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# GLA

London Assembly – Transport Committee

Investigation into the impact of speed humps



*Working for a Safer London*

Metropolitan Police Service

Traffic OCU response

October 2003

## Do speed humps affect delivery of emergency services?

Traffic calming does affect attendance times, based on the principle that any highway obstruction will impede the progression of the emergency services during a response call.

In 1994, a traffic calming Code of Practice was issued by the then Department of Transport, in Traffic Advisory Leaflet 03/94 [1] with recommendations as follows:-

1. Emergency services and highway authorities to establish a dialogue on broad principles upon which traffic measures may be introduced and to consult on individual schemes at an early stage in their design.
2. Road hierarchy and emergency services strategic routes to be integrated.
3. Variety of calming measures to be determined and agreed for different roads, bearing in mind impact on response times.
4. Consider need for and, where appropriate, implement monitoring of journey times.
5. After installation, conduct review to determine performance of calming measures and the impact on journey times, where monitored.
6. Confirm measures agreed for use on different roads, or refine measures by further action from Stage 3.

A key recommendation was that "*strategic routes*" should be identified and agreed upon, however there is little evidence that London's Boroughs have acknowledged this issue.

A current challenge is that the Boroughs are receiving capital funding from Transport for London (TfL) for calming schemes that have been designed and bid for, and then on consultation, concerns are raised. Also, with the recent introduction of local council forums, residents have been using their allocated funds to implement traffic calming schemes in roads that have no history of accidents. Consultation should be carried out during the initial stages of design as we are left with a *fait accompli*.

There is also a requirement within *The Highways (Traffic Calming) Regulations 1999*[2] that highway authorities should consult the Chief of Police and other interest parties, however there is no requirement to take notice of objections or concerns.

It would seem appropriate, that at least within the GLA area, a Traffic Calming Strategy and Code of Practice should be adopted.

A Masters Degree paper [3] has been written by Asst Fire Chief Leslie Bunte, Austin Texas indicating the possible outcome of delays to the emergency services, based on a mathematical formula developed by Prof. Ray Bowman. It may be the case that this document could be used as a template, to model the UK experiences. This paper primarily deals with attendance times of Paramedic units.

### Reference:

- [1]Traffic Advisory Leaflet 03/94 – Fire and Ambulance services: A Code of Practice
- [2]The Highways (Traffic Calming) Regulations 1999
- [3]Traffic Calming Programs and Emergency Response: A Competition of Two Public Goods: Leslie Bunte, Asst. Fire Chief, Austin Texas, USA, 2000
- (4)Traffic Calming, A Code of Practice, Kent County Council (extract)
- (5)Traffic Calming for Residential Streets, Richmond, Virginia, USA
- (6)Traffic Calming Guidelines, Institute of Transportation Engineers, Massachusetts, USA
- (7)The Influence of Traffic Calming Devices on Fire Vehicle Travel Times, Portland, Oregon
- (8)LB Barking & Dagenham, Traffic Calming Scrutiny Panel, Recommendations, 2003

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**Do speed humps damage residential properties?  
&  
Do speed humps increase noise and pollution?**

Studies have already be carried by the Transport and Road Laboratory (TRL) and other organizations on these subjects

**References**

- TRL Report 235 - Traffic calming: Vehicle Generated Ground-borne Vibration alongside Speed Control Cushions and Road Humps
- British Standard 7385: part 2:1993. Evaluation and Measurement for Vibration in Buildings: Part 2 - Guide to Damage Levels from Ground-borne Vibration
- TRRL Research Report 246 - Traffic Induced Vibrations in Buildings
- (9)Traffic management and emissions, 04/96
- (10) Traffic Calming – traffic and vehicle noise, Traffic Advisory Leaflet 06/96
- (11)Road Humps and ground-borne vibrations Traffic Advisory Leaflet 08/96
- (12)Road humps: discomfort, noise and ground-borne vibration Traffic Advisory Leaflet 10/00
- (13)Estimating Vehicle Emissions and Air Pollution related to Driving Patterns and Traffic Calming, Hoglund & Niittymaki, "Urban Transport Systems" Conference, Lund, Sweden

**Do speed humps increase congestion in residential areas?**

We have no evidence that speed humps cause congestion in residential areas.

**Do cars try and make up speed by speeding between zones?**

Again, we have no evidence that drivers speed between zones. If the question was "Do vehicles try and make up speed between calming features?", the likely answer would be, yes.

**Do speed humps damage cars?**

There is clear evidence from damage to police vehicle that certain calming features damage the underside of low clearance vehicles. Due to the complexity of the police accident and repair databases we are currently unable to determine the exact number of vehicle hours lost through such damage or the total cost implications. However, from data reviewed over the past 3 months, 34 vehicles were possibly damaged due to traffic calming features at a basic repair cost in the region of £7,500. This type of underside damage can also extend to the new fleets of low-floored accessible buses, ambulance and fire appliances.

