

BUCKINGHAMSHIRE COUNTY COUNCIL TRAFFIC CALMING PORTFOLIO



Transportation

**Buckinghamshire County Council
Traffic Calming Portfolio**

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(Inc; Education, Training and Publicity (ETP),
Speed Limit Review, Quiet Lanes, Safety Cameras
20 MPH routes/zones, Community Concern
& Neighbourhood Action Groups)

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Summary

Although there continues to be a high demand for the installation of traffic calming measures, there is an increasing awareness of some of the disadvantages to traffic calming, in particular horizontal (chicanes & build outs) and vertical features (humps & bumps). There has been a great deal of publicity in recent years, particularly about humps, bumps and vertical deflections and their suitability. This portfolio aims to increase understanding of the different tools available today by incorporating traffic calming on the highway to ensure a safer environment, achieve appropriate speeds and are appropriate for the circumstances.

An incremental policy to any traffic-calming proposal should be adopted when considering how best to reach the correct type of measure. Invariably, there is usually more than one traffic-calming option available that may be effective in dealing with a specific problem. The approach explained in this portfolio would therefore minimise the need for obtrusive horizontal or vertical schemes, which should only be recommended as a last resort.

The key to successful traffic calming is its acceptance by both the local community and other road users. The full support of all residents for measures in their road is rare, and residents who support a scheme in principle may oppose a measure once they realise it may be placed outside their house. It is therefore essential to build active support and cooperation from the majority who support the scheme, before and after its introduction.

Every form of traffic calming will have associated pros and cons that need to be considered before a measure is agreed. No measure will prove to be 100% effective and a balance between type, cost, suitability, location, benefits and drawbacks has to be made to come to a solution that is fit for the purpose.

Buckinghamshire County Council Policy on Traffic Calming

- Use an *incremental* approach – consideration of softer measures such as enhanced enforcement*, Education, Training Publicity (ETP), signs & lines, gateways etc. before embarking on more severe measures such as build outs or road humps.
- Use vertical features for casualty reduction purposes only or as a last resort when other initiatives have failed.
- Ensure that there is a majority of public support for proposals from drivers as well as local residents and other users.
- Ensure that schemes do not detract from the County Council's transport policies and strategies but add value and assist in tackling congestion, improving safety, enhancing access, and improving the environment.
- Public participation is gained for promoting education campaigns currently being run by the County Council before, during and after implementation of any physical traffic calming measure.
- Provide technical support and guidance to Parish/other requests for traffic calming and ensure that agreed proposals conform to all government guidelines.
- Conduct monitoring of schemes to ensure that they are effective and learn from previous experience.
- The County Council's policy on traffic calming will be reviewed on a regular basis to take account of best practice.

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* Enforcement is the responsibility of Thames Valley Police. Buckinghamshire County Council works in partnership with Thames Valley Police through the Thames Valley Safer Roads Partnership (TVSRP). More information on the TVSRP can be found by visiting their website at saferroads.org

Introduction

Traffic calming is a term used to describe a wide variety of measures that can be introduced on the road network with the objective of reducing vehicle speeds and collisions. Traffic calming should produce a road network that encourages steady and safe flow of traffic, at a speed that is appropriate to other road users and the local environment. Measures should not force drivers to drive at a slower speed than appears reasonable, as this may result in frustration or poor driving attitudes when entering the calmed area. Alternatively, if a driver sees a long straight section of road with humps, it may give a message that conflicts with the character of the road and the driver will not understand why the road has been calmed.

Over the past 20 years a great deal of experience has been gained both nationally and within Buckinghamshire on the appropriate application of traffic calming and this portfolio seeks to describe, in a concise manner the measures available and the approximate costs involved. Whilst many people feel that traffic calming is the answer to their problems, others feel that certain types of calming measures are an unnecessary inconvenience and a nuisance.

The portfolio is a guide to assist scheme promoters such as Parish, District and Town Councils guidance in developing the right solution for the problems being experienced. The 'toolbox' within this portfolio details the measures that are allowable for use on Buckinghamshire's roads. Links to further sources of information are contained where appropriate, as it is not the intention of the Portfolio to be technical or excessively detailed.

Considerations when selecting appropriate traffic calming

- It is important to determine the purpose for which a scheme is intended before any choice of measure is made. Traffic calming measures are usually considered where there is either:
 - A *demonstrable* safety problem with a record of personal injury collisions and inappropriate speed.
 - A *perceived* safety problem where people feel threatened by the speed, volume and/or type of traffic.
 - The area concerned is *considered* unsuitable for the type/volume of traffic passing through it.
 - Vehicle domination of the street space can significantly *diminish* the quality of life for residents, shoppers and traders.
 - To act as a *deterrent* for unsuitable vehicular use i.e. heavy goods vehicles & 'through traffic.'

