internet and social media updates and advertising. The Council website FAQ is updated regularly to reflect questions from the public. All primary aged children have been issued with high viz vests. An Evaluation group is being set up, consisting of SBC Officers, Edinburgh Napier University academics, Sustrans, Transport Scotland, all of whom have confirmed, with confirmation awaited from Police Scotland.
- 3.5 As expected, there has been a mixed reaction to the widespread introduction of the 20mph schemes. Some communities are warmly welcoming the trial, while others are unhappy over a lack of consultation at the outset. Some have reservations on the need for all streets to be included, and there have been a number of queries over justification, based on very few injury accidents and questions of over funding, even though the scheme is fully externally funded. It would appear that some drivers are also unsettled over the additional drive time, and conversely some pedestrians are happier with the change in driver behaviour. Some residents are finding noise disturbance reduced by slower moving vehicles. Early discussions from both local Police Sergeants has not seen a spike in complaints over speeding or driver behaviour, with complains over non-compliance and poor driving similar to locations when 30mph was speed limit in place. Police are not surprised with the level of compliance so far.

Further information:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/918429/ltn-1-07_Traffic-calming-guidance.pdf
<http://www.ukroads.org/webfiles/TAL%2011-94%20Traffic%20Calming%20Regulations%20-%20Scotland.pdf>

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Background Papers: Eddleston Survey

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Note – You can get this document on tape, in Braille, large print and various computer formats by contacting the address below. Philippa Gilhooly can also give information on other language translations as well as providing additional copies.

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Appendix 1 – new appendix to be published