

Traffic Calming Information

Background

Traffic calming refers to the various measures used to support a speed traffic regulation orders. Such measures are used particularly at sites to reinforce lower speed limits.

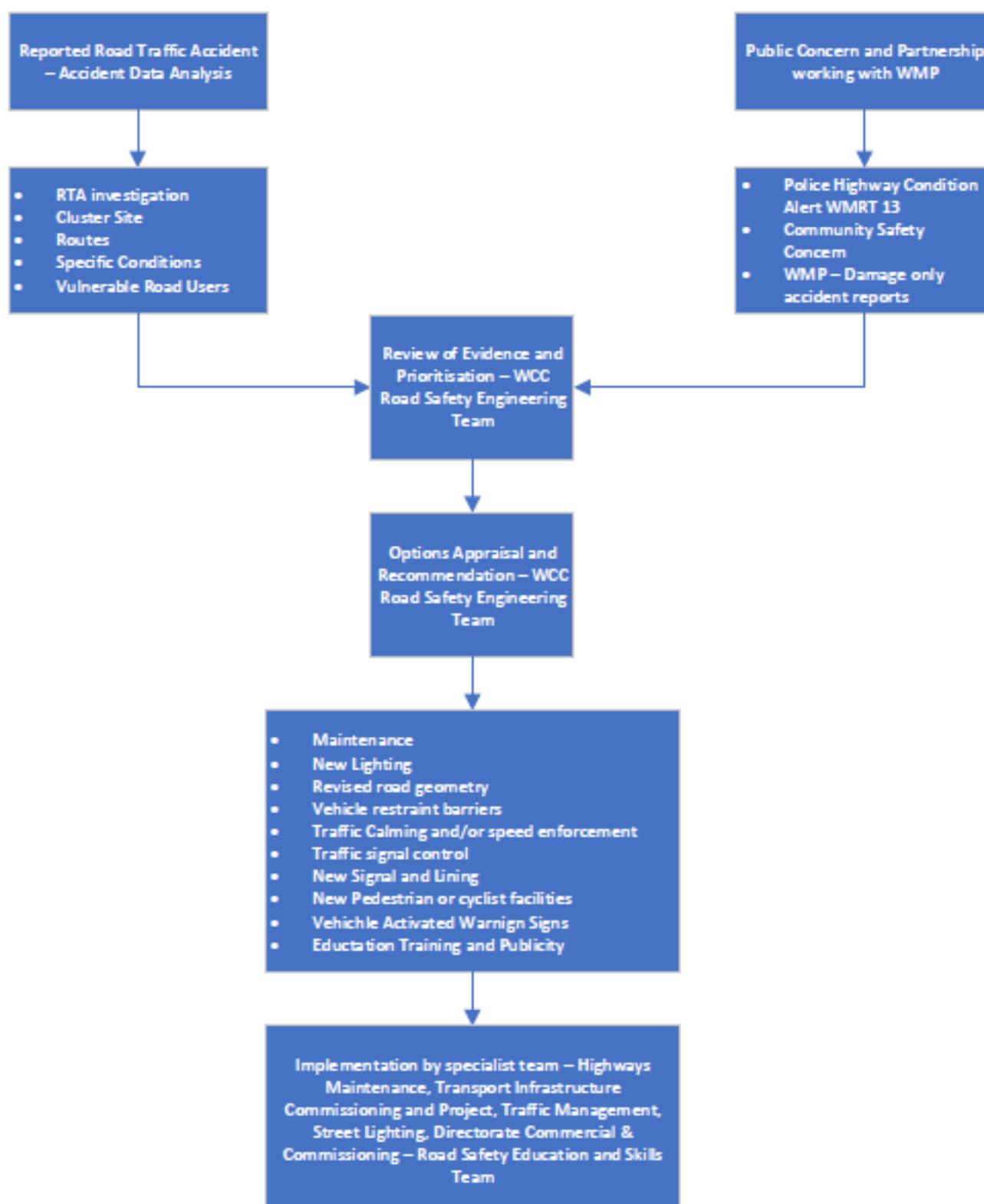
Justification for Implementing Traffic Calming

Traffic calming, by reinforcing speed limits, can reduce the potential and severity of injury accidents and is particularly relevant as a measure for reducing injury accidents to pedestrians and cyclists.

