**Response from The Slower Speeds Initiative**
**London Assembly Investigation into the Impacts of Speed Humps**

## Introduction

The Slower Speeds Initiative was founded in March 1998 by the Children's Play Council, CTC, the Environmental Transport Association, Pedestrians Association, Pedestrian Policy Group, Road Danger Reduction Forum, RoadPeace, Sustrans and Transport 2000. We believe that lower speeds are essential to encourage sustainable transport modes and to reduce the impacts of our transport system, including excessively dispersed development, pollution, fuel consumption and noise as well as the overall number and severity of road casualties and their wider social costs.

### The need for 20mph speed limits in urban areas

We believe that there is an overwhelming case for area-wide 20mph speed limits. Wherever there is the potential for conflict between motorised and non-motorised road users and where adequate roadspace cannot be allocated to entirely to pedestrians and cyclists, speed limits should be no higher than 20mph. The chance that a pedestrian or cyclist will be killed if struck by a car at 30mph is about 50%. This is reduced to 5% at 20mph. A 20mph speed limit would also considerably reduce the chance of a collision occurring in the first place. Effectively enforced, 20 mph limits have been shown to reduce casualties by 60%, with child deaths and serious injuries reduced by 70% (Webster and Mackie 1996). Hull has achieved 90% reductions in deaths and serious injuries in its 20mph zones, most of which are enforced through road humps (Kingston-upon-Hull City Council 2000). 20mph speed limits will have an important role to play in achieving national road casualty reduction targets of 40% reduction in all deaths and serious injuries and 50% reduction in child deaths and injuries by 2010 (Department of the Environment, Transport and the Regions 2000).

There are several reasons why the casualty reducing effects of area-wide 20mph limits should be of particular interest in London. The foremost is London's casualty rate for vulnerable road users. Pedestrians and cyclists accounted for 72% of the deaths and serious injuries on the capital's roads in 2002 (Lines 2003). The national comparison is around 50%, in itself a shocking figure when the relative exposure of sustainable road users and car occupants is taken into account. Underreporting of casualties means that, at least nationally, the real figure for all serious injuries could be almost three times higher than official statistics suggest, while serious injuries for cyclists could be almost six times higher (Department of Transport, Local Government and the Regions 2001a).

There is a social equity dimension to these casualties. Many studies have shown that child pedestrians from poorer families can be up to six times more likely to be killed or injured by a driver than their wealthier counterparts (White and Raeside 2001). Levels of car ownership, rates of pedestrian and cycle journeys, proximity to A roads and many other factors indicate that poorer communities disproportionately bear the brunt of road violence (Department of the Environment, Transport and the Regions 1999).

A maximum speed limit of 20mph for all roads used by pedestrians and cyclists would reduce the current inequity in the distribution of risks that leads to inequitable access to the road network and wider transport system. Road danger discourages the use of sustainable modes and generates traffic. Over 40% of people in one poll said they would cycle more if the roads were safer. A quarter would travel less by car if conditions for walking were better (Hutton and Klahr 2000). This represents a huge potential to reduce congestion and danger while improving personal fitness and urban environmental quality. Area wide 20mph limits would also reduce congestion and pollution by improving the competitiveness of public transport, smoothing traffic flow and increasing junction capacity. There is a great demand for lower speeds. A recent government attitudes study showed that 80% of people want 20mph zones (Department of Transport, Local Government and the Regions 2001b).

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For all these reasons we support the progress which London has made in introducing 20 mph speed limits and we strongly support the Mayor's commitment to a 20mph limit for residential areas throughout London (Black 2003). The introduction of 20mph speed limits on between 65% and 85% of the urban road network has been established as the 'one critical success factor underpinning best practice' in the balanced use street space (Commission for Integrated Transport 2001).

**Achieving lower speeds through traffic calming**
Drivers do not comply with speed limits. 60% exceed the urban 30mph limit when conditions permit (Department for Transport 2003). However, the relationship between speed and crashes and speed and casualty severity, together with the disproportionate toll of injuries for pedestrians and cyclists, indicate not only that speed limit compliance must be greatly improved but that it should be as near as possible absolute in sensitive environments. These are where risks are high either because of a high potential for conflict, or because the consequences of conflict — such as the injuring and killing of children — are intolerable. The two reliable ways of achieving high rates of compliance are through engineering — traffic calming — and enforcement. Ideally, each approach would complement the other.

Traffic calming becomes the *only* option for protecting communities against speeding drivers where the police are not prepared or not able to enforce speed limits. We understand that the current threshold for speed camera enforcement of the 30mph limit in London is 42mph, a speed that will kill nearly 90% of pedestrians and cyclists outright. But it would be undesirable as well as impractical to expect continual police surveillance of all roads where speeding can occur and where the risks are high.

**Road humps**
The road hump is the most commonly used traffic calming measure. Humps have been shown to achieve an 88% reduction in crashes involving injury (Department of Environment, Transport and the Regions 2001). Any problems with humps, or any other form of traffic calming, should be placed in this context. Driver inconvenience and discomfort is a very small price to pay for injury reduction and prevention on this scale and the wider social benefits, including access to public space, that result.

