



Hampshire
County Council

Economy, Transport and Environment Department

Technical Guidance Note TG11 - Traffic Calming

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1. Policy/Approach

- 1.1. In 2014, the County Council introduced a Traffic Management policy to ensure consistency in the provision of traffic management & calming measures within the County. In 2016 an overarching casualty reduction led policy was endorsed that focuses traffic schemes to locations where a history of injury accidents is identified. This guidance note sits within these policies as set out on the web page [Making Roads Safer](#) and detailed within the [Traffic Management Policy & Guidance](#).
- 1.2. The retrospective installation of traffic calming measures should not be necessary on well-designed roads.
- 1.3. Appropriate highway layouts and alignments which effectively consider site location and circumstances are always preferable to the installation of “traffic calming features”.



Roads within new developments shall be geometrically designed to not require additional special traffic calming features

- 1.4. Traffic Calming measures **shall not** be installed only based on a perceived safety issue (by the general public, Parish, District, Borough or County Councillors). Even where an injury accident issue does exist, careful review of the site-specific circumstances (including geometry, signing and lining) should be undertaken prior to deciding if traffic calming is actually required rather than an adjustment to the geometry/signing/lining.
- 1.5. The future maintenance requirements of traffic calming measures such as traffic islands, flat topped road humps, raised junction tables, speed cushions and the materials used for their construction need to be considered. These features are expensive to maintain and as such should be avoided wherever possible. Where traffic calming features need to be installed retrospectively, consideration shall also be given to measures to deter motorists from simply using alternative routes as ‘rat-runs’.
- 1.6. The impact on the existing road pavement in the vicinity of any introduced traffic calming measures shall also be considered. The impact of channelised traffic, i.e. two-way traffic using one lane, and the compression effect caused by the impact of vehicles travelling onto and off flat-topped road humps and junction tables, can significantly reduce the life of the existing pavement. In such situations the existing pavement and foundation shall be investigated and checked in line with CD 227 and CD 226.
- 1.7. Commuted Sums will be applied to cover future maintenance liabilities for any traffic calming features that are deemed to be non-standard and

that place an additional maintenance burden on the Highway Authority. Use of such features shall be agreed in consultation with Hampshire County Council. For further guidance refer to [The Commuted Sums Policy](#).

- 1.8. If a traffic calming scheme results in changes to on-street parking, traffic movements or speed limits, a Traffic Regulation Order (TRO) will be required. Guidance on the TRO process is given in [Technical Guidance Note TG21](#).

2. Definitions and Abbreviations

DfT	Department for Transport
HCC	Hampshire County Council
HCV	Heavy Commercial Vehicle
LTN	Local Transport Note
MSA	Million Standard Axles
NFU	National Farmers Union
RSA	Road Safety Audit
TAL	Traffic Advisory Leaflet
TRO	Traffic Regulation Order
TSRGD	Traffic Signs Regulations and General Directions

3. Technical Requirements

3.1. General

- 3.1.1. As stated in Section 1 above, appropriate highway layouts and alignments which effectively consider site location and circumstances are always preferable to the installation of “traffic calming features”.



Roads within new developments shall be geometrically designed to not require additional special traffic calming features

- 3.1.2. Where retrospective traffic calming is absolutely necessary, there are many different types of traffic calming measures and features that can be considered. The selection of the most appropriate option will depend on site specific circumstances. Factors such as availability of road width, actual traffic speeds, speed limits, traffic flows and vehicle types using the road (such as Heavy Commercial Vehicles (HCVs) and buses) and nearby facilities such as emergency hospitals, schools etc will affect the choice of feature(s). The choice will also be dependent on available funding for the design process, installation and future maintenance.
- 3.1.3. Although commonly associated with reducing speed, traffic calming can also be used to deter traffic from using a particular route. As stated in Section 1, the design should be site specific and the ease, frequency and cost of future maintenance should also be considered. Conversely, care should also be taken to avoid encouraging traffic to use alternative routes where this is not the intended outcome of the traffic calming scheme.
- 3.1.4. As it is expensive to install and maintain, traffic calming cannot be provided for all roads where traffic is exceeding the speed limit or in all locations where traffic is using local roads to avoid congestion on main routes. In addition, although there are benefits from lower speeds and/or traffic flows, there can be disadvantages to some road users, depending on the type of feature, as indicated in the following sections.
- 3.1.5. Routes and appropriate access for emergency vehicles through all traffic calming features or zones must be considered in the design stage using swept path analysis and consultation with the emergency services. Refer to TAL 1/07 and the Highways (Traffic Calming) Regulations 1999 and the Highways (Road Hump) Regulations 1996. Under the Traffic Calming Regulations, traffic calming works which must be consulted include buildouts, chicanes, gateways, islands, overrun areas, pinch-points, or rumble devices or any combination of such