Any one or a combination of these factors may lead to consideration of the use of traffic calming. However, the desired outcome must be clearly understood at the outset to ensure the most appropriate scheme is selected. Each request needs to be considered on its own merits and some measures will not be appropriate in certain circumstances. Guidance for all potential schemes should include:

- Traffic data.
- Number of accesses, properties and junctions.
- Role of the road e.g. abnormal load, emergency or bus route.
- Not to use a feature in isolation.

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Consultation process

Consultation at an early stage in the process is important in determining the perceived problems and defining the objectives of the scheme.

Depending on the extent of the proposal, traffic-calming schemes are required by law to be consulted upon. The appropriate regulations are contained in the Traffic Calming Regulations 1999, The Road Humps Regulations 1999, The Road Traffic Regulation Act 1984, Local Authorities Traffic Orders (Procedure) Regulations 1996 and the Highways Act 1980, DfT Local Transport note 1/07 and Buckinghamshire County Council revised policy on lighting.

A typical consultation list would include:

- Emergency Services- Ambulance, Fire and Rescue services should all be consulted as a matter of course on all proposals.
- Local residents and the general public.
- Thames Valley Police*.
- RAC & AA.
- Freight Transport & Road Haulage Associations.
- Parish, Town & District Councils.
- National Farmers Union.
- Disabled Access Forum.
- Pedestrian Associations.
- Internally within Buckinghamshire County Council

* Note: There is a statutory requirement for the Police to be consulted on any traffic calming measure proposed.

During the consultation process, due consideration should be given to the needs of the emergency services and the routes that they use; so not to adversely effect response times or vehicle occupants. Adequate time should be allowed for them to prepare a response to a proposal. (The fire service provide details of minimum access needs and priority routes in their traffic management policy)

Public consultation is one of the most important techniques for achieving effective traffic calming. The key is acceptance by the local community, and this can only be achieved by their involvement in the preparation of the scheme.

Developer funded schemes

For developer-funded schemes, the County Council can oversee the process to ensure that the consultation is to the required standard and undertaken in a fair and accountable manner. The County Council should work with developers to ensure that future problems are designed out through sound road layouts as opposed to traffic calming. Where off-site traffic calming features are proposed, having determined that other measures are not suitable, work with the developer should ensure that any scheme is in line with County Council policy. When a requirement for traffic calming has been recommended, the scheme promoter would be expected to adhere to the requirements.

Note: In March 2007 the "Manual for Streets" was launched by the Department for Transport. This document supersedes the previous guidance documents "Design bulletin 32" and "Places, streets and movement" which are now withdrawn. The Manual for Streets should be used when designing any new development. This document can be viewed by using the following link;

<http://www.communities.gov.uk/publications/planningandbuilding/manualforstreets>

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Schemes promoted by local communities

Community funded schemes need to progress through a similar process as developer funded schemes. Consultation with the public is required to gain support and needs to be undertaken in the same manner as any other Buckinghamshire County Council project.

Ownership of a scheme will be with the scheme promoter e.g. Parish Council, and any future costs (alteration/removal etc) will need to be met by them.

Funding arrangements

The County Council may promote and fund schemes through the Local Transport Plan and such schemes may include traffic calming measures as detailed in this portfolio. Other schemes could be funded through the Local Committee Delegated Budget or the Traffic Calming fund.

Parish, District and Town Councils may wish to raise funds for traffic calming measures through increased precept or by local subscription. All schemes however they are funded need to complement the County Council's transport policies and objectives. Schemes secured, as part of a planning application will include all associated costs such as design, construction and supervision of works.

More information on the Traffic Calming fund (previously Forbearance fund) can be found by visiting buckscc.gov.uk/trafficmanagement

Whilst being monitored, concerns may be raised about its suitability, effectiveness or receive a mixed reaction from the public (experience has shown that very few schemes receive 100% backing even after going through the consultation process).

If additional work becomes necessary, i.e. maintenance, modification or removal of the measure, the promoter will have to fund them.

Other considerations

- Special consideration must be given the nature of the road and its environment when selecting appropriate traffic calming measures. Buckinghamshire is predominantly rural in nature, and some measures contained in the toolbox are better suited for rural, urban or residential districts.
- A great deal of debate has arisen from public transport operators concerning the suitability of horizontal or vertical techniques. Complaints, especially about some of the physical traffic-calming features have arisen from operators and their passengers.
- Humps and bumps can hinder access and response times for emergency vehicles and effect patient comfort.
- HGV's and commercial vehicle operators will also be affected.
- In rural areas, consideration for large agricultural vehicles should also be taken into account.