In considering a traffic calming scheme a review of the casualty accident data and the traffic flow data—volume, vehicle types and speed is required. Worcestershire County Council carry out county wide analysis of this data to identify locations where there is significant potential to reduce injury accidents through road safety engineering measures.

In addition to improving road safety, traffic calming may be assessed as being appropriate at a location where there is evidence of community severance due to traffic and increased walking and cycling activity would result from a scheme.

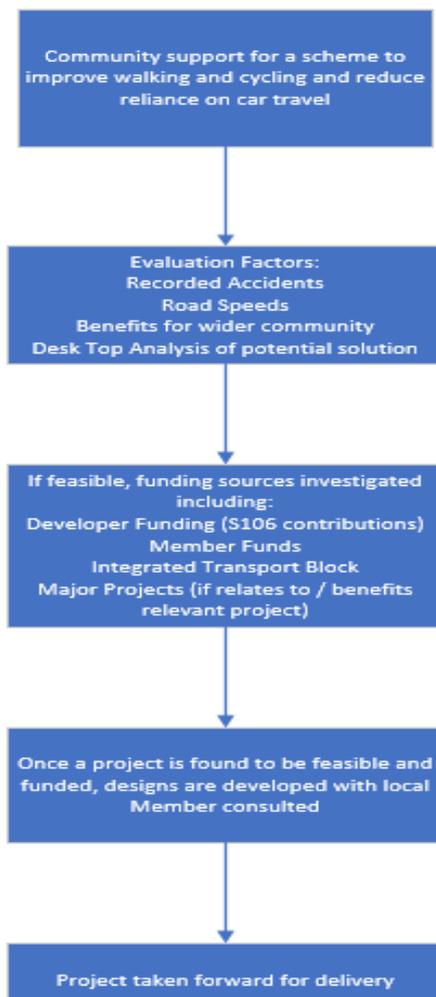
Process for Road Safety improvement Scheme



Appendix 1

Examples of Road Safety Improvement schemes	
Issue	Scheme
A422 Inberrow - Prioritised on RTA investigation, cluster and route analysis	New signing and lining plus resurfacing works
Majors Green - Community led prioritised on review of damage only accident evidence and options appraisal	New signing and lining plus resurfacing works
A450 prioritised on route analysis	Safety improvements to be integrated into congestion improvement project
A456/B4202 Clows Top - prioritised on WMRT13 and accident investigation	Maintenance - relining and replacement signing
ETP - Young drivers - prioritised on vulnerable road users trend analysis	Directorate Commercial and Commissioning - Road Safety Education and Skills team

Community Improvement Scheme Route



Types of Traffic Calming Features available

Measure	Factors to be Considered Note: All measures are subject to highway design standards	
Transverse bar markings	<p>The markings are prescribed in the Traffic Signs Regulation and General Directions 2016 and can only be used in very specific conditions, which are:</p> <ol style="list-style-type: none"> 1. they are to be laid on a one-way approach to a roundabout 2. there is at least 3 km in advance of the site, with no major intersections or bends 3. the road is subject to the national speed limit of 70 mph 4. the collision record for the roundabout includes at least three collisions involving personal injury during the preceding three years, in which speed on the relevant approach was a contributory factor. 	
Road humps	<p>These are not used to slow traffic only to maintain lower speeds once within the traffic calmed zone. They must be accompanied by features that ensure a safe approach speed prior to the run of humps. They are not suitable for bus routes or locations with HGV traffic flow. They create vibration and noise to adjacent properties and may increase air quality concerns. They require street lighting to be in place in accordance with The Highways (Road Humps) Regulations 1999.</p>	
Speed cushions	<p>These are raised rectangular areas. There can be one, two or three, depending on the width of the road. Like humps they are most suitable for built up areas and need slowing features. They do not slow speeds to the same extent as humps but do give emergency vehicles and buses a smoother ride. They can cause the same issues as road humps</p>	
Speed Tables	<p>These are similar to road humps but longer and with a flattened top, sometimes used to give pedestrians a level crossing between footways. They can also be used throughout a junction. They are especially useful where there are a lot of pedestrians. If they are long</p>	