works. Under the Road Hump Regulations, all vertical deflections schemes must be consulted.

- 3.1.6. As stated above, the choice of measure(s) to be introduced is largely dependent on the site specifics. With reference to the list below, the removal/introduction of road markings is the most cost effective and the use of rumble strips is to be avoided in most cases. Only if considered absolutely necessary for improvement of pedestrian and driver safety on an existing road, should one or more of the following be considered (the list of features being in the order of preference):
- a) Road markings – removal or introduction.
 - b) Gateways and signs.
 - c) Revised speed limits.
 - d) Vehicle type restrictions.
 - e) Vehicle movement restrictions.
 - f) Horizontal deflections such as pinch points, build outs, chicanes and islands
 - g) Vertical deflection methods such as road humps of various types, raised tables or speed cushions.
 - h) Rumble strips and over-run areas.
- 3.1.7. All traffic calming schemes should be designed to minimise acceleration and deceleration at each feature and encourage a consistent speed through the scheme. Acceleration and deceleration between features can result in slight local increases in noise and small local reductions in air quality. Careful design and ensuring calming features are suitably spaced will help encourage smooth driving, thus minimising such effects. Reducing speeds in residential areas, while making sure that it does not result in an increase in vehicle emissions, will reduce road danger, injuries and air pollution (NICE Guideline NG70).
- 3.1.8. Before the design of any traffic calming scheme commences, the following should be reviewed:
- [HCC Construction Standard Details](#)
 - HCC Standard Detail Notes for Guidance
- 3.1.9. Guidance on the submission of Departures from Standard is given in [Technical Guidance Note TG17](#).
- 3.1.10. The Road Safety Audit (RSA) process shall be followed on all schemes. [Technical Guidance Note TG18](#) provides information on the RSA process.
- 3.1.11. A list of documents providing information and guidance on the design of traffic calming features is provided in Section 4.

3.2. Road Markings – Removal or Introduction

- 3.2.1. Virtual narrowing can be achieved by the introduction of carriageway edge lines, together with the removal of centreline markings. This gives the impression that the carriageway may not be wide enough for vehicles to pass each other, resulting in reduced speeds.
- 3.2.2. Similarly, the introduction of ghost islands and central hatching can also be used as a traffic calming measure reducing the width of vehicle lanes.
- 3.2.3. Traffic Advisory Leaflet TAL 1/00 provides advice on traffic calming in villages on major roads. One of the features included in TAL 1/00 is the use of Dragon's Teeth road markings, along with recommended dimensions for these markings.

3.3. Gateways and Signs

- 3.3.1. 'Gateways' are usually a combination of features used to indicate the entry into a particular area where a driver's behaviour should change, i.e. the entry to a village or residential area. For example, street furniture and fencing.
- 3.3.2. Gateways can reduce speeds in their immediate vicinity, but additional subsequent measures may also be required to maintain the reduced speed throughout the length of road in question.
- 3.3.3. The use of permanent vehicle activated signs, such as those highlighting the speed limit or "Slow Down" will **only** be acceptable as a casualty reduction measure at sites where other options have been tried but have not proved effective.
- 3.3.4. Guidance on the use of signs at Gateways is given in the [Traffic Management Policy](#). The design of nameplates is reasonably flexible as long as the Traffic Signs Regulations and General Directions (TSRGD) requirements are met. Yellow backing boards are reserved for high profile sites where previous safety issues exist which are borne out by the injury accident record.
- 3.3.5. Gateways in rural areas particularly need special consideration of the environmental impact and this is covered in Section 3.10.
- 3.3.6. Street furniture at Gateways should be made as passively safe as possible.