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Any traffic calming measure will have other 'knock-on' effects that residents need to be aware of when making a proposal for their choice of measure. These include:

- **Lighting**
Any physical measure that changes the layout of the road requires adequate lighting so it can be seen at all times and meet set standards. This requirement will immediately rule out things such as humps, islands etc on roads that are rural in nature. Lighting guidelines are contained in the Institute of Lighting Engineers Technical Report 25 'Lighting for Traffic Calming Schemes' and should be adopted. Local consultation should be carried out and legislations adhered to when lighting (including illuminated traffic signs and bollards) is introduced as part of a traffic-calming scheme. These are outlined in detail in the proposed road lighting policy due to come into effect early 2007.
- **Utilities**
When considering measures which requires work below existing ground level (i.e. foundations for signposts), we are obliged to contact utility companies and ask for plans showing any cables/pipelines in the area they may have. This has to be done whenever the 'ground is broken' and also forms part of national legislation. In addition, if the scheme is deemed to interfere with any equipment owned by that utility company, we are obliged to either re-design the scheme or move the equipment at the promoter's expense.
- **Safety Audits**
During design of any given scheme, safety auditing should be carried out at set stages to ensure that any works carried out on the highway do not actually do more harm than good.
- **Post-monitoring**
Once a scheme has been completed, post-monitoring of crashes or speed should be conducted to ensure the scheme does what it was intended to do. Consideration also needs to be given to the environmental (congestion, noise, light, pollution etc) impacts the scheme may have.

The Portfolio has taken into consideration latest guidance contained within DfT Local Transport note1/07, on traffic calming. The note also provides technical and detailed information on measures, and can be viewed in full at DfT.gov.uk.

Traffic Calming Toolbox

Cost scale for individual measures

Each type of measure contained within the portfolio has been given an approximate cost as shown by the scale below. Individual measures will incur different costs depending on the site specific requirements. (I. e, power supply, lighting, length of site etc.)

£ = up to £500
££ = £501-£5000
£££ = £5000- £20,000
££££ = £20,000+

Temporary

Temporary Speed Indicator Device (TSID)



A TSID can be used to display various messages and are designed to be semi-mobile. They rarely have their own mountings and will normally be attached to appropriate street furniture. They are powered by either a battery, tapping into the existing power supply for a lamp column, or a solar powered version is available. Temporary battery powered signs, designed to encourage drivers to comply with the speed limit are currently being trialled. Once the trial and evaluation have been completed (mid 2007), the County Council will take a decision as to any future development.

Cost: ££ initially for the unit. There will be associated future maintenance costs.

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Pros

- Relatively inexpensive to install and maintain.
- By moving them regularly, a wide area can be covered over a longer period of time, with relatively few signs.
- Can be used as a pilot for considering the use of a permanent Vehicle Activated Sign at a location without costly commitments.

Cons

- Limited as to their size, weight, power and visibility.
- Battery operated models need regular battery replacement/charging.
- Needs to be mounted and calibrated by a qualified person.

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Permanent measures

Signs



Traffic calming measures generally need supporting by traffic signs. The signs themselves are often used in isolation, an obvious example being regulatory speed limit signs. Standard traffic signs give a clear message to the driver of what to expect on the road ahead. The size and positioning of them are subject to strict guidelines set by the Dept for Transport. Signs should be used to provide the driver with necessary information about the road (speed limit, direction, information etc). An important consideration that often gets overlooked, is when any physical calming measure used, signs should be used in advance to advise the driver of what lies ahead.

Cost: £ per sign (dependent on size) for installation. Future maintenance costs will also need to be considered.

Pros

- Inexpensive.
- Signs provide a clear message to the driver.
- Signs provide the best line of sight for drivers.
- Highly visible.

Cons

- Too many signs may confuse the driver.
- May have the have an urbanising effect on the environment especially in rural areas.
- Inappropriate signage is currently subject to a great deal of media attention.
- 30 mph speed limit repeater signs are not permitted by law in street-lit areas.

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Road markings

Road markings can be equally intrusive on the landscape where inappropriately applied. They are, nevertheless, extremely effective as a means of communicating information to the driver. In areas of high landscape value, their effect should always be considered, where their use can significantly reduce the visual intrusion of upright repeater speed limit signing.

Speed Limit Roundels



These speed limit markings can be laid on the road surface typically alongside the start of the speed limit. Designed to provide additional impact when entering residential areas such as villages or areas where there are high numbers of vulnerable users i.e. near schools, pedestrians etc.

These markings are only permitted adjacent to post mounted terminal speed limit signs. The Dept for Transport will only allow a special dispensation for roundels to be used in isolation only for instances where an upright sign would detract from the local landscape. And requests have to be submitted directly to them for approval, such as in protected landscapes such as the Chilterns Area of Outstanding Natural Beauty

Cost: £ per roundel (dependent on size).

Pros

- Inexpensive.
- Can be used in isolation under special circumstances, but approval from Dept of Transport has to be gained. I.e. in areas deemed to be of natural beauty.
- Will reinforce message.

Cons

- Have been known to fade away as traffic passes over them.
- Will need regular maintenance.
- Issues with visibility will occur in poor weather conditions.
- Long-term maintenance costs could be higher than conventional posts.

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Central Hatching



The major consideration of this feature is that, these markings can only be laid down the centre of roads which are 7 metres wide or more.

They work on the principal of appearing to reduce the width of the running lanes. Speeding can therefore be inhibited to a degree, as overtaking will be discouraged.

