

Report

Report to:	Roads Safety Forum
Date of Meeting:	1 November 2022
Report by:	Executive Director (Community and Enterprise Resources)

Subject:	Speed Management and Traffic Calming
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1. Purpose of Report

1.1. The purpose of the report is to:-

- ◆ advise the Forum of the various methods, features and tools that may be utilised for speed management and traffic calming purposes and approaches to their general use

2. Recommendation(s)

2.1. The Forum is asked to approve the following recommendation(s):-

- (1) that the contents of the report be noted and the approach taken to such measures supported.

3. Background

3.1. Traffic calming was introduced to the UK in the 1980s following successful schemes in mainland Europe that had improved safety in urban areas.

3.2. Although one death or serious injury on the road network is one to many, Scotland holds a good record for casualty reduction and focus continues with the Scottish Government's launch of Scotland's Road Safety Framework to 2030 on 25 February 2021. This sets national targets and measures for casualty reduction to 2030 to which each roads authority contributes towards.

3.3. A paper was presented to the Forum on 1 March 2022 detailing road accident casualty statistics within South Lanarkshire during 2021, which also noted that South Lanarkshire too had shown casualty reduction trends, with 2021 recording the lowest casualty figures recorded.

3.4. With regard to speed, changes in speed have been shown to bring about changes in injury accidents. A good rule of thumb is that a 5 per cent reduction in injury accidents can be expected to result from a 1mph reduction in mean speed.

3.5. Linked to the above Road Safety Framework is the Scottish Government's National Strategy for 20mph which aims to expand 20mph speed limits across Scotland and will ensure all appropriate roads in built-up areas have a safer speed limit of 20mph by 2025. This will have a considerable impact on speed limit provision and general behavioural change expectations in the future, which we require to be mindful of when considering the content of this paper.

3.6. Numerous requests are received for traffic calming on an annual basis which far outweigh available funding and the need and suitability for the requested measures to be introduced. This paper sets out some of the more common measures, considerations regarding their use and the justification for investigations and implementation of new works.

4. Traffic Calming/Speed Management

4.1. To reduce road accident casualties by providing a safe environment for road users, speed management/traffic calming measures may then be considered. The type of measures that may be considered on a road depends on the type of road and the traffic flow.

4.2. It should be noted that A and B class and other strategic urban roads should not be subject to conventional traffic calming. Such features are typically not appropriate for roads with a speed limit of over 30mph.

4.3. Traffic calming features can be split into 2 main categories, either vertical deflection or horizontal deflection. A non-exhaustive list of features is detailed below with additional information provided at Appendix 1. Any feature may have its own advantages, disadvantages and limitations depending on the proposed locations and its specific variables.

4.4. Vertical deflection - a general term for any measure which alters the vertical alignment of the carriageway over a short distance. Examples include:-

- ◆ Speed Cushions
- ◆ Speed Tables
- ◆ Road Humps
- ◆ Raised Junctions

4.5. Horizontal deflection - a general term which describes any measure which alters the horizontal alignment of the carriageway over a short distance. Examples include:-

- ◆ Build-outs/pinch point
- ◆ Road narrowings
- ◆ Priority system
- ◆ Chicanes
- ◆ Mini roundabouts
- ◆ Pedestrian/traffic island

4.6. Other speed management/traffic calming measures may be utilised which may include:-

- ◆ Signs
 - enhanced signage may be appropriate depending on the site. This is required to comply with Traffic Signs Regulations and General Directions 2016
- ◆ Lining
 - depending on the nature of the site, new/enhanced road markings may be beneficial such e.g. hatching, roundels or central contrast strips. This is required to comply with Traffic Signs Regulations and General Directions 2016

