



EFFECT OF TRAFFIC CALMING MEASURES

LOCAL COMMITTEE FOR WOKING 14 JULY 2004

KEY ISSUE:

To consider the arguments relating to the use of “vertical deflection” to reduce speed, which includes speed humps, speed cushions and speed tables.

SUMMARY:

Local disabled people met representatives of Surrey County Council to describe the problems which are caused by “vertical deflection”, which includes speed humps, speed cushions and speed tables. This reports on the meeting, what was said, appends “The Case Against Speed humps” which was presented at the meeting and provides an officer response to that presentation.

OFFICER RECOMMENDATIONS:

The Committee is asked to:

- a) receive the report
- b) agree that transportation officers will produce a report to the October 2004 meeting which sets out what can be done to ensure that traffic calming measures do not increase inconvenience, pain and social exclusion of disabled people, and to ensure that vertical deflection is not in breach of the Disability Discrimination Act.

INTRODUCTION and BACKGROUND

1. Two disabled people invited Geoff Marlow as lead member on transportation to a presentation about the problems caused by “vertical deflection”, which includes speed humps, speed cushions and speed tables.
2. The meeting was then expanded to include John Masson of the Local Transportation Service in Woking, Clive Batchelor Senior Engineer from the Traffic and Road Safety Team at County Hall, Adrian Winn Locality Manager and Nigel Cavey Locality Support Officer from Surrey Ambulance Service, and the Surrey County Council Local Director for Woking Christine Holloway. The disabled people, Pauline Chapman and Cliff Bush of North West Surrey Association of Disabled People (NWSADP), made the presentation which forms Annex 1 on 11 May 2004.

Pain and discomfort leading to social exclusion

3. Mrs. Chapman gave figures which she said showed that a significant proportion of Woking residents suffer chronic pain, and more suffer pain at times. In addition, older people tend to have musculo-skeletal problems.
4. The meeting was told by Mrs. Chapman that vertical deflection bumps vehicles causing pain or in some cases actual harm to some of these people.
5. Moreover humps, cushions and tables can be impassable by some vehicles with low access for wheelchairs, or with a hoist stored under the vehicle. If they try to go over them without realising, they cause damage to the vehicles.
6. if vehicles have adapted controls, for example for steering, jolts can trigger unintended and dangerous actions.
7. As a result:
 - Some locations are inaccessible to some disabled people
 - Some locations can only be reached by circuitous routes
 - Disabled people cut down on their travel, which increases social exclusion and means that they cannot participate in the same way as the general community
8. NWSADP added that road humps cause discomfort to bus passengers.
9. The representatives of the ambulance service agreed that vertical deflection causes bumps which cause pain to their non emergency passengers such as people going to out patient appointments.
10. They prefer cushions, which they can straddle; though all agreed that this is not possible if cars park near them (within about 30 meters).

11. London Ambulance Service have also argued that road humps etc. are bad in emergencies because they slow ambulances and bumps impede some medical interventions. The Surrey Ambulance Service representatives said that vertical deflection does not help them meet their standards for getting people to hospital in emergencies, but that they are meeting those standards. Careful driving over the road humps reduces discomfort to the patient, and they would not like to oppose vertical deflection if it is the best way to achieve slower speeds which reduce death and injury.

Other approaches to reducing speed

12. NWSADP asked that vertical deflection be installed only when there is no alternative solution such as road markings, kerb lines, signage, etc.
13. A debate followed about the efficiency of other approaches to reducing speed.
14. The Transportation Service said that they install vertical deflection schemes to reduce accidents and then only with the support of local residents. Occasionally such schemes have been introduced to increase safety on a main school route but in all cases the benefits must clearly outweigh the disadvantages. Comprehensive consultation must show the majority of directly affected residents responding in favour of the scheme. The principle is that any discomfort can be lessened by traveling at low speeds.
15. They now build tables kerb-to-kerb because these help people in wheelchairs to cross the road, as well as people with pushchairs etc. They usually use flat-top road humps, with 1:20 gradients on bus routes, 1:15 on quiet roads.
16. They assured NWSADP that that they do not build road humps higher than 75mm, except perhaps at the edge next to the pavement because of the camber. NWSADP argued that some vertical deflections are higher than this. It was suggested that these may be older, or on private property and not installed by the Transportation Service.
17. Buses tend to go over humps too fast; there is a need to educate drivers.
18. The Transportation Service prefers road humps to cushions because of the problems caused by cars parking near cushions.
19. Although chicanes can be effective, they need a lot of space and tend to squeeze cyclists. Chicanes in narrower roads mean that vehicles have to alternate in each direction; this causes aggressive driving behaviour, to such an extent that they have had to remove them in Leatherhead. The Fire Service prefers cushions or humps to chicanes, because they have less effect on their speed.

