

# Public Perceptions of Fixed Digital Speed Cameras in New South Wales

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## Biography

David Walsh is a consultant with the NSW Roads and Traffic Authority. He is working on the NSW Alcohol Interlock Program and the Evaluation of the Fixed, Digital Speed Camera Program. David has a background in the field of alcohol and other drugs, road user behaviour and school-based road safety education where he has worked for the past 12 years for both private and public sectors mainly in project management, policy development, research and program evaluation.

## Abstract

In July 2000 the New South Wales Road and Traffic Authority commissioned a major evaluation of its Fixed Digital Speed Camera Program. The evaluation was designed to measure the effectiveness of the Program in relation to the incidence of crashes, driver speed behaviour and community attitudes and awareness of the use of cameras and the Fixed Digital Speed Camera Program. This paper focuses on the community attitude survey component of the evaluation. A telephone survey was conducted at four times during the evaluation, September 2000, April 2001, September 2001 and September 2002. Each wave of the study included a random sample of 750 motorists from specifically defined locations, and a booster sample of 50 professional drivers from Greater Sydney. The aim of the survey was to establish community perceptions towards fixed digital speed cameras and to identify changes in attitudes and behaviours over time. Awareness of the fixed digital speed cameras grew from 64 per cent at Wave I to 82 per cent at Wave IV, and from 72 per cent in Wave I to 92 per cent in Wave IV for the booster sample. Across the four waves the incidence of respondents attributing speed cameras to revenue raising remained relatively static (15% – 25%). Most motorists continued to see fixed digital speed cameras as having a legitimate role including reduce speeding (60%) prevent crashes (27%) and improve road safety (20%). Overall the results indicate that motorists viewed the NSW Fixed Digital Speed Camera Program as an effective road safety countermeasure.

## INTRODUCTION

Speed is the greatest contributing factor in road trauma on NSW roads. For the five-year period 1998 – 2002 there were 1,194 people killed and 23,453 people injured in speed-related crashes. The cost to the community for these crashes was in excess of \$3.3 billion dollars (RTA 2003).

A key speed management strategy by the NSW Roads and Traffic Authority (RTA) to reduce crash risk and crash severity at black spot locations was the implementation of the Fixed Digital Speed Camera Program in 1999.

In July 2000 an extensive three-year evaluation of the program commenced. The evaluation comprised crash analyses, speed surveys and community attitude surveys. This paper reports on the community attitude survey component of the evaluation.

The community attitude surveys were conducted to:

- Establish community perceptions and attitudes to the fixed digital speed cameras.
- Measure the incidence of respondents' attitudes and behaviours.
- Identify changes over time in perceptions, attitudes and behaviours.

## **METHOD**

A 27-item questionnaire was developed from focus group discussions in Sydney, Newcastle, Central Coast and Armidale, and pre-testing and piloting, for administration of a telephone survey. A random sample of 750 motorists within specifically defined geographic locations was obtained along with a booster sample of 50 professional drivers in Greater Sydney. The booster sample of professional drivers drove as part of their job most days. The booster sample, when added to the sub-sample in the main random sample resulted in a sub-sample of people who drive all day/every day in excess of 100 in each wave who were highly exposed drivers.

The sample comprised 510 respondents from metropolitan areas (400 from Sydney, 60 from Newcastle, 50 from Wollongong) and 240 non-metropolitan areas, 40 from each of Maitland, Armidale, Port Macquarie, Lithgow, Gosford, and Gundagai. In each geographic location the random sample was intended to be representative of the population of motorists in that region. For example, the Sydney sample is representative of motorists living in the urban area of Sydney.

The sample selection process was designed to optimise the inclusion of both an exposed and unexposed sub-sample. In the case of Sydney, in particular, it was likely motorists could be exposed to a number of fixed digital speed cameras. At the time of the Wave IV survey exposure could also have involved multiple sites, Newcastle, Wollongong, Central Coast, Coolac/Gundagai/Tarcutta, Lithgow/Kurrajong. For the remaining geographic locations there was only one site within reasonable proximity. It is important to note that western NSW was not included in the sampling process and therefore when the findings are discussed and refer to community attitudes they specifically refer to the attitudes of individuals from the randomly sampled populations within the specific locations.

The questionnaire was administered as a telephone survey at the following four times, Wave I, 4 – 24 September 2000; Wave II, 26 March to 2 April 2001; Wave III, 18 to 26 September 2001; and Wave IV, 6 – 14 September 2002.

