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Des McKibbin

Edinburgh 20mph Speed Limits

1 Overview

This paper provides a brief background to the 20mph speed limit pilot in Edinburgh. The aim of this (Pilot) project was to reduce vehicle speeds through signage and surface markings only, as opposed to using physical traffic calming measures.

1 Background

Increasing the safety of road users and pedestrians has been the primary driver of 20mph zones in the UK and it has proved very effective at reducing both the frequency and severity of accidents.[1] In London for example, Transport for London (TfL) recorded a 57% reduction in serious/fatal accidents while the frequency of injury accidents fell by around 42%[2] in areas designated as 20mph zones.

The first three 20 mph speed limit zones were implemented in the UK in 1991 in Sheffield, Kingston upon Thames and Norwich. Since then a considerable number have been installed, and although the DfT no longer keeps a central record[3] of the

[1] DfT (2011) Infrastructure and Cyclist Safety. DfT London [online] available from: http://nia1.me/mp
[2] TfL (2002) Review of 20 mph Zones in London Boroughs[online] available from: http://nia1.me/mj
[3] DfT (2007) Traffic Calming: Local Transport Note 1/07 [online] available from: http://nia1.me/1ui

actual number, they estimate that there are approximately 2,150 20mph zones in operation in England (in 2009).[4]

The use of 20 mph speed limit zones was intended to address the serious problem of child pedestrian accidents occurring in and around residential areas, and so initially most of the 20 mph zones were limited to these areas, although there were a small number of 20mph zones in town centres and rural areas.[5]

A review of the first 230 zones in England, Wales and Scotland found that:

- average speeds reduced by 9 mph;
- annual accident frequency fell by 60 per cent;
- the overall reduction in child accidents was 70 per cent; and
- there was an overall reduction in accidents involving cyclists of 29 per cent.

These schemes evaluated by Webster and Mackie (1996)[6] all included physical traffic calming measures. This is in line with the DfT guidance which suggests that in order to address issues of excessive speed or high accident rates **physical measures were necessary**, whereas a **sign only speed limit would only be appropriate where speeds are already low.**

A subsequent study carried out by TRL in 1998 focused on areas where a 20 mph speed limit had been introduced without extensive traffic calming measures. This review found that:

- The use of 20 mph signs alone, without associated traffic calming methods, led to speed reductions, on average, of about one mile per hour; and
- 20 mph speed restrictions where reliance is placed primarily on the signing of the limit are less effective in reducing traffic speeds than when zone treatment (traffic calming) is used.

2 Edinburgh

The introduction of 20mph limits on residential streets and streets with high levels of pedestrian activity is a key element of Edinburgh City Council's (ECC) Local Transport Strategy and both the Council's Active Travel Action Plan (ATAP), and the Road Safety Plan for Edinburgh to 2020 (RSP). It is hoped that by lowering the speed of vehicles more people will be encouraged to walk or cycle while both the frequency and severity of collisions will be reduced.

Already approximately 50% of the residential streets in Edinburgh are designated 20mph zones where the speed is restricted by physical traffic calming features. These

[4] DfT (2009) Review of 20mph Zone and Limit Implementation in England [online] available from: http://nia1.me/1um
[5] DfT (1999) 20mph speed limits and zones: Traffic Advisory Leaflet 9/99 [online] available from: http://nia1.me/1uj
[6] Ibid.

have a proven track record of casualty reduction and are self-enforcing; they are, however, costly to implement and require maintenance.

Whereas previously there had been a distinct difference between 20mph zones (they required physical measures) and 20mph limits (sign-only), a relaxation of UK traffic calming legislation in 2011, has made it possible to introduce 20mph zones without solely relying on the use of physical traffic calming features at set intervals. Features that were previously confined to 20mph limit areas, e.g. repeater signs and surface markings, can be incorporated instead. **Where speeds or road traffic incidents remain a pressing concern, physical traffic calming measures may continue to be used.**

The current guidance from the Department for Transport (DfT) suggests that 20mph limits are appropriate for roads **where average speeds are already low (below 24mph).** However, the DfT (2009) also encourages highway authorities to introduce 20mph zones (with traffic calming measures) 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 and playgrounds.

Portsmouth was the first town to introduce an area-wide 20mph speed limits, indeed Portsmouth City Council (PCC) has introduced 20 mph speed limits on 410km of its 438km road network. While initial results of the this scheme are encouraging, with a reduction in average speeds and indications that casualties have fallen, PCC suggest, based on their own analysis, that this approach is only applicable to congested built up areas where traffic is already slow.

2.1 The pilot

The Edinburgh pilot was evaluated based on examines changes to vehicle speeds and volumes, road traffic incidents, and the attitudes of residents to walking, cycling, and the local environment. The outcomes of this evaluation are summarised below:

2.1.1 Outcomes

- Speed surveys were undertaken across a sample of street locations in the pilot area, before and after implementation. For the 28 locations that had their speed limit changed to 20mph, average ‘before’ speeds were 22.8mph, while ‘after’ speeds fell to 20.9mph; an average fall of 1.9mph;
- Four locations across the pilot saw slight increases in average vehicle speeds from the ‘before’ to the ‘after’ survey;
- 75% of the surveyed 20mph streets continue to have average vehicle speeds in excess of 20mph, however in all streets (except the four locations) speeds remain lower than 24mph - the DfT threshold recommended for the effective operation of 20mph Limits;

- There was insufficient data to assess the impact on accident frequency and severity;
- There were only marginal improvements to attitudes towards road safety i.e. a small number of people indicated they would be more likely to walk or cycle but the difference was not statistically significant.

2.1.1 Costs

The pilot costs were met from the approved annual Road Safety capital budget, with costs spread across the financial years 2010-13, reflecting the extent of the project. The cost of the pilot is in the order of £213,542, and comprises the following key elements:

- £112,792: signage and surface markings;
- £61,340: staff costs;
- £13,760: attitude surveys (50% funded by the Scottish Government);
- £7,530: vehicle surveys;
- £15,000: consultation costs; and
- £10,000: campaign advertising.

2.1.2 Moving forward

Based on the perceived success of the pilot a strategy was outlined for a roll-out of 20mph limits to all residential streets, main shopping streets, city centre streets, and streets with high levels of pedestrian and/or cyclist activity across Edinburgh.

The city council supported this strategy and the introduction of 20mph speed limits across the type of areas discussed is a key element of the ECC Local Transport Strategy for January 2014-2019 which was approved by the council in January of this year. A speed limit of 20mph covering most streets in Edinburgh could now be introduced by the city council by 2017.