Noise, pollution and vibration

20. The NWSADP representatives also argued that vertical deflection increases noise and pollution. Clive Batchelor argued that this is not likely as vertical deflection usually decreases the volume of traffic on the traffic calmed route and displaced traffic can be dispersed to various routes more appropriate to through traffic. It is difficult to measure the overall effect on pollution. The biggest influence on noise (and pollution) are the characteristics of the vehicles and their speed, but the instantaneous noise level from heavy vehicles may be increased by vertical deflection measures.
21. It is difficult to quantify the effect of a vertical traffic-calming scheme on vibration. Each location is different. If heavy traffic diverts from the calmed route, it is unlikely that perceived vibration would increase on that route.

Conclusion of the meeting

22. After discussion, Geoff Marlow as lead Member on transportation, asked the Local Transportation Service to review its plans to install road humps in Connaught Road, and to explore alternatives.
23. NWSADP said that they were keen to work together to find ways to address the problems.
24. It was agreed that the Transportation Service should repeat its commitment to making sure that there is consultation with representatives of local disabled people about proposals for vertical deflection. It was noted that the Surrey Compact says that 12 weeks should be allowed consultation.
25. It was agreed that we should ask for Transportation Development Control to advise private developers about vertical deflection and to prevent unnecessary road humps and humps of the wrong dimensions.
26. Geoff Marlow also asked Clive Batchelor and the Local Transportation Service to consider the problems raised and to report to the Local Committee about what can be done to ensure that traffic calming measures do not increase inconvenience, pain and social exclusion of disabled people, and to ensure that vertical deflection is not in breach of the Disability Discrimination Act.
27. The meeting noted that the impact on disabled people is stated in all transportation reports to the Local Committee under the heading "Equalities implications".
28. John Masson and Clive Batchelor were pleased to accept Mrs. Chapman's offer of a drive in her vehicle to identify and experience problems.

Diversity or self-reliance implications

29. There are no specific implications for the ethnic minority communities of Woking, or for self-reliance generally. This whole report addresses the

needs of people with physical disabilities, and older people who have musculo-skeletal problems.

FINANCIAL IMPLICATIONS

30. None.

COMMUNITY SAFETY IMPLICATIONS

31. Traffic calming is an effective means of reducing vehicle speed and therefore road casualties. Each site is unique, and each of the different methods of traffic claming has advantages and disadvantages.

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ANNEX 1

Presentation by Mrs Pauline Chapman, NW Surrey Association of Disabled People

The case against speed humps

Thank you for affording us the opportunity to come and speak to you about this matter today.

This meeting is being held in response to concerns raised about the effects of the proliferation of speed humps in the borough.

We accept the general principle that traffic calming is desirable in the interests of road safety. However we have to question whether this particular solution is the most appropriate one given the pain and inconvenience that they cause to other road users who are already suffering from pain and/or disability. We are also concerned that they may slow down (adversely affect response times) emergency vehicles. They damage vehicles, particularly those that have been adapted for wheelchair users that have either a lowered floor and/or a lift that is stowed under the floor of the vehicle.

In my own case I cannot go wherever speed humps, tables or cushions are installed. I have an extensively adapted wheelchair accessible vehicle that has a lowered floor. This means that it grounds out on some speed humps. There are some roads in the borough that are now impossible for me to use. For instance because the humps are too high I cannot

- Travel along Kingsway
- Access St John the Baptist School
- Access the car park of Waitrose in West Byfleet

The law states that 'no traffic calming shall be constructed or maintained in a carriageway so as to prevent the passage of any vehicle unless the passage of that vehicle is otherwise lawfully prohibited'

In addition traversing any speed hump, cushion table causes an increase in my already severe levels of pain that is controlled by regular opiate medication. I view travelling these roads with dismay.