## **RESULTS**

There was a high awareness level of the fixed digital speed cameras at Wave I despite there only being 10 cameras installed. Awareness of the fixed digital speed cameras increased substantially with each of the four survey waves for the random sample (64% – 82%), and for the booster sample (72% – 92 %).

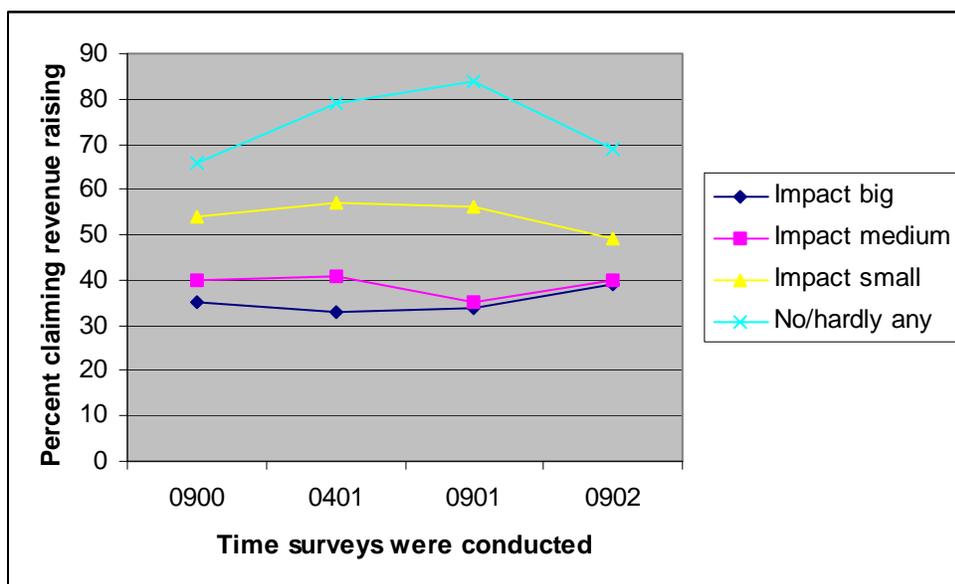
The respondents' most frequent unprompted reasons for fixed digital speed cameras and their locations were speeding, crashes and road safety, and these reasons remained relatively unchanged for the four survey waves (Speeding 54 – 55%, Crashes 27 – 30%, Road Safety 24 – 31%).

Respondents' expectations of the cameras increased significantly between Waves I and II (50 – 49%) and Waves III and IV (55 – 57%) believing the cameras would have a 'big' or 'medium' impact on crashes.

The incidence of respondents who associated fixed digital speed cameras with revenue raising was small and relatively static for the four survey waves (15% – 25%).

The perception of speeding tickets issued (as a result of fixed digital speed cameras) as primarily revenue raising, rather than a road safety countermeasure, changed only slightly over the four waves, hovering around 45 per cent (45% Wave I, 47% Wave II, 44% Wave III, 45% Wave IV). Similarly, the incidence of 'uncertain' responses showed little change. At Wave I the booster sample of professional drivers were most likely to believe speeding tickets resulting from fixed digital speed cameras were primarily revenue raising (76%). This finding declined to 56 per cent for Wave II and remained at this level for Waves III and IV.

In each of the four Waves at least one third of respondents who believed fixed digital speed cameras were 'very' effective also saw speeding tickets as 'primarily revenue raising' (Figure 1).



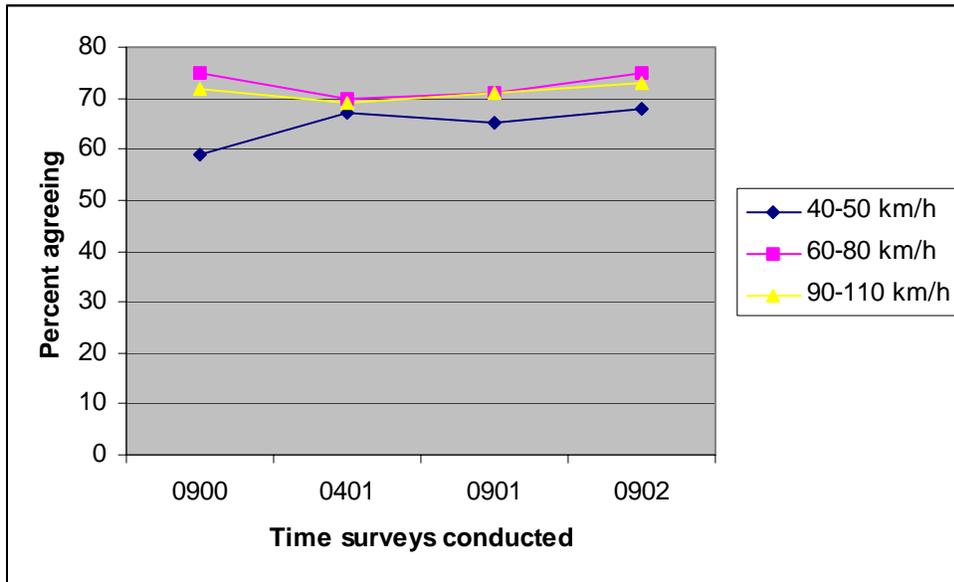
**Figure 1: Relationship between attributing revenue raising rather than road safety and beliefs about the impact of road safety**