3.4. Revised Speed Limits

- 3.4.1. A Traffic Regulation Order is required for a change of speed limit. [Technical Guidance Note TG21](#) sets out the procedure for obtaining a TRO.
- 3.4.2. Changes to speed limits will only be implemented if justified on injury accident grounds as part of a casualty reduction scheme.

- 3.4.3. A support case is required for the necessary consultation with the local Member(s) and the Police. Without this initial consultation, a TRO for a proposed change cannot be advertised. Evidence should be provided of existing mean traffic speeds. Existing mean traffic speeds should be at or below the proposed speed limit (refer to DfT Circular 1/2013 – Setting Local Speed Limits). Where existing mean traffic speeds are above the proposed speed limit, engineering measures should be considered to reduce traffic speeds to a level that is aligned to the proposed lower speed limit. This will support a lower speed limit making it self-enforcing. Speed related accidents can also be used to support the proposal.
- 3.4.4. Hampshire Constabulary has a limited capacity to enforce speed limits on Hampshire Roads. It is quite likely that they will not have the ability to provide additional enforcement at locations in response to potential community expectations to the lowering of the current speed limits.
- 3.4.5. The minimum length of a speed limit zone should generally be not less than 600m to avoid too many changes of speed limit along a route. The length adopted will depend on the limit applied and on the conditions at or beyond the end points (e.g. steep gradients, sharp bends, junctions, access roads, humpbacked bridges or other hazards and visibility of the signs). Further information on speed limit lengths, on transitional limits and on exceptions where the rules may be varied is given in the DfT Circular 01/2013.
- 3.4.6. The [Traffic Management Policy](#) provides details on the setting of speed limits within the County.
- 3.4.7. The Traffic Signs Manual Chapter 3 provides advice on the regulations for signing speed limits.

3.5. Vehicle Type Restrictions

- 3.5.1. Examples include the introduction of HCV bans, Prohibition of Driving and Bus Gates. A Traffic Regulation Order with the statutory consultations is required for vehicle type restrictions. Refer to [Technical Guidance Note TG21](#) for guidance on the TRO process. Refer to [Technical Guidance Note TG4](#) for further guidance on Bus Gates.

3.6. Vehicle Movement Restrictions

- 3.6.1. Examples include banning turning movements and the creation of one-way streets, no entry and road closures. Traffic Regulation Orders with the statutory consultations are required for vehicle movement restrictions. Refer to [Technical Guidance Note TG21](#) for guidance on the TRO process.
- 3.6.2. It is important to consider how traffic flows in the local area will be affected by the introduction of such restrictions and whether drivers are likely to try and find alternative routes to avoid them. This may result in congestion, safety problems and carriageway maintenance issues in

other locations on the surrounding network. Alternative routes for the banned movements shall be checked to ensure they are suitable to take the expected traffic.

- 3.6.3. Restrictions on vehicle movements can affect emergency services vehicles and early consultation with the relevant organisations (Police, Fire, Ambulance) should be undertaken.
- 3.6.4. Large planters can provide a physical means to reinforce Traffic Regulation Orders restricting certain vehicles (e.g. mode filtering for Quiet Streets). Planters may only be installed in the Highway where the District or Parish Council has agreed to maintain the planter and its contents in perpetuity and has entered into an agreement with Hampshire County Council under Part VIIA of the Highways Act 1980 for the enhancement of the highway amenity.

3.7. Horizontal Deflections

- 3.7.1. Horizontal deflections shall only be considered within roads subject to a speed limit of 40mph or less.

- 3.7.2. The HCC Abnormal Loads team and the Police should be consulted prior to design of any road narrowing or deflecting features (such as chicanes) to ensure that the road in question is not part of a strategic, protected abnormal load route. The proposed features need to be suitable for the manoeuvrability, wheelbase width and overall length of both HCVs and abnormal load vehicles. A minimum carriageway width of 3.5m should be allowed for abnormal indivisible load vehicles, which means that simple road narrowings complying with this may be ineffective as speed controlling features for cars and other light vehicles.