If the road is 8 metres wide or more, right turn lanes may be incorporated to assist vehicles turning right. They will also provide an element of personal security for pedestrians because they act as refuges.

Cost: From £. This is dependent on road length and can increase significantly if “cats eyes” or intelligent road studs have to be moved or installed and can significantly raise cost.

Pros

- Inexpensive.
- Provide lane guidance to drivers.
- Solid hatchings are enforceable by law.
- Will provide added protection when turn lanes or central refuges are incorporated.

Cons

- Not as effective when used in isolation.
- Will have a possible ‘urbanising’ effect on the local surroundings, especially on rural roads.
- A minimum road width of 7m is required for basic lining.
- Constant over-running of lines will lead to maintenance problems.
- Use of white edge lining may increase driver speed.

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Bar Markings



These are usually laid on the road surface on approach to a gateway feature or speed limit where a speed reduction is desirable.

They are yellow 200mm wide bands, recommended as 3-4mm high (approximately the same thickness as centre line markings) and marked in a series of strips. They are distinctive from rumble strips (discussed on page 16) as they are not intended to have an audible effect, and therefore will not emit a drumming sound outside the car.

Can be effective when used in conjunction with other measures such as gateway features on the approaches to villages.

Cost: £ per set.

Pros

- Inexpensive.
- Highly visible.
- Does not generate too much noise when vehicles pass over them.

Cons

- Because a small level of noise is generated, they should not be placed too close to residences.
- Should not be placed on sharp bends or steep gradients due to motorbikes or cycles risk of losing traction.
- Will have a possible 'urbanising' effect on the local surroundings, especially on rural roads.
- Constant over-running of lines will lead to maintenance issues.

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Dragons Teeth



These white markings are intended to give a perception that the lane is reducing in width and because of this effect; drivers will reduce their speed. Most effective when used in conjunction with other measures such as gateway features on approaches to villages.

Cost: £ per gate

Pros

- Creates the illusion the road is more narrow than it really is.
- Inexpensive.
- Does not generate too much noise when vehicles pass over them
- Highly visible.

Cons

- Limited impact when used as a measure in isolation.
- Can be perceived as 'unsightly' if over used.
- Constant over-running of lines will lead to maintenance issues.

Physical road features

Gateways



Several forms of “gateway” have been installed on roads in Buckinghamshire and surrounding counties in recent years and are intended to highlight the change in character of the road from a rural highway to a more populated area.

One of the most popular types of gateway structure replicates a five-barred farm gate to which it is often possible to affix a town/village nameplate. (As shown on the previous page) Ideally its location will coincide with the start of a speed limit and can include road surface treatments and lining measures such as the dragon’s teeth. Other examples of gateway features are shown with associated measures throughout this portfolio.

Gateway designs must be collapsible in the event of a collision and for this reason; masonry or metal gates are unlikely to be considered.

Cost: £ per gateway.

Pros

- Inexpensive.
- Can reduce speeds by 2 – 5 mph.
- Increases Driver awareness of environment.
- Different styles of gateway can be considered reflecting the particular character of a local community or area.
- Defines boundary of village/settlement.

Cons

- Limited effectiveness unless used with other engineering measures.
- Often limited room on verges.
- Speed limit signs and Village nameplates cannot always be accommodated at the same location.
- Department for Transport authorisation may be required for certain designs.

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Coloured Road Surfacing



The use of coloured surfacing is now fairly widespread and is commonly used as part of gateway feature or to emphasise to the driver that they are about to enter a change in conditions i.e. approaching a residential area. The coloured surface can also be used to highlight speed roundels or other painted signs on the road. They are usually laid in 8-12m strips.

Their effectiveness is variable on its own but can help to highlight a hazard or road marking.

Treatment is applied as part of an annual countywide contract through the summer (milder) months. Due to vehicle overrunning, the surfacing is prone to fading. An alternative is buff coloured surfacing, which is not as likely to fade, but is more expensive.

Cost: From £ (per square metre).

Pros

- Relatively inexpensive.
- High visual impact.
- Can be used to denote an approaching change in conditions.
- Can be used to highlight carriageway markings.

Cons

- Should not be used in isolation, as without any accompanying signs or words, it is difficult to convey a specific message to the driver.
- Prone to fading.
- Can have an urbanising effect.

Textured Road Surfacing



Textured road surfacing is available in various patterns and colours that is normally laid up to 15mm above the road, making it resemble block paving or cobbles.

This type of feature is designed to provide an audible effect to make the driver aware that they are about to enter different driving conditions. Because of this effect, this feature can generate a lot of noise as vehicles pass over them, so it is recommended that this type of measure be sited away from residential areas.

Studies have shown that they can achieve anywhere between 2-5 mph reduction in vehicle speeds.

They have had limited success when used in isolation and have the best effect when used in conjunction with other measures such as gateway features on approaches to villages.

Cost: £ (per square metre).