Although there are specifications relating to road humps contained within the *Highways (Road Humps) Regulations 1996* [2] there appears to be no audit trail on the final installation. A standard form of testing each hump in situ should be progressed and these results can be part of a "Stage 3 Safety Audit". Road Safety Audits [14] were initially mandatory for Highways Agency Trunk Roads under 1994 guidelines, however they have been adopted by many local authorities. Following partnership agreements with local authority Road Safety officers, police officers from the Traffic Management Units investigate the scenes of all fatal collisions and where necessary carry out such an audit. Not all highway authorities within the GLA area carry out Stage 3 Audits, and therefore it would be a recommendation that as part of ongoing road safety initiatives, safety audits were mandatory on all schemes, which cause a material change to the highway layout.

**Reference**

- [14]Highways Agency, Safety Audit Guidelines, 1994

**Are there alternative cost effective measures to speed humps and if so, which measures would you favour e.g. home zones, safety camera technology, speed limiters?**

Some local authorities have taken up the initiative of using "reactive" road signing to highlight excessive speed and provide other road safety information. These new devices have been recently approved for use on the UK roads, and from initial reports, traffic speeds have been reduced. The use of Home Zones, 20mph limits and zones should be further expanded under a road safety strategy and not implemented on an ad hoc basis merely spearhead by local resident pressure. These schemes should be prioritised on the basis of historic collision data and recent traffic speed surveys. Any schemes acceptance is based upon local consultation and a positive return of survey questionnaires. As found in some areas, the initial consultation returned a low percentage of forms, only to have a larger number of objections when finally approved by the relevant highway committee.

Safety camera technology is an effective form of enforcement that relieves police officers to perform other duties. The enforcement of other traffic calming schemes ie where point closures have been implemented to prevent "rat running", could be successfully policed using camera technology.

On the question of future technologies, Leeds University and the Motor Industry Research Association (Mira) are currently researching Speed limiters and GPS devices, and we will await their findings.

#### **Reference**

- (15) Home Zones - Public participation, Traffic Advisory Leaflet 08/02
- (16) Home Zones - Planning and Design, Traffic Advisory Leaflet 10/01
- (17) 20mph speed limits and zones, Traffic Advisory Leaflet 09/99

**What is your experience of the effectiveness of road humps in preventing and reducing the number of fatal injuries and traffic collisions?**

From data already available, it is obvious that a reduction in vehicle speed in turn reduces the severity of injuries received following a collision. Road humps are effective in reducing the speeds of all or some vehicles, depending on the design of the various schemes. However, the effectiveness of all traffic calming schemes should be monitored on an "on going" basis, with data comparison, to prove success or failure, over at least a 3-5 year period.

#### **Reference**

- (18) The Governments Response to the Transport, Local Governments and the Regions Committees Report - Road Traffic Speed, 2002
- (19) DETR - New directions in speed management: a review of policy, 2000

## Recommendations

- A GLA(TfL) Safety Strategy should be implemented to standardise the design and implementation of traffic calming schemes.
- Agreement should be sought on strategic routes used by all of the emergency services, in line with Traffic Advisory Leaflet 03/94.
- A protocol should be drawn up to verify that each traffic calming feature complies with the current regulations, and the actions to be taken if legacy features are found to be out of standard.
- GLA & Government funding of traffic calming schemes should not be allocated until the required consultation process has taken place.
- Developers submitting residential planning applications should now be considering 20mph and home zones at the earliest stages.
- Consideration to be given for the management of a centrally co-ordinated database that includes all traffic calming schemes, identified by Global Positioning Systems (GPS). This would serve as a central contact point and for the future, enable routes to be planned avoiding these areas.

## INVESTIGATION INTO THE IMPACT OF SPEED HUMPS

There is evidence that our vehicles are sustaining damage to the underside and that this is most likely to have resulted through collisions with speed-humps. However, it is difficult to accurately quantify this as this type of collision is rarely reported at the time it occurs. This type of collision damages the underside of the vehicle and is usually discovered when the vehicle goes in to the workshop for servicing and is raised on a ramp for inspection.

Typically, damage is caused to the engine sump and / or suspension sub-frame, exhaust system and occasionally the front spoiler.

On the Vauxhall Vectra Area Car, we fitted a sump guard under the engine due to the number of occasions vehicles were being found to have sustained engine damage.

In the last three months, we believe that thirty-four occurrences of damage may have resulted from speed-hump strikes, although this cannot be proven as these are only logged as underside damage found and were not reported as police collisions. The cost of repair for these thirty-four is £7500.

In general terms negotiating speed-humps can result in damage to a vehicle if it is approached at too higher speed. Negotiating speed-humps is also likely to cause an increased rate of wear on braking and suspension components, as well as increased fuel usage due to cycling between hard braking and hard acceleration between humps. However, it is not possible to provide any data to support this.

**Transport Services**  
**21 October 2003**