

“20mph Places” Conference, 1 May 2012

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My abstract for the Conference, as submitted to PTRC, began ...

“The safety claims for road improvement schemes are based on the totality of evidence and argument for the proposed implementation, supported by experience of similar schemes. This forms the Safety Case.

I will discuss the evidence for 20mph schemes, from the viewpoint of pedestrians, cyclists and drivers, using some of the techniques and elements from my job as Head of Safety Engineering for a UK aerospace and defence company.”

However, the results from some much vaunted schemes gave me some surprising insight into their “success”:

Portsmouth

(from their Second Year Report)

Killed and serious injuries (KSI): 19 per year prior to implementation rose to 20 per year after.

There was a **38% increase in pedestrian KSI** and an **11% increase in injured cyclists**. The Report also says “**although there was a 12% average reduction in KSI nationally, Portsmouth recorded a 6% increase in KSI**”. That was despite a 12% reduction in traffic volume within their 20mph area.

From the School Children section “There were **more casualties annually** in the two years following the introduction of the 20mph speed limit scheme than the annual average for the three years before”.

And virtually the last paragraph of the report’s conclusion states “casualty benefits greater than the national trend have not been demonstrated”. These are weasel words - why did they not state simply that **casualty benefits were lower than the national trend?**

Bristol

(from <http://www.bristol.gov.uk/page/20mph-speed-limit-pilot-areas>)

The number of overall casualties in the first 12 months of operation reduced by 5 in the Inner East Area and increased by 8 in the Inner South area. A net increase of three, and that is without knowing by how much the traffic volume fell by, but all 20mph schemes experience reduced traffic - it’s often an objective.

Summary

These are simply words and figures taken from reports and results that I have readily to hand. I have seen arguments that the numbers are too small to be meaningful. That may be true of individual examples but, when taken together, these projects show a **consistent and intolerable detrimental effect on road safety caused by 20mph limits**. I have found no examples where 20mph led to a reduction in casualties, after accounting for national trends and traffic volume.

How do 20’s Plenty deal with road safety and casualties?

The only statement on the subject on their website is a headline from the Portsmouth report: “22% fewer casualties in Portsmouth”, which, by concentrating on casualty totals, conveniently avoids mentioning not only increases in serious injuries, far better national results over the same period (even more so when corrected for traffic volume) but also that while speeds fell on some roads they rose significantly on others. 20’s Plenty seem to realise that road safety is reduced by 20mph limits.

And Living Streets?

“Reducing traffic speeds on our streets is the single biggest measure that will make them safer, more vibrant and social places”. They then add “If you are hit by a car at 35 mph, your chance of survival is 50%. If you are hit at 20 mph, your chance of survival leaps to 97%”. **Who in their right mind would centre their safety policy on “hitting people at slower speeds kills fewer of them”?** I have seen numerous examples of this type of mantra and they are all repugnant.

In any case, this over-simplistic view assumes that impact speeds are the same as travelling speed, whereas in most cases the driver will be able to take evasive or braking action. Indeed it is for this reason that only low single figure percentages of pedestrians are killed even where traffic flows at 30mph or 40mph

Oxford

(From the Oxford Mail website 4 April 2012)

£250,000 spent on 20mph in 2009. In 2008 there were 61 people either killed or seriously injured in Oxford. That rose to 71 KSI in 2009 and 72 in 2010, the latest figures available. The number of accidents also rose. In the two years before September 2009 there were 64 crashes that resulted in KSI. That has risen to 71 in the first two years of the 20mph scheme.

Warrington Town Centre

(from their 20mph Pilots Evaluation Report)

The Town Centre had “a history of vulnerable road user casualties” but during the 18-month 20mph pilot from Feb 2009, serious injuries increased by 66% and minor injuries by 48%.

St Peter’s Street, St Albans (my home town)

Figures provided to me by Hertfordshire Highways showed a 33% increase in injury accidents in the three years after a 20mph limit was imposed in the main street compared to the three years prior to commencement of work on the scheme. This was in contrast to an overall reduction of 45% in injury accidents in the City Centre junction improvement scheme using the same before/after basis. This demonstrates that 20mph limits do not reduce injury accidents whereas other things, such as traffic flow engineering and improved visibility, do.

So why did these schemes fail?

Vulnerable road users are encouraged to feel safer - a natural instinct when traffic is slower. They get complacent, take less care, as can be witnessed driving through any 20mph area or zone. The following is a summary of the effects of 20mph limits:-

Positive benefit of lower speeds:

✓ Lower speed may mean more time to stop, thus preventing accidents or reducing seriousness of injuries.

Negative and hence undesirable effects of lower speeds, which increase accidents:

- × Roads "feeling safe" lead to less care/attention by pedestrians/cyclists
- × Slower vehicles make less noise and are therefore less likely to be noticed
- × Speeds lower than natural increase frustration and lead to inappropriate overtaking.
- × Human brains being tuned to pay attention to faster moving objects in peripheral vision, slower vehicles are less likely to be noticed
- × Speeds lower than "naturally safe" lead to lower concentration levels by drivers
- × Driver attention diverted to checking speed limit signs and speedometer
- × Driver priorities shifted from being safe to the belief that legal is safe

It is inconceivable that the single positive can outweigh the listed negatives. And any other "benefits" would have to be astronomical to argue that they are worth paying the price of reducing road safety. "Quality of Life" arguments are specious when offset by increased casualties.

Safety Principles and the Law

Much is made of public support for 20mph but the view of a generally uninformed public counts for nothing in a safety assessment. The public cannot possibly know all of the relevant facts about road safety and, like too many decision-makers these days, are blithely unaware of the Law of Unintended Consequences - that almost any change is accompanied by adverse as well as desired effects. In my own experience, St Albans Council employed a blatantly biased 20mph questionnaire.

Virtually all accidents, not just road accidents, result from a combination of a hazardous condition (eg. fog, tired/drunk driver) and a triggering event (eg. misjudgement, failure to look, unsignalled manoeuvre). A "vehicle exceeding 20mph" (or 30mph, or any other speed) is not a hazard, nor is it a triggering event. A moving vehicle is a hazard, but a 20mph limit does not remove that hazard and, since typical average reductions in 20mph areas are about 1mph, a 20mph limit does little to mitigate it.

To support a safety claim that 20mph limits can reduce casualties, a pre-requisite is to find a collision in a 30mph area that credibly would not have happened had a 20mph limit previously been implemented. **For every such collision that could credibly have been prevented by 20mph, I will find TWO in 20mph area/zones where the 20mph limit contributed to the incident.**

It is a fundamental safety principle that no change should be made that increases risk, hoping that behavioural changes will compensate for it. The evidence that I have presented, supported by far more in my files, means that those in authority implementing these schemes are failing in their Duty of Care as they are **breaching the Health and Safety at Work etc Act 1974**, specifically Section 3 (1), which states that:

It shall be the duty of every employer to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not thereby exposed to risks to their health or safety.

Another article of legislation is the Construction Design and Management Act (CDM) 2007 (duty to identify and reduce hazards in use). This is clearly not being applied by those implementing 20mph schemes.

20mph Areas and Zones are thus UNLAWFUL and MUST BE ABANDONED IMMEDIATELY

This paper formed the basis of a presentation at the 20mph Places Conference on 1 May 2012

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He is not a member of, or affiliated to, any road safety organisation and is independent of all vested commercial or political interests. He is self-funded and has not received payment in connection with any road safety activities.