Pros

- Does not have the same urbanising effect as coloured surfacing.
- Does not fade.
- Enhances gateway entries.
- Studies show good levels of speed reduction can be achieved.

Cons

- More expensive than coloured surfacing.
- Has to be situated at locations away from houses due to the noise levels generated.
- Does not have the same effect when used in isolation.

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Rumble Strips & rumblewave surfacing

A. Rumble strips



Rumble strips are short raised areas of road lining that when driven over; create vibrations that are intended to alert the driver to upcoming hazards or an imminent change in driving conditions.

Again studies show they can achieve a 2 mph reduction in vehicle speeds. This measure tends to be most effective when used in conjunction with other measures such as gateway features on approaches to villages.

It is recommended that this type of traffic-calming scheme be sited away from residential areas due to the noise generated.

Cost: £ per site.

Pros

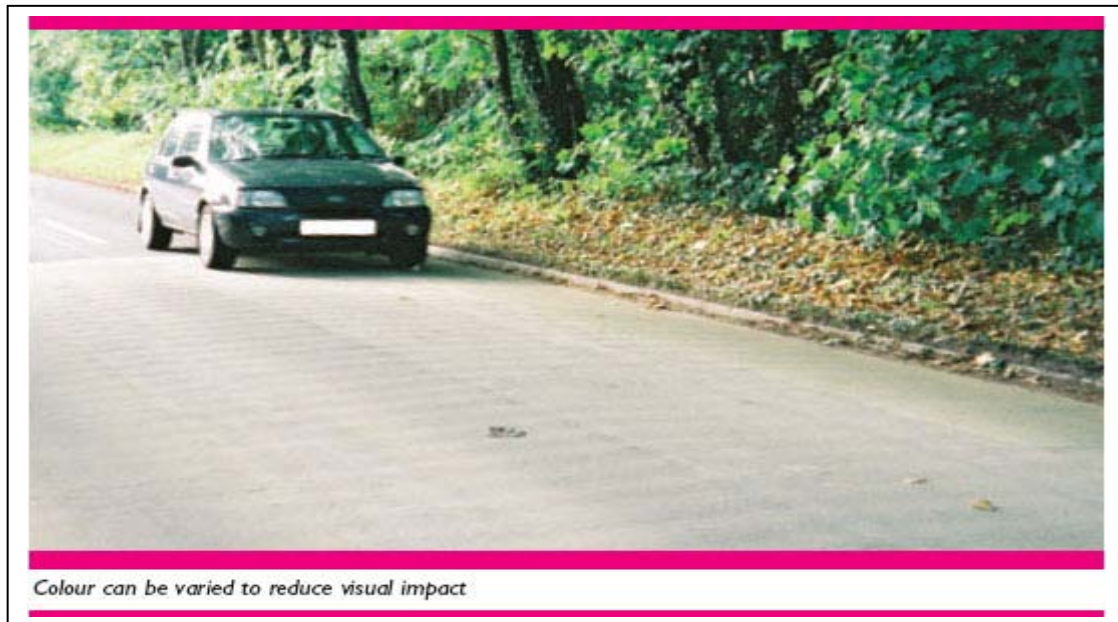
- Attract drivers' attention.
- Create audible and visible (depending on colour) effects.
- Can either be made by laying setts into the road or, simply and cheaply by laying material over the road surface.

Cons

- Creates noise therefore must be situated away from households.
- Must be clearly visible at night.
- Effect largely depends on coarseness of the strips.
- Does not have the same effect when used in isolation.
- Some evidence suggests that drivers may speed in an attempt to reduce effects.

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B. Rumblewave



Picture taken from leaflet 1 05. www.Dft.gov.uk

Rumblewave strips are a fairly new innovation in traffic calming techniques and are short raised areas of road lining laid transversely across the carriageway. Their intention is to have the same effect as rumble strips but reducing outside noise to a minimum without reducing the effect inside the vehicle. This is achieved because a vehicle's suspension is designed to absorb vertical movement and vibrations generated from the wheels. Rumblewave strips are designed to enhance horizontal vibrations that are not dampened, thus producing noise within the car.

Cost: £ (per square metre).

Pros

- Attract drivers' attention.
- Creates audible and visible effects.
- Produces less outside noise than rumble strips.

Cons

- Some evidence suggests that drivers may increase their speed in an attempt to reduce effects.
- Does not have the same effect when used in isolation.
- It is recommended that they only be used on roads with a 30 mph speed limit.
- Additional signage may be required.

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Mini Roundabouts



Mini roundabouts will have a calming effect but should only be installed in 20/30mph zones at three armed junctions, which have equal and/or substantial traffic flow on each approach. The mini roundabout itself must be greater than 1m in diameter but less than 4m and must not exceed 125mm in height.

The alignment of the road may need adjustment to slow traffic on the approaches together with appropriate street lighting and illuminated signs. Doming of the roundabout centre is recommended.

Cost: **££££**. Can vary substantially dependent on location.