The Department for Transport has produced an extensive series of Traffic Advisory Leaflets, many of them based on research commissioned from the Transport Research Laboratory (see http://www.roads.dft.gov.uk/roadnetwork/ditm/tal/). The studies show that judgement is required in choosing the appropriate type of hump for the traffic mix, including cyclists, and that spacing is important to ensure effectiveness and to smoothe out driving style which reduces noise, emissions and vibrations. But it is hardly news that scheme design and implementation are critical factors in successful highway engineering. The studies also show that, given satisfactory design, the impacts of humps on drivers, vehicles and the immediate environment are a function of the approach and crossing speeds. Put bluntly, driver discomfort and local environmental disturbance are the result of driver choice. We suggest that the main problem with humps may be that drivers do not slow down enough to negotiate them correctly or comfortably. This may be a matter of education and training, but it is also a matter of attitude.

Studies of air quality seem to indicate that any localised effects resulting from driving style are minor compared to the effects of weather and topography. Far from increasing congestion in residential areas, traffic calming schemes help to discourage through traffic and so also reduce pollution. No overall deterioration in air quality is associated with traffic calming. The balance between reduced crashes and increased emissions would appear to be problematic only in Air Quality Management Areas where standards are frequently breached (Wyatt 2001).

We know of no evidence that drivers try to make up time by speeding between zones. If there is evidence of this kind of behaviour, it is an example of driver ignorance since it is very unlikely to save any time. On the contrary, measures which encourage smoother driving at lower speeds may actually

save time as well as reducing pollution (Plowden and Hillman 1996; Várhelyi et al. 2002). There is some anecdotal evidence from Hull that speeds between zones are reducing as drivers have become accustomed to the extent of the traffic calming there. If this is so, the speed crash relationship indicates an additional road safety benefit, 'for free'.

**Traffic calming and the emergency services**
Since speed reductions and speed limit enforcement are undoubtedly effective in reducing casualties, it is extremely hard to see how traffic calming could conflict with overall health service objectives. The Health Development Agency has recently called for 20mph limits in residential areas, and a 'firm resolve to enforce' them, as a cost effective way to prevent 13,000 child deaths and serious injuries a year (Health Development Agency 2003). The Accidental Injury Task Force has supported 20mph limits. Speed reductions were recommended by the 1998 inquiry into health inequalities (Department of Health 1998). The Chief Medical Officer has recognised that building walking and cycling into daily life 'will be key' to meeting a target that 70% of the population should be physically active by 2020 (Department of Health 2003). Traffic calming is necessary to make urban environments suitable for walking and cycling.

For these reasons, even it were demonstrated that traffic calming was having an adverse impact on ambulance service targets and particular types of patient, the obvious approach would be to look for other ways to improve performance such as traffic reduction, or the use of supplementary means to deliver the service for these patient groups, such as cycling paramedics. In York, a single cycling paramedic helped to improve overall response times.

A code of practice for dealing with the emergency services when installing traffic calming was established in 1994 (Department of Transport 1994). It advocates the adoption of a strategic route system to help determine appropriate types and combinations of traffic calming measures. Consultation with the fire and ambulance services, as well as other organisations and groups representing users of the road in question, has been required by traffic calming regulations since 1996 (Department of Transport 1996). It may be that the problems the emergency services have, if substantiated, are the result of defective consultation processes and/or responses.

Strategic routes must be carefully planned since measures which assist emergency services necessarily involve reducing the effectiveness of traffic calming by reducing their intensity (including both frequency of measure and extent of the deflection they impose). Hull has demonstrated the success of the strategic approach by working with local emergency services from early on in its extensive programme of 20 mph limits.

**The need for a more comprehensive and planned approach**
New guidelines for Urban Safety Management stress that 'problems can be created where authorities do not adopt a safety strategy, where traffic calming is introduced on a piecemeal basis, or where road hierarchies and strategic routes have not been defined or brought together' (Department for Transport et al 2003). This indicates that the problem of conflicts arises — and should be resolved — at the higher level of planning and inter-agency communication.

A piecemeal approach to traffic calming is encouraged by a retrospective culture in road safety which waits for casualties to occur and then attempts to deal with the problem on a site-by-site basis. This culture could also account in part for the disproportionate casualties among pedestrians and cyclists since these tend to be more scattered and less amenable to localised treatment — another argument for area wide 20mph limits, properly enforced.

The retrospective culture itself follows from the low priority accorded to road safety in transport expenditure and arguably a correspondingly low status for road safety among highway professionals. Road casualties are seen as unintended consequences at the margins of the operation of the transport

system rather than as inherent products of the way in which the system is managed.  Or not managed, in the case of speed.

The piecemeal approach to traffic calming is also part of a wider and increasingly recognised institutional failure in the management of street space and use (see, for example, Office of the Deputy Prime Minister 2002). Well managed public space can help to stop the growth of car traffic and increase cycling (Commission for Architecture and the Built Environment 2002), two ways to reduce road casualties.  The Prime Minister put 'streets where parents feel safer to let their children walk to school' at the top of his liveability indicators when he set out the Government's intentions for better communities (Office of the Deputy Prime Minister 2002).