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- 3.7.3. If the route is likely to be used by large agricultural vehicles, including combine harvesters, the National Farmers' Union shall be consulted. The Hampshire's NFU representative's contact details are available on the [Hampshire NFU website](#). This does not necessarily guarantee that all local farmers will be made aware of the proposals, however, and some additional consultation may be required with local farmers.
- 3.7.4. The locations of existing features such as property accesses, pedestrian refuge islands, on-road parking, junctions, bus stops and forward visibility generally shall all be considered when designing horizontal deflections, and vehicle movements shall be tracked accordingly. If the presence of these features results in the traffic calming deflections being too far apart, it is unlikely that they will have much effect on speeds overall. Buildouts can be used, in some cases, to protect on-road parking and provide easier crossing locations. Refer to [Technical Guidance Note TG9](#) regarding locations of bus stops.

- 3.7.5. Extensive guidance on the design of horizontal deflections is given in LTN 1/07.
- 3.7.6. The use of buildouts or chicanes on fairly straight stretches of road with good forward visibility does not necessarily control speeding, whether priority signage is used or not. Their presence can even lead to increased speeds as motorists attempt to beat other vehicles to the build-out point, even if priority is given to those travelling in one direction.
- 3.7.7. As horizontal deflections will create channelised traffic, the construction of the existing carriageway shall be assessed for its ability to withstand the predicted channelised commercial vehicles flows. Where it cannot be demonstrated that the channelised section of carriageway has a 40-year design life for the predicted MSA, it shall be reconstructed accordingly. The designer shall supply the pavement design calculations for approval and HCC's Asset Management shall be consulted regarding the suitability of the overall proposals.
- 3.7.8. Virtual narrowing should also be considered (see Section 3.2).

3.8. Vertical Deflections and the Highways (Road Humps) Regulations

- 3.8.1. The introduction of vertical deflections (including speed cushions) will require a statutory advertisement and consultation period, during which dialogue with the police, fire and ambulance services and district council shall be held. Bus operators shall also be consulted as vertical deflections often result in accelerated mechanical wear and tear and can cause passenger discomfort/injury.
- 3.8.2. The Highways (Road Humps) Regulations state that vertical deflections must only be used on lit roads with a speed limit of 30mph or less. They may be used on unlit roads within a 20mph zone.
- 3.8.3. The Regulations also state that vertical deflections will not be permitted in the vicinity of controlled crossings, nor
- a) on a railway level crossing or within 20 metres of any rail forming part of the railway track at any such crossing,
 - b) within 2 metres of any rail providing support and guidance for vehicles carried on flanged wheels and running in a carriageway,
 - c) under or within 25 metres of any part of a structure over a carriageway which is 6.5 metres or less above the surface of the carriageway,
 - d) above or within 25 metres of any part of a bridge over which the carriageway passes or any part of a tunnel, culvert or other similar structure which crosses beneath a carriageway.
- 3.8.4. Vertical deflections will not be permitted on Priority One salting routes. Vertical deflections may only be used in exceptional circumstances on Priority Two routes. For new roads, the salting priority will be assigned in accordance with the [Highways Maintenance Management Plan](#) and

supporting documents. An extract of the classification of the salting routes is provided for information:

Priority One

- Main traffic routes ("A" class roads)
- Main access routes to important industrial and large educational establishments (500+ pupils)
- Main access routes to major accident and emergency hospitals, and to important emergency service locations
- Roads used as major bus routes (50 per day urban, 25 per day rural)
- Roads passing through major shopping centres
- Other routes busy during peak traffic periods
- During a declared weather emergency, routes to Prepared Rest Centres
- Routes to major critical infrastructure (as defined by HCC Emergency Planning)

Priority Two

- Single access routes to villages
- Roads near other schools
- Roads used as other bus routes
- Roads to other hospitals
- Roads to minor fire and ambulance establishments
- Roads passing through other shopping centres
- Roads with gradients that make driving hazardous

Priority Three

- All other public highways not covered by the above

Community Salt Routes

- Routes to all other schools and community facilities such as health centres, not included above.



No vertical deflections are to be used on Priority One salt routes.

Vertical deflections may only be used in exceptional circumstances on Priority Two salt routes.

- 3.8.5. Outside London, DfT authorisation will be required to place toucan and parallel crossings on road humps (Refer to LTN 1/2020). TAL 7/96 provides further information on the Highways (Road Humps) Regulations. Also see [Technical Guidance Note TG21](#) – Traffic Regulation Orders.