In addition, of respondents aware of someone who had been booked by a fixed digital speed camera in all four waves most believed the cameras were a deterrent to speeding or were used for detecting speeding motorists in the interests of road safety rather than for collecting revenue and this increased to 47 per cent in Wave IV (Table 2).

**Table 2: Fixed digital speed camera booking primarily road safety or revenue raising**

	Random sample			
	Sept-00	Apr-01	Sept-01	Sept-02
<b>Attribution</b>	%	%	%	%
Revenue	38	38	36	38
Road safety	42	42	47	47
Both	9	9	8	8
Don't know	11	11	9	7
Total	100	100	100	100

The majority of respondents agreed with fixed digital speed cameras being used, but most preferred them to be in higher speed zones (60 km/h – 110 km/h) (Figure 2). There was a substantial decrease (56 – 32% Waves I – IV) in booster sample agreement for cameras to be placed in 40 and 50 km/h zones.



**Figure 2: Agreement with the use of fixed digital speed cameras**

Most respondents reported that when they see a fixed digital speed camera warning sign they check the speedometer (78%, Wave IV) and drive at the speed limit (62%, Wave IV), 37 per cent reported, at Wave IV, (up from 22% at Wave I) they drive at a speed lower than the limit while 9 per cent (down from 15% at Wave I) reported lowering their speed but driving slightly above the limit. Only 1 per cent in all waves reported ignoring the sign and maintaining their speed over the limit. These findings were similar at each wave for all categories except 'drive at a speed lower than the limit' which increased from 22 per cent at Wave I to 37 per cent at Wave IV.

In contrast, whilst only 1 per cent believed they ignored signage and maintained their speed over the limit, they claimed that that was the behaviour of other drivers (Wave I, 22%, Wave II, 18%, Wave III, 14%, Wave IV, 15%). Furthermore, the proportion of respondents who claimed that other drivers reduce their speed and drive below the limit increased across the four waves (23% at Wave I – 38% at Wave IV).

Respondents' perceptions of being detected by a Police officer for speeding were quite low. The mean risk score for the four waves remained stable at slightly less than five out of 10 (Wave I, 4.58; Wave II, 4.82; Wave III, 4.69; Wave IV, 4.69).

Only 5 to 7 per cent of respondents across all waves reported fixed digital speed cameras as having no advantage; and for the booster sample this percentage decreased from 16 per cent at Wave I to 2 per cent at Wave IV. A substantial proportion (59 – 60%) of respondents (in each of the four waves) believed fixed digital speed cameras reduce speeding. Similarly, almost a third of respondents across all four waves believed fixed digital speed cameras prevented crashes. The proportion of respondents reporting fixed digital speed cameras 'improve road safety' increased from 9 per cent at Wave I to 20 per cent at Wave IV and for the booster sample, 4 per cent at Wave I to 32 per cent at Wave IV.

The proportion of respondents reporting that there were 'no drawbacks' to fixed digital speed cameras decreased from 47 per cent at Wave I to 38 per cent at Wave IV. Of all the drawbacks volunteered no one point was mentioned by more than 12 per cent of the random sample of respondents across all four-survey waves.

A consistent significant minority of respondents (40%) in each wave believed people should not go to gaol for speeding excessively or repeatedly. A slight majority in each wave (53 – 54%)

believed people should be gaoled for speeding excessively or repeatedly and the remainder 6 – 7 per cent were uncertain.

Respondents over all perceived fixed digital speed cameras as having some impact on reducing crashes and speeds. The modal perception was for a medium level of impact on speeds with the average on the 'small' side of 'medium'. Exposure did not appear to influence respondents' perceptions of their overall assessment of the fixed digital speed cameras' impact on speed; the incidence of respondents believing a 'big/medium' impact remained largely unchanged (Wave I, 68%, Wave II, 65%, Wave III, 66%, Wave IV, 65%). In comparing speed with crashes the findings suggest respondents expect fixed digital speed cameras to be more effective in reducing speeds than crashes Table 2.