Measure	Factors to be Considered Note: All measures are subject to highway design standards	
	enough, they provide a smoother ride for buses than humps.	
Lane Width Restrictions	Narrowing lanes, using traffic islands and/or road markings can give the impression of a more confined road and may result in reduced speeds. If a road is narrowed special attention must be given to the needs of cyclists	
Gateways Entry Points	Identified by road markings, build outs, coloured surfacing and/or signs indicating that the driver is entering an area where road conditions change, for example entering an urban area or a change of speed limit. Most effective on those drivers that only use the road occasionally.	
Dragons Teeth Rumble Strips	Often used as part of gateway schemes. Rumble strips are a change in the road surface which alert the driver by a change in the sound and feel of the car. Dragon's teeth provide a visual change and narrowing of the road. They are suitable for village entry points. Because rumble strips generate noise they can be unpopular with residents.	
Severed Roads	These provide the ultimate deterrent to rat running. They can prove unpopular with residents as they sometimes cause long diversions and increase traffic on other roads. Emergency access and the needs of services like refuse collection need to be taken into account	
Vehicle activated Signs	These detect the speed of oncoming traffic using a radar device. If a set threshold is exceeded, a sign indicating a specific hazard or speed limit is triggered. They can be temporary or permanent. There is an ongoing power and maintenance requirement although solar power can be an option	

Measure	Factors to be Considered Note: All measures are subject to highway design standards	
Road Width Restriction	<p>Localised widening or construction of footway can narrow the road and slow traffic. They reduce crossing distance and improve visibility for pedestrians crossing the road. Placed alternately they provide chicanes. Roads can be narrowed to such an extent that only single file traffic is allowed.</p> <p>They can also be used to provide sheltered parking. Suitable for use in urban or rural locations, as initial slowing features and as part of gateway features. Single lane build outs are not suitable for roads with high traffic flows as they create congestion and can promote dangerous driving manoeuvres</p>	

Within Worcestershire we have used land width restrictions, road humps historically with speed cushions being used more recently to assist use by buses, emergency vehicles and cyclists, gateway entry points, dragon's teeth and vehicle activated signs.

New Traffic Calming Measures

Road markings and road signs are governed by the Traffic Signs Regulations and General Directions 2016 restricting the development of new ideas. Currently most new measures tend to relate to different road surfacing applications as shown below.



What other authorities do

The following information details neighbouring local authority's approaches towards traffic calming. The presentation to be provided at the meeting gives some details of the initiatives and projects being taken forward by these other LAs. Unfortunately, not all LAs have an obvious process therefore contact has been made with them individually to provide further information which we can make available once received.

Gloucestershire County Council (GCC)

GCC focus on Community led projects where they are encouraged to fund their own evidence gathering and scheme implementation. There is input from GCC Highways on the design and Road Safety Audit of any traffic engineering measures.

Solihull Metropolitan Borough Council (SMBC)

The types of physical or engineered traffic calming measures SMBC could consider include:

- road humps or speed cushions
- table-top road humps
- road or junction narrowing
- traffic splitter islands or roundabouts
- chicanes or build-outs; and
- prohibited movements

Physical traffic calming should be considered a last resort and it will only be offered if other options have failed to reduce the number of people getting hurt.

The Council is in the process of trialling 20mph speed limits outside schools and in residential areas. The use of 20mph limits in Solihull will be considered based on the outcome of these pilot schemes and any future proposals will be subject to the availability of funding and relative priority to other schemes.

Herefordshire County Council (HCC)

Changes to the speed limit and enforcement of speed limits appears to be the leading factor for HCC in relation to speed reduction.

Parish Councils are able to raise a request for a speed indicator device (SID) and for the Parish to go into the SID programme.

Warwickshire County Council (Warws CC)

The following process is taken from Warws CC's website:

'We improve the safety of the county's roads by identifying and treating those sites and routes that have a significant personal injury crash history. As speed is a major factor in many crashes, the majority of work addresses speeding problems and can include traffic calming. We also ensures traffic management (including parking management), and signing complies with key legislation and best practice.

