



Lewisham Council Sustainable Development Select Committee Modern Roads Review

RoSPA is delighted to be able to support Lewisham Council in this valuable piece of work in relation to 20mph speed limits and cycle safety. We are not in a position to comment on the subject of air quality beyond supporting the principle of encouraging safe sustainable modes of travel away from high pollutant vehicles.

20 mph Limits

Great Britain has made tremendous progress in reducing death and injury on our roads over the last 20 years, despite massive increases in traffic. In 2000 there were 42,033 road casualties, falling to 24,033 in 2013. However, during this period we have witnessed a marked drop in the people walking. Nationally the number of walking trips is down 35% since 1995 and this may be one reason for the fall in casualties. However, there are other reasons for this success, one of the most important of which has been improvements in road design, most especially speed management and local safety schemes, such as traffic calming and 20 mph zones. In Lewisham 85% of the roads currently have a 20mph speed limit and the aim is to enforce this right across the borough by the summer of 2016.

What are the likely benefits?

Speed significantly increases the chance of being injured in a collision. Studies which compare injury severity with vehicle speed show that accidents at speeds above 20mph are more likely to result in severe injuries, rather than slight injuries¹. The risk of being fatally injured increases too, and a UK study of accidents found that at 20mph there was a 2.5% chance of being fatally injured, compared to a 20% chance at 30mph². Similarly a study in Sweden³ concluded that the risk of fatality injury at 50km/h is twice as high as at 40km/h and five times as high as 30km/h⁴.

Speed management including the use and enforcement of speed limits is a practical and established way of reducing injuries⁵, and therefore urban 20mph zones present a way of significantly reducing the likelihood of a serious injury.

The Department for Transport's guidance in DfT Circular 01/2006 encourages and supports Local Authorities to implement 20 mph limits and zones in situations where there is a particular risk to vulnerable road users⁶. The guidance states that the purpose of 20 mph areas is to create conditions in which drivers naturally drive at around 20 mph as a result of traffic calming measures or the general nature of the location.

In 2013 the DfT introduced new guidance in Circular 01/2013 which now allows the use of signage and road markings in place of vertical and horizontal deflections (traffic calming) even where speeds are relatively high. This has the advantage of allowing much greater coverage of 20mph areas. Whilst arguably areas which have vertical and horizontal deflection are more effective in reducing vehicle speeds than purely limits on roads which have a higher speed limit feel to them. However, speed limits are more economical to introduce and allow for greater coverage.



Current evidence would indicate that 20 mph limits are more appropriate for roads where average speeds are already low (below 24 mph) or where traffic calming measures are put in place

The aim of the borough to reduce vehicle speeds is in accordance with the Department for Transport which is encouraging highway authorities to introduce, over time, 20 mph zones or limits into streets which are primarily residential in nature and into town or city streets where pedestrian and cyclist movements are high, such as around schools, shops, markets, playgrounds and other areas, where these are not part of any major through route.

A major deterrent in persuading people to cycle is the perception that it's too dangerous. For example, in a recent survey⁷ 39% said they would cycle more if the roads were made safer. In another question, 41% said they were concerned about the safety of road cycling.

Measures which break this perception of danger will encourage some individuals for shorter trips to consider walking and cycling which will have the benefit of providing valuable daily exercise. Forty percent of people currently don't carry out enough physical activity to achieve good health, which it is estimated leads to 37,000 premature deaths pa in England.

20 mph zones

RoSPA supports the implementation of 20mph traffic calmed zones as these have traditionally been introduced where there are high clusters of vulnerable road user casualties with speed or inappropriate speed being a common factor. Often these are found with areas of deprivation. There is a well-established link between socio-economic status and the risk of being injured in road traffic accidents. A report in 2003⁸ found that children from the lowest social class in England are five times more likely to die in road accidents than those from the highest social class, and that more than a quarter of child pedestrian casualties happen in the most deprived 10% of wards.

A major review of road casualties in London between 1986 and 2006 was published in the BMJ in 2009⁹. It demonstrated that 20mph zones reduced the number of casualties by over 40% (41.9%). 20mph zones were slightly more effective in preventing fatal or serious injuries to children, which were reduced by half (50.2%). There was a smaller reduction in casualties among cyclists than any of the other major groups of road users studied, with a reduction of 16.9%. The analysis showed that the reduction in road injuries in 20mph zones occurred at a greater rate than the overall trend in reduction in casualties in London, and that this was not attributable to any regression-to-the-means effect. There was no displacement in accident risk to roads close to the 20mph zones.

20 mph Limits

There has been an expansion of 20mph limits in the UK recently. The reasons for this rapid expansion are not solely for road safety; many are being introduced to contribute towards healthier environments, for example, by encouraging more active travel and social connectivity. They are an example of where there is a good synergy between road safety and other public health outcomes.