**Table 2: Comparison of impact speed versus crashes**

Impact		On speed				On crashes		
		Actual		Expected		Actual		Expected
		Sept-00	Sept-02			Sept-00	Sept-02	
Big	(4)	20	26	20	(3)	16	18	25
Medium	(3)	48	39	20	(2)	38	35	25
Small	(2)	19	22	20	(1)	29	31	25
Hardly any	(1)	9	9	20	-		-	
None	(0)	3	3	20	(0)	12	12	25
Don't know		1	2	-		5	4	-
Total		100	100	100		100	100	100

## DISCUSSION

In the two-year period of the community attitude survey, implementation of fixed digital speed cameras increased from 10 to 35 across NSW. From the beginning of the study community awareness of fixed digital speed cameras was high and continued to rise with increased implementation of fixed digital speed cameras. These findings suggest that the RTA's public education strategies for this program were highly effective.

The community has a positive attitude towards fixed digital speed cameras with respondents more likely to associate the fixed digital speed cameras and their locations with speeding, crashes and road safety rather than revenue raising. The use of fixed digital speed cameras received strong acceptance from the respondents with a preference for them in higher rather than lower speed zones.

The relationship between the perceived effectiveness of fixed digital speed cameras and their association with revenue raising compared to road safety is complex. A substantial proportion of the community believe the fixed digital speed cameras are very effective, but the speeding tickets (issued as a result of fixed digital speed cameras) are primarily revenue raising. This paradox needs to be addressed. Fixed digital speed cameras are based at black spots using stringent criteria, yet a substantial proportion of the community whilst conceding that they are effective are not convinced that the main motive is not to raise revenue.

A similar proportion of respondents believed people who speed excessively or repeatedly should not go to gaol. This issue also needs to be addressed as these findings suggest a substantial proportion of the community do not view speeding as dangerous or as serious as drink driving. Factors that may contribute to this belief include the media's role in encouraging speeding such as informing motorists of locations where police are conducting enforcement, car advertisements that portray speed as sexy and desirable, despite this not being permitted by the

advertising code, and, as this study found, the community's perception of being detected by police for speeding is low.

The Fixed Digital Speed Camera Program appears to have had an impact on influencing driver behaviour with most respondents slowing down at the fixed digital speed camera sites. This conclusion is reinforced by the increase in the incidence of respondents (across the four waves) claiming most other drivers reduce their speed below the limit on sighting fixed digital speed camera warning signs. Although, paradoxically, while only one per cent of respondents claimed to have ignored the warning signs and maintained their speed over the speed limit at fixed digital speed camera sites, a substantial proportion claimed that this was the behaviour of other drivers. A possible explanation for this finding is that drivers tend not to admit to speeding, but overestimate the proportion of drivers who do speed as has been found by, Manstead, Parker, Stradling, Reason and Baxter, 1992; Aberg, Larsen, Glad and Beilinson, 1997; Walton & Bathurst, 1998; Haglund and Aberg, 2000; and Elliott, 2001; cited in Elliott, 2003.

The bulk of respondents perceived fixed digital speed cameras as having a legitimate role as a road safety countermeasure. In particular, in reducing speeding and preventing crashes. These findings revealed that with greater exposure to the fixed digital speed cameras respondents' perceptions of the fixed digital speed cameras improving road safety increased.

This study was limited by its restriction and weighting for the specific geographic locations outside metropolitan Sydney. These locations were given equal weightings of N=40 for each sample, whereas the sample for Newcastle was N=60, Wollongong N=50 and Sydney N=400. The non-metropolitan locations were chosen because, at the time the study commenced, only 25 cameras were planned for NSW and the aim of the study was to evaluate changes in community attitudes, crashes and speeding behaviour over time due to exposure to fixed digital speed cameras in the chosen geographic locations.

## **CONCLUSION**

Overall, respondents had positive attitudes towards the fixed digital speed camera program, were well aware of the initiative, had realistic expectations of the program and believe fixed digital speed cameras are an effective road safety countermeasure. Further research is required in the areas of community attitudes towards infringements from fixed digital speed cameras and the community's perception of the seriousness of speeding.

## **Acknowledgements**

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## **Key Words**

Speed cameras, community attitudes

## **References**

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