

# **20mph Places - 2012**

**Eric Bridgstock**

*Independent Road Safety Research*

# Background

---

- BSc(Hons) Computing, Mathematics and Statistics (1977)
- RoSPA advanced driver
- Software Engineer, Project Manager, Safety Engineer
  - civil air traffic management systems
  - flight control system
  - military low flying
  - aerial targets
  - artillery range
  - IFF systems
  - weapons
- Been researching road safety, and especially speed management, since 2007 - totally independent

# ***My abstract submitted to the Conference***

---

*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...*

# Portsmouth

---

- killed and serious injuries (KSI) rose from 19 per year prior to implementation to 20 per year after.
- **38% increase in pedestrian KSI**
- **11% increase in injured cyclists**
- **“although there was a 12% average reduction in KSI nationally, Portsmouth recorded a 6% increase in KSI”.**  
**despite a 12% reduction in traffic volume within their 20mph zone**
- From the School Children section **“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”**
- Overall **“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

---

- overall casualties in the first 12 months of operation
  - reduced by 5 in the Inner East Area
  - increased by 8 in the Inner South area
  - a net **increase of 3**
- change in traffic volume not reported but all 20mph schemes experience reduced traffic - it's usually an objective!



# Oxford

---

- £250,000 spent on 20mph in 2009.
- Casualties in Oxford increased
  - 2008 there were 61 KSI
  - 2009 that rose to 71 KSI (+16%)
  - 2010 rose again to 72 KSI (latest available figures).
- The number of accidents also increased.
  - In the two years before Sept 2009 there were 64 crashes that resulted in KSI.
  - That rose to 71 (+10%) in the first two years of the 20mph scheme.

# Warrington

---

- The town centre had “a history of vulnerable road user casualties”
- during the 18-month 20mph pilot from Feb 2009
  - serious injuries **increased by 66%**
  - minor injuries **increased by 48%**

# Summary

---

- These are simply words and figures taken from reports and results that I have readily to hand.
- Several arguments claim 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 attributable to 20mph limits**.
- **No examples found where 20mph has led to a reduction in road casualties, after accounting for national trends and traffic volume.**



# 20's Plenty For Us?

---

- Website contains the headline “22% fewer casualties in Portsmouth”
- Conveniently avoids mentioning
  - increases in serious injuries
  - far better national results over the same period (even more so when corrected for traffic volume)
  - while speeds fell on some roads, they rose significantly on others
- 20's Plenty seem to realise that road safety is not improved by 20mph limits.

# Living Streets?

---

- “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.
- This over-simplistic view also 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.

# So why do 20mph schemes fail?

- Vulnerable road users encouraged to feel safer - it's a natural instinct when traffic is going slower
- They get complacent, take less care
- This can be witnessed driving through any 20mph area/zone



# Positive and negatives

---

## *Positive benefit of lower speeds:*

- Lower speed may mean more time to stop thus preventing accidents and reducing seriousness of injuries.

## *Negative undesirable effects of lower speeds:*

- 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" induce 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

# Balance of Effects

---

- Inconceivable that the single positive can outweigh the listed negatives.
- 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.
- *20's Plenty* website helpfully provides a spreadsheet to assess the “cost” of casualties. They actually mean “value” (which is quite different from “cost”, as confirmed to me in 2010 by Amyas Morse, Comptroller of the National Audit Office) and use the DfT HEN1 values (£1,683,810 for a death, £189,000 for a serious injury and £14,590 for a minor injury).
- *20's Plenty* should use their calculator to estimate how much their lobbying for 20mph has “cost” the local authorities and how much grief they have contributed to.

# Public Support

---

- Much is made of public support for 20mph
- But the view of a generally uninformed public counts for nothing in a safety assessment (ask them if Concorde should still be flying!)
- 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 (and often unexpected), as well as desired, effects.
- In my own experience, St Albans Council employed a blatantly biased questionnaire to manipulate public opinion in favour of their latest 20mph scheme.

# The Recipe for a Collision

---

A collision needs

**hazard or hazardous condition**

**AND**

**triggering event**

... initiates an **accident sequence**, which will become a collision unless something can prevent it ...

# Hazards and Events

---

- Hazards - driver or vehicle
- Other hazards - weather conditions, road layout, other road users.
- Triggering events - misjudgement, poor observation, poor concentration, unsignalled manoeuvre, aggressive driving, vehicle failure, falling asleep
  
- A collision can be prevented by
  - removing or mitigating the hazardous condition
  - preventing or mitigating the triggering event
- **A 20mph limit can do neither**
- Nor can a 20mph limit mitigate an accident sequence - that involves driver skill, crash barriers, seatbelts, air-bags, crumple zones, ABS, luck, etc.



# Credibility

---

- 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 been implemented.
- **For every such collision, I will find TWO in 20mph area/zones where the 20mph limit contributed to the incident.**

# Safety Principles and the Law

---

- 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 20mph 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.*

# Conclusion

---

**20mph Areas and Zones are  
DANGEROUS and UNLAWFUL  
and must be  
ABANDONED IMMEDIATELY**

**Eric Bridgstock  
Independent Road Safety Research  
[eric@brip.greenisp.org](mailto:eric@brip.greenisp.org)**