20 Mph Zones in Portsmouth

The issue of 20 Mph zones has been covered several times in our past newsletters, but as there are continued calls to introduce them on a wide area basis in London, it seemed worthwhile to examine the results of an experiment in Portsmouth. The photograph above is taken from the cover of the "Final Report" on the "Interim Evaluation" by the Department for Transport (DfT) of the introduction of a blanket 20 mph speed limit in Portsmouth, and shows how uninformed children are often roped into supporting such campaigns. The full report, published in September this year can be obtained from:
www.dft.gov.uk/pgr/roadsafety/speedmanagement/20mphPortsmouth/

The scheme in Portsmouth covered 94% of the roads in the city and was established by simply putting up 20 Mph speed limit signs all around the entry points. No other road engineering measures were undertaken, unlike in most 20 Mph zones. The cost was £573,000 in total. It was introduced in 2008, so only 2 years "post installation" data is available instead of the normal 3 years that traffic engineers prefer. Traffic speeds before the scheme was implemented were on most roads "less than or equal to 24 mph" according to the report, mainly because these are mostly narrow streets, with mainly terraced housing and parked cars lining the streets.

The Claims

They emphasise a significant reduction in the average speed of traffic in some areas (those that were above an average speed of 24 mph saw a reduction of 6.3 mph). However, the average reduction in mean speeds was only 1.3 mph overall.

They claim a reduction in road casualties of 22% comparing the 3 years before to the 2 years after, but they acknowledge that national figures for comparable areas fell by 14% in the same period, giving a net reduction of 8%.

Many people have hailed this scheme as a major success, in that it claims to show significant improvements in traffic speed and accidents, with a simple, low cost, signs-only approach. Do the claims stand up to scrutiny? Your editor does not think so for the reasons given below. Would a similar approach work in other areas, where roads are more open (and generally have higher current speeds)?

Probably not is my conclusion.

More details below.

Claims Refuted - Speed

Until this year, the DfT did not recommend the introduction of 20 Mph zones without "self-enforcing" measures to ensure compliance. This typically meant speed humps which most residents hate because of the discomfort of driving over them, the noise and vibration they generate in adjacent properties, and other disadvantages.
Indeed the DfT used to say that "*Extreme caution should be exercised when considering making 20mph limits using speed limit signs with no supporting speed reducing features. The weight of evidence points strongly to signed only 20 mph limits having little or no effect on traffic speeds*". But in 2010, they have relaxed their views due to political pressure from anti-speed fanatics and those who wanted 20 mph zones without humps, without any new evidence.

Does Portsmouth show their revised view is justified? It's very questionable for the following reasons:

1. The overall reduction in average speed was only 1.3mph. This was statistically significant at the 95% level, and hence is scientifically justifiable.

But all other more selected areas were not, and their picking out some roads that had higher speeds beforehand to claim that these show significant reduction is a manipulation of the data which is not sound. These might simply be random higher readings that were washed out when remeasured.

Indeed they actually point out that some roads still had consistently higher speeds in the range of 24 to 29 mph presumably because these were not perceived by road users as being appropriate for lower speeds so compliance with the new speed limit was poor.

2. They do not state how the speed readings were taken. If these were taken by using speed guns as seems likely, it's hardly surprising that the readings fell afterwards when people were aware of the 20 mph zone when they may have ignored such observation before.

3. Anyone experienced in looking at traffic schemes knows that any change in a road layout or signage tends to show an impact in the first year, as drivers perceive the difference and take more care. One per cent is certainly assignable to this cause. That is why three years of before/after data is usually preferred. Did the report contain any data on the first year benefit versus the second? No it did not, which might have been helpful to understand this issue.

4. They ignore the well known "Hawthorne" effect of experimenting on people – tell them something will improve and it likely will, for a limited time at least. See this page for a simple explanation:
www.freedomfordrivers.org/Hawthorne_Experiments.htm
To prove their claims, they really need to remove the speed limit and see if speeds return to the level previously.

In summary, the residents might like the new speed limits, but the effect may well have been minimal (as many claimed with renewed calls for "more enforcement").

It is worth emphasising, that the area concerned is very different to most residential areas in the rest of the country where existing speeds are nearer 30 mph than 20 mph.

Claims Refuted – Accidents

The claims for accident reduction are even more doubtful. In reality the KSI (Killed and Seriously Injured) actually rose from 19 to 20 per year after the installation of the zone.

Neither is there any data published on statistical confidence tests on the reduction in minor accidents or overall accidents. Presumably because they did the tests and there was no "validation" demonstrated. In any case we know that the figures for minor accidents are subject to wild under-reporting which has been growing of late.

No data on traffic volumes is supplied which is a key measure when looking at accident figures. If traffic volume is reduced for some reason, then accidents will also.

The same complaints about short term effects and the Hawthorne effect mentioned above for speed also apply to the accident data.

The Spurious Claims from Hull (Again!)

The wonders of traffic calming schemes and 20 mph zones in Hull are promoted in Chapter 8 of the report, and seems to be yet another example of that City's self promotion. Your editor did a good job of demolishing the claims from Hull some years ago – he showed that the reduction in casualties could be explained by people simply moving out of the City, or moving to other, safer more transport modes (such as cars). See this BBRAG Newsletter for more information: www.freedomfordrivers.org/News27.pdf

But they point out that sign only schemes in Hull also only resulted in a 1mph improvement in speeds. Is it worth it one has to ask? Speed display devices might be more effective.

They also compare the 20 Mph zones in London as analysed by TfL which show accident savings of over 40%. But these are more costly schemes, with extensive road engineering measures (and not just speed humps).

The Key Question

So the key question is: was the expenditure of £573,000 in Portsmouth a good use of scarce funds, or could it have been spent more wisely? More research and more data is required, but on these figures, the cost-benefit of potentially saving a few minor accidents (if that benefit is there at all), hardly justifies that level of expenditure.

Your editors view is that 20 Mph zones are worthwhile in selected areas, where traffic speeds are already low (and hence compliance is likely), and where traffic engineering is used in addition (but not speed humps). But regrettably politicians are often looking for cheap and simplistic solutions, so it's either "speed humps everywhere" or "20 mph everywhere". What is really needed is a detailed analysis of the problem and the environment, with well designed and specific solutions.

The data from Portsmouth simply does not support "sign-only" schemes over a wide area at this time.

A.B.D. London (www.freedomfordrivers.org)
5/Oct/2010