The risk of a pedestrian or cyclist sustaining an injury at different speeds decreases significantly between 30mph and 20mph. Several studies have estimated this



decrease in injury risk, predominantly by looking at pedestrian injuries, and are shown in following table:

Country	Date	Number of injuries examined	Risk of fatal injury at 30mph	Increased risk of fatal injury between 30 and 40mph
UK	1970s	358	~9%	5.5 times more likely
Germany	1999-2007	490 (excludes children under 15)	7%	3.5 times more likely
UK	2000-2009	197	7%	4.5 times more likely

20mph limits are now being widely introduced, Islington for example has recently introduced this across the borough. Despite this, nationally there is some scepticism in some quarters as to their effectiveness and they are not universally popular. For example Worthing County Local Committee unanimously rejected 20 mph limits on residential roads on November 19th 2014 following local consultation. 18,911 individual respondents voted with 5,796 (30.6%) voting 'Yes' and 13,115 (69.4%) voting 'No'.

In Portsmouth, a 20mph limit was introduced on around 94% of roads that previously had a 30mph limit¹⁰. Traffic speed was monitored before and after the introduction on 223 sites to establish effectiveness. There was an overall average speed reduction of 1.3mph following the introduction of the limits, as the average speed dropped from 19.8mph to 18.5mph. The change in speeds varied from a reduction of 0.6mph to 1.7mph, and across the city this was a statistically significant reduction.

The report concluded that the average speed reduction achieved by speed limit signs alone is less than that achieved by the introduction of 20 mph zones, with traffic calming measures, partly because 20 mph speed limits are implemented where existing speeds are already low. Within an area-wide application of 20mph sign only limits, roads with average speeds higher than 24 mph generally benefit from speed reductions, but not to the extent that the 20mph speed limit is self-enforcing.

An analysis of accidents found that there was an overall reduction in casualties but it was not significant when compared to the national trend.

Bristol has also piloted 20mph limits in two areas¹¹ Two years after the introduction of the lower limits, speed surveys on 10% of the roads covered by the scheme found a reduction in mean daytime speeds on 65% of the roads. On residential roads, there was on average a 0.4mph reduction in traffic speeds. There was a greater reduction on main roads, as 1.7mph was the average reduction in the Inner East area and 1.3mph in the Inner South area.

Safe System Model



RoSPA supports the implementation of speed reduction measures when it is introduced within the safe system model. The principle behind this is that high levels of safety can be achieved when there is a good match between the function of the road, safe speed limits and their compliance and design and layout. In proposing to introduce a Borough wide 20 mph limit RoSPA is pleased to see that you have recognised the importance of ensuring speed compliance on roads which do not have a 20mph feel. This may necessitate physical measures as the Metropolitan Police have indicated that there will be no additional enforcement beyond their route activity.

CONCLUSION

RoSPA strongly supports the use of 20 mph zones as they are an effective means of reducing road accidents. They can, and should, be supported by other measures to help drivers drive at safe speeds, and to enforce the limits for drivers who choose to ignore them. There are indications that in the right circumstances 20 mph limits, without traffic calming measures, can also reduce speeds and provide road safety benefits. The DfT has commissioned a new study to analyse the effectiveness of 20 mph speed limits.

¹ Pedestrians and their Survivability at Different Impact Speeds, Richard Cuerden, David Richards, and Julian Hill Paper Number 07-0440, presented at the 20th ESV conference, 2007

² Some Characteristics of the Population Who Suffer Trauma as Pedestrians When Hit by Cars and Some Resulting Implications, Ashton S J and Mackay G M 4th IRCOBI International Conference, Gothenborg. 1979

³ Pedestrian Fatality Risk as a Function of Car Impact Speed, Erik Rosén, and Ulrich Sander Accident Analysis & Prevention Volume 41, Issue 3, May 2009, Pages 536-542

⁴ The difference between 30km/h and 50km/h is the closest rounded approximation to 20mph and 30mph. 30km/h = 18.6 mph, 40km/h = 24.9mph, 50km/h = 31.1mph

⁵ Speed management : A road safety manual for decision-makers and practitioners
http://www.who.int/roadsafety/projects/manuals/speed_manual/en/

⁶ DfT Circular 01/2006 Setting Local Speed Limits
<http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/dftcircular106/dftcircular106.pdf>

⁷ UGov RoSPA Safer Cycling Survey, February 2015

⁸ Making the Connections: Final Report on Transport and Social Exclusion, Social Exclusion Unit, February 2003

⁹ Effect of 20 mph Traffic Speed Zones on Road Injuries in London, 1986-2006: Controlled Interrupted Time Series Analysis, Chris Grundy et al BMJ 2009;339:b4469

¹⁰ Department for Transport. Interim Evaluation of the Implementation of 20mph Speed Limits in Portsmouth, Final Report. London:Department for Transport. 2010.

¹¹ Bristol City Council. 20mph speed limit pilot areas, Monitoring Report. 2012