If traffic calming were properly considered as a primary aspect of urban environmental quality, it would have higher priority and more status, with correspondingly greater resources, effort and talent at the disposal of good and effective design.  It would be undertaken as part of wider road safety management including law enforcement and it would be linked to other areas of strategic planning, including land use and preventative health care.

The Gloucester Safer City demonstration project tested an integrated, whole city, approach to urban safety management, including a road hierarchy, engineering and land use measures, enforcement, extensive community engagement and education, training and publicity.  All casualties were reduced by 25%. Engineering measures, in which area-wide traffic calming played a major part, reduced casualties by 38% (Department for Transport et al 2003).

Road humps come in a variety of shapes and are only one category in range of measures including speed cushions and tables, narrowings, surfacing, gateways, etc.  It seems obvious that selection and combination of measures will depend on the site, its position in a strategic route system and traffic levels as well as scheme objectives and the level of resources committed.  The traffic calming repertoire continues to develop.  The Home Zone approach recognises that the residential street is a public space with a much richer range of uses than the mere passing and repassing of traffic.  Shared surfaces help to reassert human form and scale and reclaim space from motorised movement as well as keeping traffic speeds down.

The size of the traffic-calmed area also affects the range of measures and how they are combined. Cities in Europe, for example, Graz in Austria, have developed the concept of 'Gentle Mobility', based around 'Tempo 30', a 30kph (19mph) limit covering all streets which are not major distributors.  The motivation for the area-wide coverage was the desire to avoid extensive re-engineering of streets in an historic city.  Speed control depends mainly on signs, including carriageway roundels and gateways at intersections to remind drivers that they are entering a 30kph zone.  But it is backed up by high profile and ongoing publicity for 'Gentle Mobility', speed monitoring when communities feel speeds are drifting upwards and police enforcement when there is evidence that they are (Sammer 2003).

**Cost effective alternatives to road humps**
Traffic calming is extremely cost effective.  One study found average rates of return on area wide traffic calming measures of 500% (Local Transport Today 2001).  The official database on traffic calming records average returns of well over 200% for various types of calming measures (Transport Research Laboratory 2003).  The casualty reducing effect of humps indicates that they are extremely good value for money.  One urgent question in transport economics is why budgets are not allocated to maximise return.  We believe that expenditure on traffic calming and other danger reducing measures should be a top priority until the rate of return falls to the level required in other areas of transport expenditure, which can sometimes be a barely positive net present value.

The only competitor traffic calming has in terms of cost-effectiveness is the speed camera.  The netting off legislation resulted from studies demonstrating a 500% first year rate of return on investment and 2500% after five years (Hooke et al 1996).  Speed cameras have a major role to play

in Urban Safety Management and can be used to enforce 20mph limits (House of Commons 2002). There is an obvious case for using speed cameras on strategic routes to maximise compliance with 20mph and 30mph limits while minimising delays to emergency services.

Engineering and law enforcement are 'end-of-pipe' solutions to the problem of speeding. They deal with the problem at the wrong end, when it is ubiquitous and costly to prevent, because structures are not in place to eradicate it 'upstream', in the design of vehicles. In the short and medium term there are no alternatives for defending communities against speeding drivers. In a context of low rates of law enforcement, physical obstacles to speeding are the only options for local highway authorities. There is no reason traffic calming should not be used extensively and in a way which restores and enhances the urban environment for human use.

But London is now better placed than any other city in the UK to introduce speed control through the vehicle because of its success with congestion charging. It could build speed control into the future development and expansion of the charging scheme. This task would be greatly simplified if area-wide 20mph limits were introduced. A 2002 MORI survey found that 58% of people would accept compulsory in-car speed limiters, if road humps in residential streets were removed as a result (MORI 2002). The role of vehicle technology should not be overlooked in a comprehensive speed management strategy for the capital.

## Conclusion

We hope that this investigation will provide an overview of the design and implementation of traffic calming schemes in London. To understand the impact and value of traffic calming, it would be helpful if the investigation were to establish how much of London's overall transport expenditure is devoted to traffic calming, how much traffic calming is introduced only after deaths and serious injuries have occurred, the types and ages of the road users who benefit from traffic calming schemes, and the extent to which traffic calming is being used to improve poorer neighbourhoods.

We also hope that it will provide useful information for an ambitious programme of area-wide 20mph limits. Properly enforced 20mph limits would tackle London's excessively high casualty toll for pedestrians and cyclists and open its streets for sustainable, non-polluting modes of travel. Widespread 20mph limits would enable coherent planning of traffic calming, with strategic routes, an optimal mix of measures including shared spaces and camera enforcement, a consistent approach and high standards of urban design. A comprehensive approach would also be the most cost effective in the use of resources and the prevention of casualties.

If the vision is to move to an effective speed management regime which minimises casualties while maximising equitable access to the road network, healthy travel and high quality public space, then the role of in-vehicle technology must be considered. In the short and medium term, urban safety management should be planned with appropriate communication structures between agencies and tiers of government in London.

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