- ◆ Safety Cameras
 - Safety Camera Units operate under the rules and guidance of the Scottish Safety Camera Programme. The Programme follows the rules and guidance set out in the Programme Handbook which can be found at the following link:- <https://www.transport.gov.scot/media/51339/scottish-safety-camera-programme-handbook.pdf>
 - Each unit conducts their own assessment of sites/routes and liaises with Council's regarding shortlisted sites meeting minimum criteria
- ◆ Vehicle activated signs (VAS)
 - signs such as Speed Indicators Signs (SIDs) can either show the speed of the vehicle approaching or display a symbol such as a 'smiley' or 'unhappy' face

5. Considerations

- 5.1. The introduction of additional measures requires to be evidence led. Justification would typically include an investigation into personal injury accidents (particularly those involving vulnerable road users), accidents with similar patterns of causation factors and the consideration of vehicle speeds, traffic volumes, vehicle composition, severance and the general road and surrounding environment in terms of layout, key buildings and social amenities.
- 5.2. Speed and accident reduction are not the only valid objectives leading to the introduction of a speed management/traffic calming scheme. Other objectives may include encouraging non-motorised users and improving the local environment as part of a wider scheme. Provision of speed reduction measures and/or traffic calming is deemed to be most effective when incorporated as part of larger schemes where appropriate e.g. new active travel infrastructure.
- 5.3. For the encouragement of cycling and walking, and discouragement of using the car for inappropriate journeys, traffic calming has a role to play in achieving these objectives and is considered when designing schemes and routes.
- 5.4. It should be noted that traffic calming measures are not always popular. Some of the issues and limitations to be mindful of include:-
 - ◆ Buses
 - journey times can increase, as can passenger discomfort and concerns about passenger safety (especially when humps or cushions are placed at or near bus stops)
 - ◆ Emergency services
 - physical speed-reducing measures can adversely affect the response times of emergency services vehicles. This is particularly relevant to fire and ambulance services. Along strategic routes for such services, consideration needs to be given to the most appropriate design that can minimise delays while at the same time reduce and control the speed of other vehicles. A similar consideration also requires to be given to public bus routes
 - ◆ Public opinion
 - can be supportive, but in some cases resistance from residents has required removal or significant dilution of planned measures. A consultation process is often required

- ◆ Cyclists
 - can find some traffic calming measures uncomfortable, particularly where measures have high upstands. Design of measures needs to take cyclists into account and be cycle friendly
- ◆ Motorcyclists
 - can find some measures difficult to negotiate
- ◆ Equestrians
 - reported to find that some measures, such as pinch points, have an adverse effect on their safety
- ◆ Disabled or older occupants of vehicles
 - those with pre-existing back conditions can find measures more uncomfortable and more difficult to negotiate than more able-bodied persons do
- ◆ Local environment
 - traffic calming measures change speed profiles and, in some circumstances, may lead to higher emission and noise levels. Care needs to be taken to minimise any such adverse effects by encouraging smooth driving patterns

5.5. It is important to recognise that there is traffic calming legislation and consultation requirements that require to be considered. This provides technical detail on certain traffic calming measures as well as the statutory duty for consultation with the public and the usual consultees including the police. Where this is not specifically required within legislation, external funding partners generally insist on this as part of grant funding requirements. Such consultations generally result in a significant level of negativity and objections as there are mixed opinions regarding speed management/traffic calming measures.

6. Approach

6.1. With reference to the above, the Council typically consider sites/routes or areas for traffic calming where:-

- ◆ there is an identified issue or requirement established through the Council's annual accident analysis as detailed to the Forum in today's 'Road Safety and Casualty Reduction' paper

6.2. Additionally, consideration will be made where:-

- ◆ there is a requirement or benefit determined as part of a wider scheme or project that can be evidenced e.g. active travel routes, school travel plan actions, city deal or community growth areas etc
- ◆ significant measurable benefit, cost effectiveness and public support can be shown that outweighs any negatives

7. Employee Implications

7.1. There are no employee implications as part of this report.

8. Financial Implications

8.1. Many of the measures and features attract a significant implementation cost and several will require elements of maintenance also. It is essential that such measures are targeted appropriately and provide a positive and measurable cost benefit, such as can be demonstrated through the Council's annual accident investigation and prevention programme.