Pros

- Reduces speed on all arms.
- Easy to install if no other works are required.
- Can be seen as an alternative to re-designing junction layout.

Cons

- Costs can escalate drastically depending whether lighting, and or road re-alignment is required.
- Very strict design guidelines.
- Creates extra signage.
- Has produced mixed results as a speed reduction measure.
- Any underground services may need to be diverted.

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Waiting restrictions



In urban areas where there is high parking demand, parking management may be appropriate. Waiting restrictions can be used to regulate the available parking space and designated parking spaces can be provided to specific user groups such as residents or short-term parking. The waiting restrictions can create natural chicanes of parked vehicles and ensures that parking is safe and appropriate. Good parking management can also reduce the conflict between pedestrians, vulnerable road users and motor vehicles.

Where designated parking bays are provided, the available road width has to be considered. The road must be 5.5m or wider to ensure that emergency vehicles access is maintained. It is beneficial in terms of speed reduction if the areas can be marked on alternate sides of the road as this creates the “chicane effect”.

Decriminalised Parking Enforcement is currently carried out in Aylesbury Vale, Chiltern and Wycombe Town. Special Parking Area enforcement is carried out by the District Councils and streets are patrolled on a regular basis. The Police enforce waiting restrictions within the remaining areas of the county. Unfortunately the Police do not have the necessary resources to enforce all of the area and some locations may not see any enforcement as a result. Waiting restrictions will only be considered where Decriminalised Parking Enforcement exists *if* safety issues are not involved as part of the request.

The effectiveness of the feature is dependant on the ability to enforce the restrictions and traffic flows. This feature is relatively inexpensive to actually install but will need to go through a Legal process and will result in extra costs that should be accounted for.

Pros

- Relatively inexpensive to install.
- Creates natural traffic calming feature.
- Provides safe parking areas.
- Eliminates indiscriminate or obstructive parking.

Cons

- The area must be visited on a regular basis to ensure that the restrictions are enforced.
- Enforcing the restrictions could result in additional costs.
- Locations will need to be monitored and reviewed on a regular basis.
- The Traffic Regulation Order process is time consuming.

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Vehicle Activated Signs (VAS)



A Vehicle Activated Sign (VAS) is an interactive sign designed to light up at a pre-determined speed when approached by drivers. The sign lights up a specific message warning of a hazard or as a reminder of the speed limit in force. The signs are advisory and effective only if used sparingly. VAS reinforce existing traffic signs and are only activated to alert drivers who are travelling above a pre determined speed set in the device.

Until recently this type of sign required site-specific authorisation from the Dept for Transport. However, new provisions for these signs have been included in the latest version of the Traffic Sign Regulations and General Directions (2002) manual.

The new guidelines have allowed for studies to be carried out and the Transport Research laboratory has published the results. The following points are taken from that evaluation when considering the use of these signs:

To qualify for county funding,

- There should be a recent history of injury collisions where inappropriate speed was considered to be a factor.
- There is a known history of excessive speed for the conditions. I.e. approaching junctions or bends.
- Other remedial measures are unsuitable.

Cost: from **££** per unit. (Depending on system and availability of power supplies).

Given the high demand and the finite capacity of our traffic management teams, it was decided to progress a pilot of VAS in Aylesbury Vale first to help fully understand all of the aspects of assessing and installing VAS.

This has now been completed and a VAS policy is currently being developed and due to become policy mid 2007. Further Information on their use, including applying for a unit and costing can be viewed by visiting buckscc.gov.uk/cabinet_papers

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Pros

- Trials have shown encouraging results.
- Have proved effective when traditional signs have failed.
- Alternative to full-scale engineering which may be inappropriate for the style of road or area.
- Renewably powered option is available.

Cons

- Can be very expensive if a power supply has to be installed.
- Suitable length of road is required. This allows the loops/radar to pick up on on-coming vehicle and display the message long enough to be of sufficient impact.
- Should only be used when traditional signs have failed to remedy the problem.
- May prove to be less effective over time as drivers become familiar with the signs.
- On-going maintenance costs.

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Horizontal Measures

Narrowings - Priority Workings



This style of scheme reduces the width of the carriageway, which is then controlled by a “Priority” system, i.e. vehicles going in one direction have to give way to traffic from the other.

They should be lit and can significantly reduce vehicle speeds. Buckinghamshire County Council’s policy is that narrowings must be illuminated. Similar to traffic islands, narrowings can create problems for cyclists and may be objected to by farmers who may use larger agricultural vehicles.

They are most effective if traffic flows exceed 500 vehicles per day and are not heavily biased in one direction. However, they may cause sudden braking or acceleration and can reduce available parking space.

Cost: **£££** each narrowing, plus associated road construction and lighting costs as required.

Pros

- Significantly reduces vehicle speeds.
- Works well with high traffic flows.
- Relocation of road space reduces the dominance of motor vehicles.

