



To: Management of Place
From: Adrian Davis
Date: 12th April 2019
Subject: Essential Evidence on a page: No 185 The effectiveness of a 20mph speed limit intervention on vehicle speeds in Bristol

Top line: The findings indicated that the sign-only 20mph intervention was successful in lowering vehicle speeds. Policy makers are encouraged to implement a careful monitoring of the effects of 20mph speed limit interventions on vehicle speeds in order to enable a meaningful evaluation of potential public health benefits.

Twenty mph (32.2km/h) speed limits across urban areas are becoming a widespread tool for public health and road danger reduction globally. Determining the effectiveness of these interventions on motorised vehicle speeds is a crucial first step in any model that seeks to associate 20mph speed limits to improved health and wellbeing outcomes. Prior research has confirmed that there is a 6% reduction in collisions with each 1mph reduction in average speed.¹ A 2018 paper presented findings from a novel comprehensive academic evaluation of the adjusted effects of a 20mph sign-only city-wide intervention on vehicle speeds. This is based on a natural experiment that took place in Bristol, UK.²

In Bristol, a 20 mph limit scheme was introduced in 7 phases (by electoral wards) between 2010 and 2015 across the city and did not involve the introduction of any physical traffic calming measures. After the successful implementation of a pilot phase in 2010, the lower speed limit was introduced in six further phases between 2014 and 2015. The main aims were reducing road danger; making Bristol healthier, lowering road speeds and making walking, cycling and outdoor play more attractive options; and supporting and building communities.³ The lower limit was accompanied by social marketing measures (using advertising and community engagement) that aimed to influence individuals' attitudes towards speed. The city council undertook a comprehensive programme of vehicle speed monitoring to evaluate the introduction of the 20 mph limits. Speed monitoring sites included 106 roads, with a mix of residential and non-residential, including 77 roads that changed from 30 to 20 mph limits, and 29 that retained the 30 mph limit. Automatic Traffic Counters monitored car speeds for two weeks a year on a 24-h, seven full-day count.

The analysis found that following the introduction of a sign-only 20 mph limit the average adjusted reduction of individual vehicle speeds on those roads which received the intervention was 2.66 mph (4.28km/h) over two to three years, and that the speed reduction was larger at specific times of year/week/day. In addition, it was found that the intervention appeared to have a spill over effect on the roads that remained 30 mph, which saw a general reduction of speed, though of a smaller magnitude than the 20 mph roads. Finally, the change in speed varied significantly between areas, with a larger reduction in the innermost areas of the city, where the intervention was implemented earlier than other areas. Importantly, the descriptive analysis has shown that compliance to the posted speed limit improved following the intervention in both 20 mph and 30 mph roads.

¹ Taylor, M., Lynam, D. Baruya. A. 2000 *The effects of drivers' speed on the frequency of road accidents*. Crowthorne: Transport Research Laboratory.

² Bornioli, A. et al, 2018. The effectiveness of a 20mph speed limit intervention on vehicle speeds in Bristol, UK. A non-randomised stepped wedge design, *Journal of Transport & Health*, 11, pp. 47-55.

³ Bristol City Council, 2012. 20mph Speed Limit Pilot Areas: Monitoring Report. 2012. Bristol City Council. <https://www.bristol20mph.co.uk/wpcontent/uploads/2016/06/20mph-Monitoring-Report-pilot-areas-2012.pdf>