Flat Topped Road Humps and Raised Junction Tables

- 3.8.6. Refer to the current revisions of the following [HCC Highway Construction Standard Details](#), C Series, HCC11/C....:
- 100 – Flat topped road hump & junction table Type 1
 - 105 – Concrete block paved flat topped road hump Type 1A
 - 110 – Concrete block paved crossing in flat topped road hump Type 1
 - 115 – Imprinted surface course flat topped road hump Type 1B
 - 120 – Flat topped road hump Type 2
- 3.8.7. The relevant section of the [Notes for Guidance](#) are to be read in conjunction with these construction drawings.
- 3.8.8. Flat topped road hump Type 1A would generally be used as an entry treatment or a junction table, which can at the same time provide improved side road crossing facilities for pedestrians.
- 3.8.9. The maximum permitted height is 100mm but there can be a high incidence of vehicle ‘grounding’ at this height and therefore this is not recommended within Hampshire. A height of 75mm (most used in Hampshire) will substantially lessen the likelihood of grounding, but also result in reduced speed reduction.
- 3.8.10. On a bus route the maximum recommended on/off ramp gradient is 1 in 20. On other routes ramp gradients of between 1 in 15 and 1 in 10 can be considered, but driver comfort will be reduced as the gradient is increased. Whichever gradients are provided, the longitudinal effect of the carriageway should be considered, with the length of the ramp adjusted to ensure that the actual gradient is not too steep on the downhill hill side or too slack on the uphill side.

- 3.8.11. Highway drainage is affected by the introduction of vertical deflections that cover the entire width of the carriageway, so modifications to the existing drainage system will be necessary. Gullies shall be introduced on the upstream side of the feature, and on both sides where there is little or no longitudinal fall on the carriageway i.e. 1 in 200 or less. Leaving gaps between the feature and the kerb lines is advisable where it is impossible to install gullies on the upstream side of the ramp and the hump isn't going to be utilised by pedestrians (Refer to [Standard Detail HCC11/C/120 Flat Topped Road Hump Type 2](#). Only gullies will be permitted as additional drainage features – channel and gratings, or kerb drainage or 'Nib Nobbler's' shall not be permitted.
- 3.8.12. Refer to Local Transport Note 1/20 for guidance on using road humps on cycle routes.
- 3.8.13. The surrounding existing carriageway construction and its condition shall be investigated when considering the introduction of vertical deflections. Local carriageway reconstruction (increasing the construction thickness) either side of the feature is likely to be necessary to ensure durability. The reconstruction detail and method of compaction shall be agreed with HCC and it should be designed to cater for future predicted commercial vehicle flows (MSA). It should extend a minimum of 2m along the carriageway, across the whole width, from the toe of each ramp. The extent and details for reconstruction under the feature, if it is less than 4m long, shall also be agreed with HCC.
- 3.8.14. For details of surfacing material options and thickness refer to the [Hampshire Highways Surfacing Options Guidance](#).
- 3.8.15. Signs are required to alert drivers to the fact that they will encounter vertical deflections. Information about the signs to be provided and their location is given in Local Transport Note 1/07 and in the Traffic Signs Manual Chapter 4.
- 3.8.16. The HCC Street Lighting Client shall be consulted for an assessment of the existing lighting in the vicinity of any proposed humps or tables to ensure the lighting is adequate for the introduction of these features. The type/colour of proposed surfacing may also impact on the lighting requirements.

Speed Cushions

- 3.8.17. Refer to the current revision of the HCC Highway Construction [Standard Detail HCC11/C/125](#).
- 3.8.18. The relevant section of the [Notes for Guidance](#) is to be read in conjunction



Local carriageway reconstruction (increasing the construction thickness) either side of the feature is likely to be necessary to ensure durability.

with this construction drawing.