I cannot travel along Whych Hill, Walton Road, Woodham Road, and Victoria Road with White Rose Lane and Connaught Road about to

become out of bounds to me. This severely curtails my ability to attend the church in Victoria Road and will prevent me from visiting friends off White Rose Lane and Connaught Road.

If I travel by ambulance or in a community transport vehicle I have to wear a cervical collar to minimise the effects of the jolting.

Turning our attentions to the difficulties that members of NWSADP experience. Road humps are frequently cited as the reason for a painful journey. They damage low-floored vehicles and those vehicles where the side or tail lift is stowed under the floor of the vehicle. In addition they MAY cause difficulty for drivers who use sophisticated hand controls and switching devices.

The Transport Research Laboratory Report 417 makes it clear that speed humps only work when they are uncomfortable. The question is what level of discomfort is acceptable? ` Unfortunately many people, who suffer from back problems, have had recent abdominal surgery or other disabilities find them extremely painful.'

(BBRAG)

`Speed humps cause a degree of discomfort to the occupants of vehicles, they affect traffic noise and ground-borne vibration.` "Track trials have shown that when buses are crossing road humps, the discomfort experienced by bus passengers can increase substantially as speeds increase from 15 towards 20mph." (Speed humps, discomfort, noise and ground-borne vibration.)

" Speed humps cause atmospheric pollution from speeding and slowing down of traffic between humps." (TRL report 482)

Is it morally and/or ethically right to impose such a method of traffic calming that has such a detrimental effect on so many people's lives? It is estimated that one in four people in the UK are affected by chronic pain and that a third of them suffer severe pain of a regular basis. (Pain Incidence Epidemiology)

It has been stated earlier "speed humps have a major impact on people suffering from medical conditions. Sadly complaints from individuals who are adversely affected by them are often ignored or belittled" (Speed humps and medical conditions).

Surrey heath and Woking PCT has a population of 205,300 (2001 Census). If one in four people are affected by pain this means that over 50,000 people in the area are adversely affected. Further we have an aging population, a proportion of who we know, suffer from increasingly painful musculo-skeletal conditions. The proportion of people over the age of 65 is 14.6% or roughly 30,000. Thus it can be seen that a significant proportion of the population of Woking are adversely affected by speed humps.

“Patients killed by speed humps”

Over a year ago the Chairman of the London Ambulance Service claimed that speed humps are killing hundreds of Londoners by delaying 999 crews. He said, “ for every life saved through calming, more are lost because of ambulance delays.” In one survey 88% of paramedics felt that speed humps interfered with CPR or other medical procedures. All respondents considered that a number of patient conditions were affected detrimentally by speed humps, particularly spinal or back injuries or fractures generally. (Patients killed by speed humps)

We are asking you to explore other alternatives to speed humps such as road markings, curb lines, improved sight lines, improved signage, painted lines across the road and that they are not installed unless there is no viable alternative.

Further that where they are installed that strict adherence is paid to the guidance in SI 1999 No 1025. I would respectfully remind you that authorities are required to exercise an adequate duty of care in the design and placement of speed humps. Highways (Road Humps) Regulations 1996.

In conclusion I would implore you to return our roads in Woking to the state that Macadam worked so hard to achieve – roads with smooth surfaces.

Thank you

Pauline Chapman
On behalf of NWSADP

ANNEX 2

Woking LTS Response to “The Case Against Speed Humps”

In preparing this Annex, Woking LTS has attempted to respond to the salient points in Pauline Chapman’s presentation document.

Travel along Kingsway, and to St John the Baptist School, Elmbridge Estate and Waitrose, West Byfleet

Kingsway is traffic calmed by means of a series of speed cushions, which were introduced after extensive consultation. These were constructed to be 75mm. high. The Department for Transport recommends a maximum height of 80mm, above which grounding of vehicles may occur. The speed cushions in Kingsway were measured by officers, in the presence of Borough Councillors, on 27 June 2002, and were found comply with the latest standard. This was reported to Committee in July 2002. Although UK legislation does not require a minimum clearance between the underside of the vehicle and the carriageway surface, vehicles which have been lowered, for whatever reason, are more susceptible to grounding, not only on speed cushions, but also on unevenly surfaced roads, junctions with private accesses where sudden changes of camber may occur, etc.

