Traffic Calming Review (2014)

In September 2014 a meeting took place to discuss various issues linked to traffic calming design, and in particular concerns raised about the pain driving over vertical measures (speed humps/speed cushions/speed tables) can cause for people with back injuries and complaints.

The meeting was attended by Cllr Levene (Cabinet Member for Transport, Planning & Economic Development), Cllr Semlyen, Neil Ferris (Assistant Director Transport, Highways and Waste), Mike Durkin (Transport Projects Manager), and a resident who suffers from back pain.

After a wide ranging discussion, various action points were agreed. These are presented below, along with officer's subsequent findings and conclusions.

1) Review how CYC's Speed Management Policy takes equality issues into account.

The council's Speed Management policy was last reviewed in 2006 in a report written by the by Transport Planning Unit to the Executive Member (Cllr Galloway). This reviewed the various methods available to address speeding issues, and relevant extracts relating to the use vertical traffic calming are presented below:

Substantial research shows that vertical traffic calming is the most effective method of reducing speeds and addressing casualties.

A study by Webster and Mackie (1996) showed that after implementation of traffic calming the average annual casualty rate decreased by 60% and average vehicle speeds fell by 9 mph.

The Transport Research Laboratory reviewed forty-five traffic calming schemes and the overall percentage of residents who approved of the schemes was 65%.

It is generally accepted that the safety benefits of vertical traffic calming far outweigh any negative impact.

Although this 2006 report had an Equalities section, it did not identify any equality issues linked to speed management. At that time there was no legal requirement for an Equalities Impact Assessment (EIA) to be carried out, and therefore one was not done for this policy.

In adopting and implementing this speed management policy, the council has always recognised that the use of vertical traffic calming will be unpopular with some people for a range of reasons, such as concern over vehicle/property damage and vibration effects. The council also acknowledges that some people will find going over traffic calming measures more uncomfortable than others, depending on the vehicle they are in and due to certain medical conditions. However, the council has always taken the view that road users should be able to get a reasonable level of comfort if they drive slowly enough over the measures, and the road safety advantages of traffic calming outweigh the dis-benefits.

It is therefore the council's view that the council's speed management policy is not discriminatory against any of the nine equality groups. In addition, when developing traffic calming schemes the council consults key groups representing those with disabilities and the elderly, who are the groups most like to be interested in traffic calming, so any specific concerns can be raised and considered.

This view on traffic calming is taken by other highway authorities nationally, and the Department for Transport and recently been asked to give its thoughts on the issue of equalities in relation to traffic calming. Their full response is provided as **Annex A,** and this fully supports the council's current position.

Officers have searched the internet and found many examples of reports produced by other Highway Authorities on traffic calming proposals where equality issues are discussed. They have mainly taken they view that there are no equality implications with the proposals, or some note that there may be implications for those with certain medical conditions, such as back complaints and injuries, but they have done all they reasonably can to minimise such problems. No examples were found where equality issues were considered to outweigh the potential benefits

of the proposals. Two typical extracts from these reports are given below:

Example One

Disability *– potential problem for those with back injuries.*

The speed cushions are designed in accordance with the guidelines set by the Department for Transport. The cushions are to be constructed at a maximum height of 75mm +/-5mm tolerance which is the recommended height to minimise discomfort to persons with pre-existing back conditions whilst maintaining effectiveness of the cushion.

Example Two

Disability

Disability is not an issue in terms of who benefits from this proposal. The proposal is intended to reduce vehicle speeds in the area, and as such it will be of benefit to all user groups. It is anticipated that there will be a positive impact on disabled people however, due to lower speeds achieved within their community.

In 2005 the Scottish Parliament considered a petition raised by a disability rights campaigner which urged the Scottish Executive to review its policy in relation to traffic calming measures, such as road humps and road cushions, in order to address the impact on disabled users and the elderly. In response the Public Petitions Committee agreed to get views on this issue by consulting the Scottish Road Safety Campaign, the AA, Age Concern Scotland, the Mobility and Access Committee for Scotland, the Disability Rights Commission, Capability Scotland, the Scottish Executive, the Scottish Ambulance Service, the Chief and Assistant Chief Fire Officers Association Scotland, and ACPOS.