- 3.8.19. Speed cushions should only be sited on straight sections of road as they can be a hazard to motorcyclists on a horizontal curve (although there should always be the minimum gaps between the kerbs and the cushions and between the cushions themselves to allow motorcyclists to avoid them – refer to the Notes for Guidance). They should also be sited where forward visibility to them is suitable. They are often more acceptable to the public than full width road humps and bus operators tend to view them more favourably as buses will generally be able to straddle the cushions.
- 3.8.20. Simple pairs of cushions (one in each lane) become less effective on wide carriageways where there is room for drivers to avoid them. In these cases, a third cushion can be added, provided the minimum distances between the cushions and between the cushions and the kerbs can be maintained.
- 3.8.21. Dimensions for speed cushions are provided on HCC Highway Construction [Standard Detail HCC11/C/125](#), but each site should be considered individually with respect to the types of vehicles expected to traverse them. On non-bus routes, wider cushions (up to 2m wide) may be appropriate.
- 3.8.22. Consideration should be given to the longitudinal fall on the carriageway as this can create steep gradients on the uphill approach and slack gradients on the downhill approach. In such circumstances the ramp lengths are adjusted to create effective gradients in line with the speed cushion standard detail.
- 3.8.23. Signing and street lighting are requirements for speed cushions (refer to 3.8.15 & 3.8.16). Speed cushions are also covered by the Highways (Road Humps) Regulations.
- 3.8.24. Prefabricated, modular surface mounted cushions are not permitted for use within Hampshire, as they are too easily damaged and require replacement parts too often.
- 3.8.25. All road humps, junction tables and cushions shall be of bituminous construction (asphalt) in accordance with the [HCC Standard Details](#). It is important that the laying requirements of BS 594987 are accurately followed to avoid material failure (usually disintegration of the leading edge and sides).

3.9. Over-Runnable Areas and Rumble Devices

- 3.9.1. The Highways (Traffic Calming) Regulations 1999 permit rumble devices up to 15 mm in height, provided no vertical face exceeds 6 mm in height. These requirements affect both over-runnable areas and rumble devices.
- 3.9.2. Over-runnable areas are used to create the illusion that the useable carriageway is narrower than it is. At roundabouts they can be used to

deflect lighter traffic away from a straighter faster path, while still enabling larger vehicles to turn without a problem.

- 3.9.3. The use of over-runnable areas **shall be restricted to a maximum width of 1.5m** and **shall only be permitted** with site specific approval from the Asset Management Team (for Developer schemes, this shall be through the S278/S38 design audit process). They shall only be permitted where it can be proven that a compliant junction, or deflection, cannot be produced without an over-runnable area, irrespective of the land required to achieve the compliant design.
- 3.9.4. All overrun areas will incur [Commuted Sums](#).
- 3.9.5. Where it is proven that an overrun area is unavoidable, the preference will be to use an imprinted standard asphalt surface course with a inlay highlighting the imprinted blockwork pattern (such as DuraTherm by [Ennis-Flint](#) or similar approved), The asphalt carriageway surface is reheated post-laying, then a preformed thermoplastic marking material is inlaid slightly below the asphalt surface. This inlay is then heated in place. Generally, this will be without an additional bullnose kerb being installed around the outside of the over-run area. Patterns shall be limited to either Herringbone or Running Bond. The thermoplastic inlay shall be limited to either white or sand colours.
- 3.9.6. The use of granite setts and imprinted thin surface course (such as 'Imprint') are generally no longer permitted for use within Hampshire due to concerns over ongoing maintenance costs, sustainability and buildability. Granite Setts may be permitted **ONLY in exceptional circumstances** (such as due to their location within a conservation area or for essential continuity purposes).
- 3.9.7. Where the over-run area is permitted to be slightly raised, it will generally be constructed as follows:
- With the outer kerbed edge having a 15mm upstand with rounded profile so as to not exceed the maximum 6mm vertical face.
-
- With a 7.5 degree slope rising towards the inner island/ edge of carriageway, subject to a maximum rise of 150mm.
- 3.9.8. The designer shall design the over-runnable area to the same design standards as the surrounding carriageway. Whether the over-runnable area is to be constructed within an area of existing carriageway or as proposed new construction, it shall be designed to carry the commercial vehicle flows (MSA) that precipitated the proposal to install this feature. The commercial vehicle flows used in the calculation shall be existing plus those predicted from any new development. The construction shall have a 40-year design life. The designer shall supply the pavement design calculations as part of the over-run proposal.