The traffic calming features at St John the Baptist School and at Waitrose in West Byfleet have been installed on private property, over which the Highway Authority has no direct influence. In the case of St John the Baptist School, the road hump installed would not be legal on the public highway, because it is less than 900mm. in length. (900mm. is the absolute minimum length – recommended minimum length is 3.7 metres). This hump is, however, only 60mm. in height.

Pauline Chapman kindly invited Surrey County Council officers to travel with her in her specially converted vehicle to witness at first hand the difficulties she faces in negotiating traffic calming schemes. This event took place on 11 June 2004. The road hump at St John the Baptist School was visited, although not driven over. However, while executing a three-point turn at the end of Elmbridge Lane, the vehicle grounded.

Speed humps only work when they are uncomfortable

Speed humps work because drivers slow down to avoid discomfort. Some drivers will not slow down without measures that physically enforce the required speed reduction. The principle behind humps is that any discomfort can be minimised by adopting slow speeds. Those drivers or passengers who suffer pain negotiating traffic calming features may also have difficulty driving over uneven roads, potholes, sunken gullies, etc. which may be present on any chosen route.

Speed humps.... affect traffic noise and ground-borne vibration.... atmospheric pollution

It is difficult to measure the change in environmental factors following the introduction of a hump scheme. This is because there are so many variables, the greatest influence being the wide variation in adopted driver behaviour. Other variables include traffic conditions / flow and composition, road surface characteristics, parking and congestion. Also, the levels of pollution, noise etc from similar vehicle types can be very different.

Nevertheless, surveys indicate that the instantaneous maximum noise levels from heavy vehicles may be increased by a road table, typically by unrestrained loads 'jumping' while crossing the hump in a heavy goods vehicle. Also, a change in tonal quality (such as the 'thwack' of a tyre or suspension squeak) from a car or van could cause annoyance. However, generally the perceived overall noise level following the introduction of a traffic-calming scheme is likely to be reduced as a result of the reduced traffic flow.

Measuring pollution in the real world is also difficult. Whilst the polluting effects of motor vehicles are known, it is not really possible to isolate any effect of traffic calming on pollution levels because of other variables such as ambient weather conditions, other sources of pollution, vehicle characteristics and driver behaviour. Again, in general, removing traffic from residential roads should not worsen the residential environment, whilst traffic diversion elsewhere tends to be dispersed.

Traffic Advisory Leaflet 8/96 on ground-borne vibration again illustrates the influence of other factors, in particular soil type. The results - based upon a Transport Research Laboratory track test - suggested that although vibration may be sensed some distance away, it is highly unlikely that any road hump will result in structural damage occurring to neighbouring buildings. 'Real world' conclusions are harder to make due to the difficulty in isolating the specific vibration effects of traffic travelling over a hump, as distinct from the overall effects of traffic with its variation in flow and composition over time.

Patients killed by speed humps, etc

This claim made by a London Ambulance Service (LAS) spokesman has never been substantiated. A report by the London Assembly transport committee found no empirical evidence to support the claims and berates the LAS for not responding to consultations. In Surrey, we have carried out journey time surveys which indicate that any delay caused by road humps is counterbalanced by less junction delay (due to less traffic) on the treated roads. The Ambulance Service in Surrey acknowledges the role of traffic calming in accident reduction and schemes are not generally introduced on strategic routes. Assessing the benefit in terms of accident reduction against the likelihood and frequency of a life-threatening callout to a residential road is not easy - both tend to be one-off random events in residential areas.

Surrey County Council officers have visited various traffic-calmed roads in Woking with the Surrey Ambulance Service, riding in ambulances under “blue light” conditions to gauge the possible effect on patients and vehicles. The ambulance service was satisfied that their vehicles could successfully negotiate these roads under these conditions.

In summary, traffic-calming schemes on the public highway are only introduced after consultation, and are always designed to comply with current legislation. The North West Surrey Association of Disabled People is now consulted on all proposed schemes before they come to Committee.