8.2. Where active travel works, or initiatives are to be taken forward, they will be prioritised through the Scottish Government Grant: Cycling, Walking and Safer Routes, SPT funding for accident reduction measures on strategic routes/cycle facilities, South Lanarkshire Council's Roads Investment Plan for improved infrastructure and potentially additional external grant funding as it is made available from Scottish Government or other funding bodies.

9. Climate Change, Sustainability and Environmental Implications

9.1. There are no significant implications in terms of climate change, sustainability and environmental implications associated with this report.

10. Other Implications

10.1. There are no significant risks associated with this report.

11. Equality Impact Assessment and Consultation Arrangements

11.1. This report does not introduce a new policy, function or strategy or recommend a change to an existing policy, function or strategy and, therefore, no impact assessment is required.

David Booth
Executive Director (Community and Enterprise Resources)

14 October 2022

Link(s) to Council Values/Priorities/Outcomes

Values

- ◆ Focused on people and their needs
- ◆ Accountable, effective, efficient and transparent
- ◆ Ambitious, self-aware and improving

Priorities

- ◆ We will work to put people first and reduce inequality
- ◆ We will work towards a sustainable future in sustainable places

Outcomes

- ◆ Our children and young people thrive
- ◆ Good quality, suitable and sustainable places to live
- ◆ Caring, connected, sustainable communities
- ◆ People live the healthiest lives possible

Previous References

- ◆ Roads Safety Forum - 30 November 2021

List of Background Papers

- ◆ Scotland's Road Safety Framework to 2030
- ◆ Department for Transport Traffic Calming LTN1/07

Contact for Further Information

If you would like to inspect any of the background papers or want any further information, please contact:-

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Appendix 1 - Traffic Calming Terminologies

Build-out

A section of kerb built out into the carriageway on one side only to narrow the road.

Central contrast strip

A central strip, which is raised slightly to deter drivers from crossing the centre line.

Chicane

Staggered build-outs used to break up long straight sections of roads. One-way working chicanes may require priority signing which should be clear and visible. Two-way working chicanes can be used on more major roads, which carry larger vehicles.

Hatching

Hatching can be painted on the road to deter drivers from using the full road width by making the road appear narrower. Can be used in combination with other measures.

Mini-roundabout

Mini-roundabouts can be used at the entry to a traffic calmed scheme or within it. The mini-roundabout may be flat, domed or domed with an overrun area depending on the degree of speed reduction required and also the type of vehicles, which may use the junction.

Narrowing

This is a general term which includes:- build-outs, chicanes, pinch points and reallocation of road space along a route.

Pedestrian refuge

These refuges are designed to assist pedestrians crossing the carriageway, but they also serve to reduce the carriageway width in the same way as an island.

Pinch point

A narrowing formed by two build-outs opposite one another.

Priority system

This gives priority to one direction of traffic and is often used at chicanes or narrowings.

Raised junction

A junction where flat-top humps are used to raise the whole junction area.

Road hump

The term road hump covers vertical deflections which comply with the Highway (Road Humps) Regulations 1999.

Safety cameras

Enforcement cameras e.g. red light and speed cameras.

Speed cushion

A hump which occupies only part of a traffic lane having a width which is less than the front wheeltrack of a conventional bus but is greater than the wheeltrack of an average car. Can be used in various layouts including single, double, triple, and double pairs to suit the road width and layout.

Speed table

Another name for a flat-top hump.

Traffic island

Traffic islands are similar to pedestrian refuges but not intended for pedestrian use. They are primarily used to narrow the available road width and to prevent or discourage overtaking. They may also be used to protect segregated lanes such as bus or cycle lanes.

Vehicle activated signs

A variable message sign which is triggered by a vehicle which exceeds a certain pre-set limit. These may be of two types, speed enforcing or warning of a hazard. The sign is illuminated to show the speed limit or one of the warning signs permitted. 'SLOW DOWN' message may also be used with certain signs.