In January 2006 the Public Petitions Committee agreed to invite the views of the petitioner on the responses received. Then on 6 September 2006 the Committee agreed, on the basis of the all the responses received, to close its consideration of this petition. The overall view being that traffic calming does play an important part in improving safety and should continue to be available to roads authorities, but it has drawbacks and therefore should be used a targeted way.

In considering the issue of traffic calming being potentially discriminatory to one characteristic (disability) the council also needs to be mindful that failure to effectively tackle speed issues in key areas could be argued as discriminatory against another characteristic (age). It is well known that the young and old and particularly vulnerable as road users, and suffer a disproportionate number of injuries as a result of road traffic accidents. For example, national statistics show that in 2003 there were about 36,000 pedestrian casualties, of which about a third happened to children (0 to 15 years). However, in 2013 the total number of casualties had fallen to around 24,000, and only a quarter of those were children. This fall is considered largely to be due to the positive effect of national road safety policy which has led to the widespread use of speed management measures, including vertical traffic calming, in many key areas where pedestrian activity tends to be high. An important fact is that a pedestrian struck at 40 mph has a 85% chance of dying, at 30mph this is considerably lower at 45%, but at 20mph the chances of a fatality reduces to just 5%.

2) Investigate national best practice on traffic calming.

On the understanding that physical measures will be required to slow traffic to a safe speed in certain situations, there are two main design approaches consider – **vertical or horizontal** measures. It has been suggested that that disabled people would prefer to see horizontal measures used in order to reduce the problems they have going over vertical measures.

Horizontal measures have always been part of our traffic calming "toolbox", and there are some situations where they have been the preferred choice and have been used effectively. They are particularly well suited to one-way roads, especially if it is possible to introduce width restrictions and sharp directional changes that are able to force most drivers to slow down. Examples include Lowther Street and Penley's Grove Street. Here chicanes have been used in combination with humps to create a variable layout that encourages a slow speed for drivers of most vehicles. It is worth noting that two wheeled vehicles are very little affected by such measures, but they tend to be slowed down by the slower movement of traffic around them.

On two-way roads, chicanes only work well if there is a fairly balanced opposing flow of traffic during most of the day that causes drivers to slow down. In this situation chicanes are often accompanied by a priority

working arrangement. There are often complaints that people race to get through such chicanes before the opposing driver, and there can be complaints about the noise associated with sharp braking and acceleration at the chicane.

Horizontal measures are therefore considered on a case by case basis, but are not always deemed suitable. They can also be a problem in terms of their local effect on street parking patters, and driveway access. Costs can also vary significantly depending on the layout design, but typically a chicane comprising two build-outs would be around £15K.

When **vertical** measures are considered necessary, we design them in-line with standards that have been developed over many years. These are based on local knowledge and experience, as well as national guidance. We always seek to achieve the best balance possible between effectiveness at slowing traffic and minimising problems for road users and nearby residents.

As an example, for standard round-top road humps the national regulations on their design and application is fairly rigid, and the only significant flexibility we have locally is on their height. The regulations state this can be between 50mm and 100mm, and the national guidance is that 75mm achieves the best balance. Hence we have adopted this height as our local standard for York. A standard road hump typically costs around 3K.

On speed cushions, there is much more flexibility on their shape. Again we have gone for a profile at the lower end of the severity spectrum by only having a width of 1.6m and a height of 65mm. Any further reduction of these key dimensions would tip the balance and make them largely ineffective for all but the drivers of the smallest cars. A pair of speed cushions typically costs around 3K.

On speed tables, the key parameter is the steepness of the on/off ramps. Through experience we have adopted a standard ramp slope of 1 in 15 (i.e. 1.35 m long for a 90mm high table). National guidance allows these to be as steep as 1 in 10, but the recommended slope on bus routes is 1 in 15. The cost of a speed table can vary significantly depending on size and materials, but a figure of £15K is given as a guide for a typical installation.

Subsequent to the meeting on 29 September, a magazine article was brought to officers' attention articles about **"intelligent" road humps** that are responsive to vehicle speed and can change profile accordingly.

Officers are aware that such products have been under development for many years. However, as a Highway Authority, any measure that we install on public roads needs to be approved by the Department for Transport after a lengthy testing and approvals process. None currently have this level of approval.

Officers attended a track test day for an "intelligent" road hump at the Transport Research Laboratory (TRL) several years ago. This road hump was being developed by an arm of Dunlop and was known as the "Transcalm" hump.