Prioritisation of new safety engineering schemes

New schemes are identified using road safety intelligence to ensure as many casualties as possible are prevented with the funding available and are limited only to those locations where there has been a significant history of injury collisions.

There is currently no funding available for additional safety engineering works to address local speeding concerns. Therefore, due to reduced resources, the Traffic and Road Safety Group no longer have the capacity to investigate requests for alterations or new works on the highway.

Speeding outside schools

Speeding is an enforcement issue, and therefore you would need to refer this matter to the Police Safer Neighbourhood Teams, via your local community forum.

Telford and Wrekin Council (TWC)

The following process is taken from TWC's website:

'Telford & Wrekin Council receive a high level of requests for traffic and road safety schemes which can range from speeding concerns, collisions concerns, parking issues etc. Each year we prioritise and deliver a number of schemes to help tackle these reported issues. As part of this, we consult with the public to ensure those who are impacted by the proposed changes have an opportunity to provide their comments.

It is considered that the public consultation will be a direct test of public support for one or a combination of the options presented before proceeding to detailed design. The outcome of the public consultation will be reviewed in detail and a decision will be made based on the content of the comments received in the context of the wider transport network.

Factors that will be taken into account will include, but not necessarily be limited to:

- road safety
- network operation
- level of support
- detail of any objections.'

Speed Limit History

Looking to the past, a village speed limit initiative was launched in 2000 which pursued 30mph speed limits in many villages in Worcestershire, reinforced with traffic calming measures in the form of village gateways.

Later in 2009 a speed management strategy was developed and presented to cabinet. This cabinet report informed a review, over the next couple of years, of all speed limits along the A and B road network in Worcestershire. Specifically, it was this report that detailed the traffic calming measures pursued, on a case by case basis, outside schools to reduce speeds to an advisory 20mph through active signage.

More recently a trial 20mph speed limit was introduced in the suburban residential area of Callowbrook, Rubery. The trial was pursued to measure the effectiveness of a signed-only 20 mph speed limit for use as a speed management tool in a residential area.

This trial together with consideration of available resource has informed the Council's current measured approach for 20 mph speed limits to ensure we achieve the greatest impact across a range of situations. Specifically, 20mph pursuance is currently considered:

- outside schools through advisory limits
- for all new residential development through appropriate design
- at accident collision cluster sites
- in connection with major projects as appropriate

Types of 20mph applications

20 mph zones consist of wide scale traffic calming features, such as speed humps, chicanes or road narrowings, across an area to support a 20mph traffic regulation order.

20 mph speed limits are indicated by speed limit signs only

Both types are **mandatory** and can be enforced by the police.

There is also a third type, which may be referred to as an **advisory 20 mph zone**. These feature advisory sign assemblies comprising a school warning sign, a sub-plate which says "School 20 when lights show" and flashing amber lights. The lights show at the beginning and end of the school day, to coincide with the arrival and departure of pupils.