Cons

- Expensive.
- Must be illuminated.
- Minimum carriage width of 3m required.
- Potential hindrances to emergency vehicles and public transport.
- Will cause noise due to sudden accelerating and braking of some drivers.

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Central Traffic Islands



Traffic islands restrict two-way traffic flow into narrower lanes or provide a refuge for pedestrians/cyclists. In general, a minimum of 3 metres lane width must be maintained on either side of an island, where the island is a pedestrian refuge it must be a minimum of 2 metres wide.

Central traffic islands can reduce vehicle speeds by 2-5mph depending on the lane widths. Buckinghamshire County Council's policy is that they must be illuminated. Traffic Islands can create problems for cyclists and may be objected to by farmers using large agricultural vehicles along the road or the emergency services where access may be hindered. This may mean that road widening is required. Islands are often difficult to site in residential areas where they conflict with accesses and on street parking.

Cost: **£££** (per island) plus associated road construction and lighting costs as required.

Pros

- Can be effective in reducing vehicle speeds and injury crashes.
- Can be tailored to fit different road widths and conditions.
- Encourages lane discipline.
- Can be designed as a pedestrian refuge.

Cons

- Can be expensive depending on number of islands installed.
- Must be illuminated.
- Can be difficult to site in residential areas as minimum road width is required.
- Can cause problems for cyclists.
- Collisions with Island can occur.
- May receive objections from larger vehicle users & emergency services.

Vertical measures

Road Humps



Speed humps come in various forms and are constructed in tarmac for cost-effectiveness in a round form or in blocks where a flatter profile is required. They can be effective in reducing speeds to about 20mph. Their height and frequency are controlled by regulation. It is recommended that a “slowing” feature, e.g. roundabout, a sharp bend or a road narrowing, should exist or be introduced on the approach to the section where the humps are placed.

Each request for all types of vertical measure need to be considered on an individual basis, bearing in mind the collision history, the road layout and the gradient of the road, as it is inadvisable to install vertical measure on steep gradients. Vertical measures will only be considered where other less obtrusive and cost-effective measures have not been successful in calming the road.

Cost: **££** (per hump) plus associated road construction and lighting costs as required.

Pros

- Can be very effective in reducing vehicle speeds and injury accidents.
- Can provide pedestrian crossing places if flat topped.
- Continue across the full width of the road and can be installed without effecting on-street parking.

Cons

- Can only be used in areas with a speed limit of 30mph or less.
- Must be illuminated to Highway Lighting Standard.
- Cause discomfort to bus passengers and patients in ambulances and effect response times for emergency services.
- Braking and acceleration noise plus vibration can make them unacceptable to residents.
- Not Cycle Friendly.
- Drainage when raining for flat top style humps need to be considered.

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Speed Cushions



Similar to road humps and the same constraints apply to them such as height, frequency, and lighting. Their effectiveness will depend on the width, height and profile of the cushion. The narrower the cushion the more acceptable to buses and emergency service vehicles which are then able to straddle them. Wider cushions are more effective in reducing speeds.

Cost: **££** per pair of cushions plus associated road construction and lighting costs as required.

Pros

- Can be very effective in reducing vehicle speeds & injury accidents.
- Can be tailored to fit different road widths and conditions.
- Cycle friendly.
- Bus and HGV friendly.
- Better access for Emergency Service vehicles.

Cons

- Can only be used in areas with a speed limit of 30mph or less.
- Must be illuminated to highway lighting standard.
- May cause discomfort to bus passengers and patients in ambulances if the vehicle unable to straddle cushions.
- Braking and acceleration noise plus vibration can make them unacceptable to residents.
- May cause drivers to weave or mount the kerb to avoid them.
- May not slow HGV's or motorcyclists.
- May require waiting restrictions to prevent parking within 20 metres of the cushions. This will allow larger vehicles that straddle humps enough space to negotiate these measures.

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Other measures

Promotion of Education, Training and Publicity (ETP)

Advertising and publicity campaigns can reach a large audience within a small timeframe and allows for a simple measure to be delivered in a coordinated manner.

The objectives of road safety based education training and publicity campaigns are specifically aimed at changing habits and driving attitudes. Whilst they have traditionally been used on their own, they can also be used to support physical traffic calming measures. When requests for traffic calming measures are received, ETP should be used as part an incremental approach. Local residents will have to participate in the consultation process and contribute to the success of any scheme that is agreed to.

Examples of such are the 'Make the Commitment' campaign. Drivers are encouraged to try to stay within the speed limit. This attempts to persuade the driver to be more aware of their surroundings and monitor their own speed more closely. The 'Route alert' publicity signs placed on stretches of road in the county identify to the drivers of areas which have seen higher numbers of crashes and to act accordingly.

Speed Limit Review

The County Council are currently undertaking a review of all speed limits (except motorways, trunk roads and private roads) within the county. As there are over 3000km of road, the county has been split into 14 areas that are being looked at area-by-area on a casualty reduction led basis. Proposals for revised speed limits for each area are steered by working groups (who are made up of County Councillors, Police, District and County officers) and public consultations. A knock-on effect is that the roads that were and have remained national speed limit have had to be signed* as such, as this is a legal requirement.