The trial was attended by lots of highway engineers and road safety experts from all over the country. The tests did not go very well, and most people left with doubts about this ever being a concept that might ever be used on public roads. The tests showed that the humps were fairly uncomfortable to drive over even slowly, they could only be used on one way roads, they were unlikely to last very long under heavy traffic flows, and they would be expensive to install and maintain.

Following this trial everything went very quiet, and officers had assumed that Dunlop had given up on this product. Further research has confirmed that the "Transcalm" hump is now being marketed by a company called Signature Ltd. (see leaflet attached). Officers have spoken to the company who confirm that the products is not approved by the Department for Transport for use on public roads, and is currently only in use in a small number of private road sites (e.g. Manchester University grounds). They also confirm that the hump is unidirectional, so you would need two separate ones on a 2- way road. The cost is about £2500 per unit (excluding installation), and again you would need two on most roads, probably with a central island to channel the traffic flow.

Officers have also found a small amount of information about the development of similar "intelligent" road humps in other countries. These include some interesting designs that were developed by inventors in Japan and Mexico, both around 2008, but neither idea appears to have successfully evolved into widespread use in these countries, primarily due to cost and operating problems. An example closer to home, and more recent, is in Sweden where a new mechanically controlled speed

deterrent measure has been developed. The technology, called Actibump, monitors traffic approaching vehicle speed via detectors and if a trigger speed is exceeded a metal “trough” is then activated in the road that the driver must then bounce over. The trough is six centimetres deep, which the developers say is deep enough for drivers to notice but does not cause any physical damage to either the car or its occupants.

It is understood that the Actibump system is now operating in a small number of specific locations in Sweden, such as at the Oresund Bridge where it is being used to control speeds at the toll booths.
An information sheet about this system is provided as **Annex B.**
Although an interesting development, it is very clear that this system does not currently present an option that we could consider for controlling speed on our public roads in York. As well as the practical difficulties and safety considerations, the cost would be prohibitive for widespread use (it is estimated that a system for just one location on a two-way road would cost around £40,000.)

In summary, “intelligent” road humps are not considered an option for use on York’s roads at the present time, but Officers will continue to monitor future development in this field.

3) Investigate the views/policies/recommendations on traffic calming of groups representing the disabled/aged people.

When officers bring forward any traffic calming proposals their standard consultation list includes the following local organisations with a special interest in disability issues:-

York Access Group
York Blind and Partially Sighted Society
The Resource Centre for Deafened People

We also consult the following organisation which represents older people:-

York Older People’s Assembly

These organisations very rarely raise general or specific concerns about scheme proposals, and are not know to have any fundamental objection to Council’s policy on implementing traffic calming in the city.

As part of this current review, officers have searched the internet to read the web-sites of various national organisations that represent disabled people, and those specifically with an interest in back/neck problems. These included:-

UK Disabled People's Council
Disability Rights UK
Equality and Human Rights Commission
Royal Association for Disability and Rehabilitation
Scope

BackCare
Spinal Injuries Association
Multiple Sclerosis Society

Although the web-sites discuss many issues, and some organisations have published position statements on many of these, nothing was found on traffic calming. It is therefore assumed that this is not considered a major issue for them, and most will have chance to put forward comments as part of previous consultations carried out by the Department for Transport when developing traffic calming regulations and guidance over many years. Furthermore, the issue about back pain has been known about throughout the development and implementation of traffic calming, it is unlikely that anything will come to light now that might lead to a change in policy at a national or local level.

4) Talk to the Police about introducing fixed speed cameras in York.

The Police have the statutory duty for enforcement, and currently speed enforcement needs a warranted officer in the process by law. Therefore the council is not able to implement a speed camera speed enforcement system (either fixed, mobile or average speed) without the Police's support and involvement.

The council has previously looked at this in depth with North Yorkshire Police, and a decision was quickly reached that **fixed cameras** would not be appropriate to manage speeds in York. The main reason is that they are very expensive to install and operate, and only affect speeds very locally. Therefore the national guidance is that fixed cameras

should only be deployed at specific sites where there is a recognised accident problem linked to excessive speed.
North Yorkshire Police have subsequently adopted policy not to use fixed cameras at all, but they do have a fleet of three vans which carry **mobile speed cameras**. These are deployed around the county at priority sites that have been identified through intelligence and collision data. This is regularly under review, but at the moment there are only nine locations in the York area that are on the list of priority sites, compared to around 120 locations in other areas. Furthermore, all the sites in York are outside the main urban area.