- 3.9.9. Where, as a result of installing an over-runnable area, traffic will be channelised, the construction of the existing or proposed carriageway shall be assessed for its ability to withstand the predicted commercial vehicle flows (40-year design life). Where the over-run area is to be installed within an existing carriageway, the channelised section of the carriageway shall be reconstructed if it cannot be demonstrated that it has a 40-year design life.
- 3.9.10. The designer shall ensure that the radius for the outer edge of the over-runnable area can be formed from readily obtainable radiused kerbs. All details shall be appropriate to the site-specific requirements.
- 3.9.11. The bed and surround to all kerbs should be sufficiently robust to avoid displacement under traffic loading. It may be necessary to provide subbase beneath the kerb bed. Where the detail is to be used in areas with poor ground conditions, the width and depth of the ST4 concrete bed and surround should be increased. Where the site location is likely to include traffic loading by specialist vehicles (e.g. tanks due to proximity to MoD bases or concentrated HCV load near distribution centres) the kerb detail will need to be developed in liaison with HCC's Asset Management team.
- 3.9.12. Where installed within an existing carriageway, the surface and binder course to the front of the kerb should be neatly saw cut. Reinstatement of the surface course and treatment of the receiving surfaces shall be as detailed on [Standard Detail HCC11/M/010](#).
- 3.9.13. A drainage solution shall be provided to ensure that ponding does not occur at any 'low spots' created as a result of an over-runnable area. Ideally the drainage should be positioned such that it is not in a location that will be continually over-ridden, i.e. not within a wheel track.
- 3.9.14. Over-runnable areas shall not be used in un-lit conditions. Lighting is to be provided to illuminate any over-run area installed.
- 3.9.15. Overrun areas should not be used adjacent to walkers, cyclists and horse-riders crossings. Where an overrun area is used adjacent to a pedestrian crossing, the overrun areas should not resemble footways or refuges in order to discourage pedestrians utilising them to cross the carriageway.
- 3.9.16. Rumble strips, and other devices such as Rippleprint™ or other similar products, alert drivers to a hazard or change in conditions but are unlikely to be effective as speed reducing features. They also often become a noise nuisance and/or transmit vibration beyond the carriageway. These effects are especially relevant where the rumble devices are regularly over-ridden by HCVs/buses and in areas with subgrades such as alluvium and peat. Due to the nature of their construction, these features require frequent maintenance. Because of their ineffectiveness in reducing traffic speeds, their potential to cause noise and vibrations and the cost of future maintenance, they are not accepted within the adoptable highway.

3.10. Traffic Calming in Rural, Conservation or Special Designation Areas

- 3.10.1 Design of traffic calming for villages and rural areas requires special consideration of the requirements for lighting, signage and the passage of large, heavy agricultural vehicles.
- 3.10.2. The features need to be designed to fit sympathetically into the local environment (timber bollards rather than plastic bollards, for example) and the generation of noise from raised features may be more of an issue than in urban regions. In most cases physical traffic calming measures, based on vertical deflection, are not suitable for rural routes or conservation areas due to the legal requirements for associated signs and lighting.
- 3.10.3 The Campaign for the Protection of Rural England is keen to reduce the impact of signs and lines in rural areas by limiting the use of yellow backed signs and general sign clutter where possible. Air quality is another consideration. However, as the speed reductions possible are relatively small, the features are unlikely to have a great effect on vehicle acceleration or deceleration.
- 3.10.4. Some ideas for 'natural' or psychological calming measures that may be suitable in rural areas and villages are discussed in Local Transport Note 1/07 but prior consultation with HCC Traffic and Safety team is required before such measures are proposed to ensure that they are acceptable.
- 3.10.5. Advice from the HCC Traffic and Safety team should always be sought when traffic calming is proposed within rural areas, particularly in ecologically sensitive areas. For S278 schemes this consultation will be undertaken by the Design Audit Engineer as part of the S278 Design Audit process.

4. Bibliography

- 4.1. There are numerous reference documents available containing information and guidance on traffic calming schemes. A list of some of them is given below.

Regulations

The Highways Act 1980

The Highways (Road Humps) Regulations 1999

The Highways (Traffic Calming) Regulations 1999



All traffic calming devices and features to be introduced on existing highways at the Developer's expense must conform with the requirements of current regulations and advice. Scheme details are to be supplied by the Developer for Design Audit by the Highway Authority. Non-conformity with current regulations may prevent adoption of new highways by the Highway Authority.