***N.B. A common misconception about the national speed limit sign is that it does not mean the speed limit for the road is automatically 60mph on rural roads.** The Highway Code underlines that this does not mean that 60mph is necessarily achievable or appropriate, but that drivers must make their own appropriate speed choice, below 60mph, for the individual length of road.

More information on current road safety campaigns including the speed limit review, can be found by visiting the Casualty Reduction web pages at buckscc.gov.uk/roadsafety

Quiet Lanes

Quiet Lanes are minor rural roads that are appropriate for shared use by walkers, cyclists, horse riders and vehicles. In August 2006 the Department for Transport published Statutory Guidance for Quiet Lanes and Home Zones. The County Council has a policy of not formally designating roads as Quiet Lanes. The countywide speed limit review will be progressed on that basis.

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Removing markings and signs (naked streets)

Several surveys have indicated that the clearer the road marking layout, the more positive drivers are in their actions and general behaviour. This approach has been applied successfully in a number of locations but considerable judgement is required to minimise any risks resulting from removing signage and road markings. Consideration has to be given to traffic flows, existing vehicle speeds, location and numbers of vehicles using the road. This philosophy is still undergoing trials and it is not yet clear how effective adopting this style of traffic calming is.

Safety Cameras.

Safety cameras are relatively new development in terms of traffic calming. The purpose of the cameras is to provide an effective means of focussing police enforcement resources on casualty reduction. Because of their success in prosecuting errant motorists, they have received much criticism, attention from the media and a great deal of public debate. Under new funding arrangements that came into force on 1st April 2007 for cameras in England and Wales, the Thames Valley Safer Roads Partnership in partnership with the local authorities and the police have gained greater freedom and flexibility to pursue an agreed mix of road safety measures in order to reduce road casualties in their area.

The fundamental objective of the safety camera program is to reduce speeding, collisions and casualties through camera locations being publicised, signed and visible to road users, it is the intention that the road safety partnership continue to follow this approach in respect of safety camera enforcement at specific sites as part of their local road safety strategies. Guidance for local authorities by DfT state that new camera should only be considered if;

There are a specific number of injury collisions that have already occurred along a set length of road within a three-year time period.

And,

Only as a last resort where all other alternatives have failed to reduce injury crash rates.

More information on safety cameras can be found by visiting the Thames Valley Safer Roads Partnership website at www.saferroads.org.

20 MPH routes/zones.

It is current policy to only consider 20 mph zones as part of a Local Safety Scheme, Safer Routes to School scheme or town centre pedestrianisation scheme. This is due to the need for extensive traffic calming to be incorporated onto the road network to keep average speeds below 20 mph.

The Department for Transport would not normally recommend the introduction of either a 20 mph zone or limit on a through road in a village. This is because the road would need to be extensively traffic calmed if speeds are not already on average below 20 mph. The measures introduced onto the highway would have an urbanising effect and would be inappropriate for a rural location.

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The DfT advice emphasises the need for caution to be exercised when considering 20 mph limits. Our experience suggests that signed-only limits have little or no effect on reducing speeds.

Further information, advice and guidance is contained within the DfT's Traffic Advisory Leaflet '20 mph speed limits and zones' (09/99) and can be viewed by logging on to their website at DfT.gov.uk, or via a link through our website at buckscc.gov.uk/roadsafety.

Community speed watch.

Community speed watch is a traffic monitoring scheme that is co-ordinated by the police and Buckinghamshire County Council but managed and run by volunteers in a community.

Volunteers are trained to use a detection device to monitor the speeds of vehicles travelling through their local area and record the registration number of speeding vehicles. Warning letters are then sent out by the police to the registered keepers stating that their vehicle has been reported as speeding. The first letter is a warning letter; the second is a stronger letter. Further detected speeding at a location will result in enforcement by the Thames Valley Police.

Community speed watch can only operate in areas subject to a speed limit no greater than 40mph.

Contact links and an information leaflet for this scheme can be found on the Road Safety web pages within Buckinghamshire County Council's web site.

Community Concern

The Thames Valley Safer Roads Partnership is currently running a Community Concern scheme where requests from the public about speeding/driver behaviour are considered for enhanced enforcement, either by Police presence/speed checks or mobile camera enforcement. All requests will be considered by them and you can do this online by visiting their website at www.saferroads.org

Neighbourhood Action Groups

Thames Valley Police are also working with the Local Community on issues such as this by forming Local Neighbourhood Action Groups. Once an action group for your local area has been set up, your Parish Council will have details of meetings and the Police Liaison Officer for the group. If you wish, you can register your concerns with the action group who can raise the subject during their next meeting.

More information can be found by visiting the Thames Valley Police web site at www.thamesvalley.police.uk

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Amendments for 2008

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