Neil Ferris recently met with the Deputy Chief Constable and the use of mobile speed cameras in York was discussed. In the future the Police are looking to increase the number of mobile cameras at their disposal, and there was recognition that there may be more sites in York that could be considered for this form of control. More detailed liaison with the Police will be needed on this aspect of our future speed management activities. However, it is clear that fixed or mobile cameras will never offer a realistic alternative to the use of traffic calming measure for managing speed in most urban streets.

It has been suggested by some residents that **average speed cameras** ought to be used to manage speeds in the city. Such systems can work well in certain situations, such as on motorways, but they are very expensive to install and operate and would be fraught with issues if applied in an urban situation. For example, the Police would need to be able to prove that the correct signage was in place at the time the ticket was issued, and therefore all the roads under the scheme the road would require checking the signage daily morning and evening, to ensure compliance, before any convictions could be made that day. Another very practical point is that it would be hard to make average speed cameras effective over an area because a driver could speed down a residential road to the shop at 50mph, in a 20 limit, spend 10 minutes in the shop and then speed at 50mph as he continued on his journey. Because of this stop with in the area, the average speed camera at the boundary would not pick up that he was ever speeding. Hence this is not thought to offer a realistic solution for speed management in York, and would not be supported by the Police.

5) Produce a briefing paper on the existing speed able at the Field Lane traffic lights.

See **Annex C.**

6) Improved Consultation

For all highway schemes, including those where traffic calming is proposed, we carry out consultation. How this is done varies from scheme to scheme, but the aim is always to get good quality and relevant feedback. As part of this, we always consult local residents and businesses via a letter drop, and also send out e-mails to our list of key consultees, such as road user groups and organisation representing special interests. This includes local groups representing disabled people. This list is regularly reviewed to make sure that is current and we are approaching the right people/organisations to get representative views.

To try to get to a wider audience on bigger schemes, we put information on the Council's web-site, and put notice boards on-site to let road users know that changes are planned and invite then to view the information and comment on the website. We also do press releases about the proposals, and as part of this will include the ways to access more information.

It will never be possible to consult everyone individually that might have some interest in a scheme we are promoting, which in theory is every road user. Hence we consider that the current practices are reasonable and effective. However, to strengthening the process, particularly around equality issues, we plan to review our consultation list to ensure that any relevant organisation and not missing. We will also try to identify better ways of letting the public know that these organisations are our reference points for consultation views.

We also plan to engage with these groups to see if we can work together to broaden awareness that a scheme consultation is taking place, and encourage input into the response. The aim should be that, as far as is reasonably possible, all those with an interest of the proposals are made aware and given chance to put forward their views for officers and the Cabinet Member to consider, either via a direct response to the Council or via these organisations

Conclusions and Proposed Actions

Driving over vertical traffic calming measures undoubtedly causes problems for some people with certain disabilities and medical conditions, and therefore there is an understanding of why discrimination against a particular group of people could be argued. However, such arguments have currently been based on the anecdotal evidence of individuals, and not as yet backed up by statistical evidence or with any legal precedence.

The statistical evidence on road accident casualties suggests that another group with protected characteristics (age) is disproportionately affected by traffic speed, and therefore on balance traffic calming is needed.

Officers have reviewed the options available to the council where vertical traffic calming measures are deemed necessary, and passive road humps are by far the cheapest and most versatile option available. It is therefore concluded that the council is currently adopting best practice when it comes to using traffic calming measures, and hence no changes to the current policy or design standards are considered necessary.

Officers have reviewed the council's consultation and participation methods around introducing highways schemes, and will continue to strive for improvements and greater public participation.

Looking ahead, new techniques and technologies for controlling vehicle speed and improving safety are being actively pursued by research organisations and car manufacturers, but it is likely to be many years before new systems are approved and available for general use on public roads. Much is also being done at a national and local level to change driver behaviour through education and advertising campaigns, and in the long term this may lead to better compliance with signed speed limits. Optimistically, both of these may reduce the future need for physical calming measures, but any change will not be quick. Therefore it considered reasonable to aim to carry out a further review of the situation in five years time.

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