DMRB

CD 143 Design for walking, cycling and horse-riding

CD 116 Geometric Design of Roundabouts

Local Transport Notes (LTN)

1/07 Traffic Calming

1/20 Cycle Infrastructure Design

'Roads' and DfT Circulars

3/90 The Highway (Road Humps) Regulations 1990

2/92 Road Traffic Act 1991 – Road Humps and Variable Speed Limits

2/93 The Highways (Traffic Calming) Regulations 1993

3/93 Road Traffic Regulation Act 1984: Sections 81-85 Local Speed Limits

4/96 Road Humps

5/99 20 mph Speed Limits

02/2006 The Quiet Lanes and Homezones

01/2013 Setting Local Speed Limits

Traffic Advisory Leaflets (TAL)

1/87	Measures to Control Traffic for the Benefit of Residents, Pedestrians and Cyclists.
3/90	Urban Safety Management Guidelines from IHT
7/91	20 mph Speed Limit Zones
2/92	The Carfax, Horsham 20 mph Zone
2/93	20 mph Speed Limit Zone Signs
3/93	Traffic Calming Special Authorisations
7/93	Traffic Calming Regulations
11/93	Rumble Devices
12/93	Overrun Areas
13/93	Gateways
1/94	VISP - A Summary
2/94	Entry Treatments
3/94	Fire and Ambulance Services - Traffic Calming: A Code of Practice
4/94	Speed Cushions
7/94	Thumps Thermoplastic Road Humps
9/94	Horizontal Deflections
1/95	Speed Limit Signs - A Guide to Good Practice
2/95	Raised Rib Markings
7/95	Traffic Islands for Speed Control
1/96	Traffic Management in Historic Areas
2/96	75mm High Road Humps
4/96	Traffic Management and Emissions
6/96	Traffic Calming: Traffic and Vehicle Noise
7/96	Highways (Road Humps) Regulations 1996
8/96	Road Humps and Ground-borne Vibrations
2/97	Traffic Calming on Major Roads: A49, Craven Arms, Shropshire
6/97	Traffic Calming on Major Roads: A47, Thorney, Cambridgeshire
10/97	Halifax Historic Core Zone
12/97	Chicane Schemes
1/98	Speed Cushion Schemes

- 2/98 Lincoln Historic Zone
- 8/98 Shrewsbury Historic Core Zone.
- 9/98 Sinusoidal, H and S Humps.
- 2/99 Havant Traffic Calming Scheme.
- 8/99 Urban Safety Management: using SafeNet Software.
- 9/99 20 mph speed limits and zones.
- 13/99 Historic Core Zones: Bury St Edmunds.
- 14/99 Traffic Calming on Major Roads: A Traffic Calming Scheme at Costessey, Norfolk.
- 1/00 Traffic Calming in Villages on Major Roads.
- 10/00 Road humps: discomfort, noise, and ground- borne vibration.
- 11/00 Village Traffic Calming - reducing accidents.
- 12/00 Urban Street Activity in 20 mph Zones Ayres Road Area, Old Trafford.
- 1/07 Emergency Services Traffic Calming Schemes: A Code of Practice

Other References

Achieving Lower Speeds: The toolkit – Transport for London

Slow Streets Sourcebook (2015) – Urban Design London

Handbook for Cycle-friendly Design – Sustrans Design Manual

Traffic Calming Techniques, (2005) – The Institution of Highways & Transportation and the County Surveyors' Society

NICE Guideline NG70 - Air Pollution: Outdoor air quality and health – National Institute for Health and Care Excellence

Associated Technical Guidance Notes

- TG17 Departures from Standard
- TG18 Road Safety Audits
- TG21 Traffic Regulation Orders

5. Further Support

- 5.1. Should you have a specific query or feedback about any of the content of this Technical Guidance Note, please send an email to Technical.Guidance@hants.gov.uk with the start of the email title as "TG11 – [Subject of email]".
- 5.2. Should you have a query about applying this to your particular project, please contact:
 - the Design Check Engineer dealing with your S278 or S38 application (if you are a Developer or Developer's Consultant)
 - the Technical Guidance Note Specialist(s) (if you are a working within Hampshire County Council)