

Using Evaluation to Drive Program Improvement: Permanent 40 km/h Speed Limits in High Pedestrian Activity Areas in NSW

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Abstract

An evaluation of permanent 40 km/h speed limits in NSW aimed to determine their effectiveness in preventing crashes and to guide future program implementation. Close collaboration between independent evaluators, commissioning staff and program managers helped focus the evaluation on important questions for program management, maximising the usefulness of evaluation results. A clear safety benefit was found, along with broad support from the community, practitioners and stakeholders. The evaluation recommended expanding the program to generate further safety benefits and improve urban amenity. Increased implementation of permanent 40 km/h speed limits will be considered in light of the findings.

Background

A central concept of the Safe System is that speed limits are set so that road user mistakes will not result in death or serious injury. The lowest speed limits are for environments where pedestrians and other vulnerable road users interact with motor vehicles. Above 30–40 km/h the risk of death or serious injury in a pedestrian crash increases rapidly.

Permanent (full-time) 40 km/h speed limits have been implemented in High Pedestrian Activity Areas (HPAAs) in NSW since 2003. The HPAA program helps fund traffic calming infrastructure in locations such as shopping strips, beachesides, and near railway stations and other services. Permanent 40 km/h speed limits have also been implemented in some residential areas.

The evaluation of permanent 40 km/h speed limits aimed to determine: their effectiveness in reducing casualty crashes; other impacts such as community amenity; whether they were appropriately located; whether the HPAA program had been designed and implemented effectively; and how future implementation might improve safety outcomes.

Approach

Previous work at the Centre for Road Safety (Wilkinson, Barnes & Walker, 2016) revealed that evaluation results were more likely to be used if the evaluation had a clear focus, if senior stakeholders were actively involved, and if commissioning staff and evaluators worked closely together. A reference group of senior program partners and managers was formed at an early stage to plan and oversee this evaluation. It formulated the evaluation questions, which focused on program improvements, and collaborated with the independent evaluators during all stages of the evaluation.

Evaluation methods included:

- crash data analysis, which looked at permanent 40 km/h speed zones and a comparison group of urban roads with 40–60 km/h speed limits
- workshops and interviews with practitioners and stakeholders

- an online survey with a representative sample of NSW residents
- consultation with other Australasian jurisdictions.

Key Findings

Statistically significant crash reductions occurred after implementation of 40 km/h HPAA. These areas experienced almost double the reduction in casualty crashes compared to other urban roads between 2002 and 2015 (38% compared to 20%; Table 1). Notably, reduced casualties occurred for road users generally, not just for pedestrians. Analysis of the location of 40 km/h speed limits indicated that expanding coverage would be expected to generate further safety benefits.

There was a broad consensus among practitioners and stakeholders that lower speed limits also achieve other benefits, such as supporting pedestrian activity and urban amenity. The survey of NSW residents showed strong community support, with 78% of respondents at least moderately in favour of the 40 km/h limit on roads where lots of people are walking.

The evaluation recommended integrating speed management with urban planning to improve both road safety and liveability. It also recommended that program guidelines are updated to allow implementation in different road environments, while also providing consistent cues to road users.

Table 1. Crash reductions over time by crash type and area

Crash type (years compared)	HPAA 40 km/h zones (% reduction)	Other permanent 40 km/h zones (% reduction)	Other NSW urban 40/50/60 km/h zones ^a (% reduction)
All crashes (2002–2014)	40%*	35%	28%
Casualty crashes (2002–2015)	38%*	30%	20%
Pedestrian casualty crashes (2002–2015)	49%	46%	46%
Serious casualty crashes (2005–2015) ^b	33%*	11%	4%
Pedestrian serious casualty crashes (2005–2015) ^b	46%*	23%	19%

^a Crashes identified by Police as occurring in a 40 km/h speed limit, which were not in identified HPAA or permanent 40 km/h zones, were included in this group. This includes school zones and roadwork zones.

^b Serious injury data were only available from 2005 onwards.

* Reduction is statistically significantly greater than reduction on comparable 40/50/60 km/h roads in the rest of NSW (chi-square test at 5% level).

Program Changes

Expanding implementation of permanent 40 km/h speed limits in NSW will be considered in light of these findings. HPAA program guidelines will be revised to allow flexible implementation in different road environments while also providing clear cues for road users.

References

Wilkinson, R., Barnes, B., Walker, E. 2016. Maximising the impact of evaluation in road safety. Australasian Road Safety Conference, Canberra, 2016. Available at: <http://acrs.org.au/publications/acrs-conference-papers/acrs-database/>