Examples of use

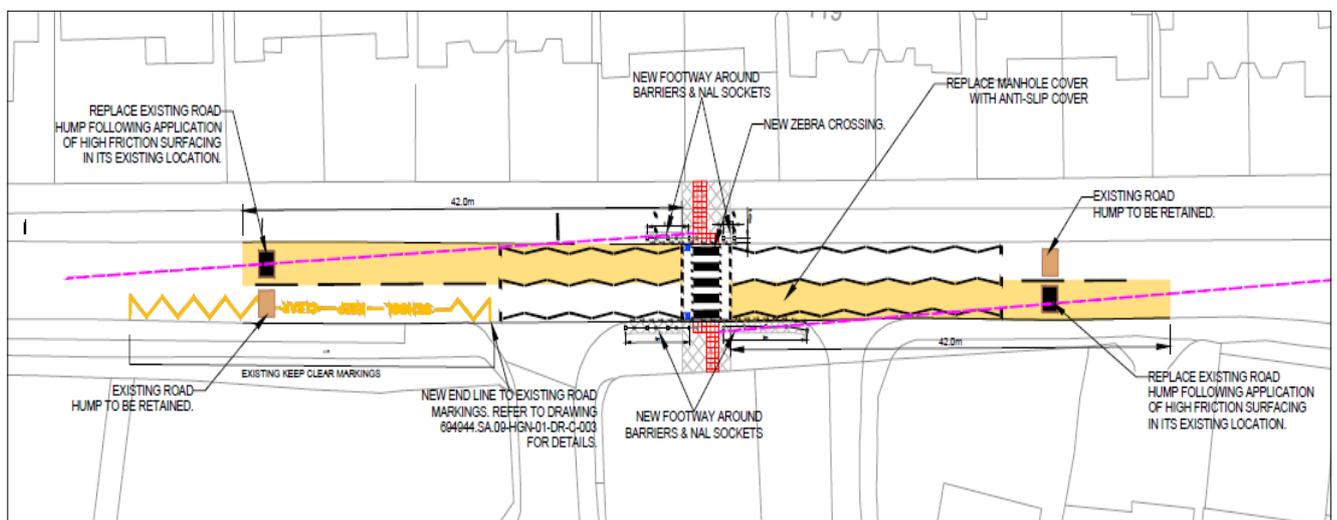
Schools

Pedestrian and vehicle movements around schools are concentrated into two short and extremely busy periods, one at the beginning and one at the end of the day. Conditions are relatively quiet at other times. The use of **advisory 20 mph zones**, which operate only at those periods, is therefore appropriate. Speeds tend to be low, because of congestion caused by the number of vehicles, so the advisory zone is self-enforcing. The flashing lights on the signs provide added visual impact and

help draw driver attention to pedestrian activity. The lights also help to support the school crossing patrol, if one is present.

Various Worcestershire schools were initially assessed as part of the Safer Routes to School initiative. However, the majority were covered by a later assessment between 2009-2011 with various speed reduction signage pursued according to the findings. New requests for improved measures are considered where circumstances have changed requiring a review, which would highlight any additional measures with implementation in line with resources. A recent example, is the 20 zone in Shawhurst Lane, Wythall which features speed cushions and a Zebra crossing on the road fronting the local primary and secondary schools.

Typical signage is shown in the diagram.





Residential development design

Roads on new residential developments are (and have been for several decades now) built to constrain speeds by design. Although these roads would meet the Department for Transport criteria for a **20 mph speed limit**, it would be difficult to justify the investment required to make and signpost a legal Order which merely formalised existing driver behaviour and made no noticeable improvement.

Specifically our Streetscape Design Guide pursued a maximum design speed for all residential roads of 20mph, which the developer can achieve by restricting straight lengths of carriageway to no more than 100m in length and where this cannot be achieved through changes to surfacing materials at junctions, horizontal deflection involving the use of central refuges & on-street car parking provision and visual narrowing.



Major Projects

All major projects consider accidents and pursue measure to reduce occurrence. Traffic calming measures and low speeds relate particularly to urban public realm improvements. An example of an environmental major project that pursued a 20mph speed limit was Pershore town centre scheme. This scheme was introduced with various engineering measures to encourage lower speeds.



Delivering improvements for walking and cycling

Projects which support the improvement of the highway environment for pedestrians and cyclists can be a further avenue which utilises 'traffic calming' measures to assist lowering speed. Over the last number of years projects have been delivered across the county which utilise some of the methods as described within the table above. These have focused on the provision of visual narrowing where lining and signing of a stretch of road can be used to highlight its use by pedestrians and cyclists and visually constrain the amount of carriageway space available, thus lowering speeds. Other projects have also installed raised features such as speed cushions to physically lower the approach speeds of vehicles using the relevant section of road. These vertical features often complement existing 20 mph areas to aid speed reduction.

Lower speed environments create better cycling conditions for on-road cycling, create better and safer crossing opportunities and lower the risk of serious injury and fatality.

Further information on specific projects will be given at the meeting on 5 July.

Conclusion

Traffic calming features are generally utilised at key points along the highway network to reinforce low speed limits.

Looking to the future, the Welsh Assembly considering making 20 mph the default speed limit for roads in residential areas. Their idea is at an early, exploratory stage but – if successful and expanded beyond the Principality – it would avoid the need for local authorities to introduce 20 mph limits by order. That would mean substantial cost savings. Additionally, the advance of technology with black boxes in the car to monitor driver behaviour or even driverless cars will provide greater adherence to speed limits in the future removing the need for traffic calming measures.