



Transport  
Centre for  
Road Safety

# CRASH ANALYSIS OF THE NSW FIXED SPEED CAMERA PROGRAM

**MAY 2011**



# Crash Analysis of the NSW Fixed Speed Camera Program

## Overview

In NSW fixed speed cameras were first introduced in 1997 in the Sydney Harbour Tunnel. As technology became more advanced, digital speed cameras were introduced from 1999 and gradually replaced wet-film cameras. There are currently 172 fixed speed cameras operating in 141 locations throughout NSW, with 65 of these cameras located in 44 school zones. The installation of all NSW fixed speed cameras meet specific site selection criteria.

A previous independent evaluation of the NSW Fixed Speed Camera Program demonstrated significant reductions in vehicle speeds (a 6km/h drop both 12 and 24 months after installation), percentage of vehicles exceeding the speed limit (approximately 70% reductions), injury crashes (20% along camera-installed blacklengths), and fatal crashes (approximately 90% along camera-installed blacklengths) (ARRB Group, 2005).

This report presents findings from a further detailed crash based review of NSW fixed speed camera locations conducted by the NSW Centre for Road Safety.

## Summary of Findings

Overall, the current analysis demonstrates the effectiveness of fixed speed cameras in achieving crash and casualty reductions on NSW roads.

The current analysis was conducted for 128 fixed speed camera locations throughout NSW (excluding five tunnel locations, six deactivated sites, and two locations on a substantially re-aligned section of road). The current analysis examined crash data for the three-year period before and the three-year period after implementation of each fixed speed camera for 500 metres either side of non-school zone cameras or patch-to-patch for all school zone cameras<sup>1</sup>. This before analysis was different to the original crash length analysis undertaken to identify fixed speed camera locations. The present analysis employs a shorter length resulting in lower crash numbers in the before period. The shorter length has been employed following our own recent research findings that demonstrate that speed reductions are observed only for a 500 metre distance either side of a fixed speed camera (known as a “halo effect”).

The current analysis demonstrates a 26% reduction in both total crashes and the total number of casualties across all 128 fixed speed cameras locations (including a 67% reduction in fatalities), with the vast majority of locations showing sustained crash and casualty reductions over time. These findings support the previous evaluation of the NSW Fixed Speed Camera Program (ARRB Group, 2005). The 24 lives and 412 injuries saved as a result of the NSW fixed speed camera program amounts to an estimated community saving of around \$186 million (based on the willingness-to-pay

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<sup>1</sup> “Patch-to-patch” refers to the length of road designated as a school zone, as identified by the start and end patches marked on the road.

methodology). The collective saving to the community is likely to be substantially greater than this estimate given that many cameras have been operational for more than a decade, and given the likely general deterrence effect achieved as motorists change their driving behaviour over a sustained period more broadly throughout the road network.

Overall, 98 of the 128 NSW fixed speed camera locations able to be analysed demonstrate clear road safety benefits (77% of all locations).

However, some fixed speed camera locations did not show clear road safety benefits in the immediate vicinity of the cameras. Based on the current analysis, 15 of 141 locations were recommended for relocation (11%), while a further 22 of 141 locations were recommended for further consultation and/or review (16%). Cameras at these locations will be further reviewed before a decision is made either to keep the camera in operation or to relocate the camera to an alternative location with a greater likelihood of road safety benefit, based on crash history. This review will involve consideration of factors such as changes in traffic volume and local community consultation. This process will give the community assurance that all fixed speed cameras in use in NSW are deployed for road safety and are delivering a road safety benefit.

### **Site Selection Criteria for Fixed Speed Cameras**

Fixed speed cameras are installed to reduce speeding and are installed in locations that meet specific criteria. The RTA Fixed Speed Camera Site Selection Criteria were developed by the RTA in consultation with the NSW Police Force and NRMA Motoring and Services. These criteria are based on fatal and injury crash rates and travelling speeds which ensures that cameras are installed on road lengths with a high crash rate where there is a significant speeding problem.

Fixed speed camera locations in NSW were originally identified employing one of the following four site selection criteria:

1. Blacklength Criteria
2. Rural Bends Criteria
3. School Zones Criteria
4. High Risk Criteria

Assessment of locations for fixed speed cameras should be based on homogenous sections with the minimum length of road assessed for these criteria being 1 kilometre. Sites should not be located within 300 metres of a speed zone change.

Fixed speed camera locations also need to meet operational requirements such as the availability of electricity and communications and appropriate site configuration.

## 1. Blacklength Criteria

### *Crashes*

Road Type	Crash Criterion 1 Crash Rate (per hundred million vehicle kilometres)	Crash Criterion 2 Casualty Crashes (per kilometre per year)
Rural	>40	>0.5
Urban	>80	>0.5
Divided (Freeway / Motorway) *	>25	>0.5

**Note:** A separate crash analysis is carried out for each direction of flow. This may result in installation being for one direction only.

The latest three years crash history should be used except where major works or changes to speed limits have been undertaken during this period. In such cases, crashes should reflect the period since the work or change was completed with a minimum study period of 1 year.

### *Speed*

Each site will have to meet the following Speed Criterion A or Speed Criterion B:

- Speed Criterion A – Speed profiles which show 85th percentile speeds<sup>2</sup> are in excess of 10% above the posted speed limit.
- Speed Criterion B – Mean speeds are in excess of the posted speed limit.

## 2. Rural Bends Criteria

If a rural site does not meet the above criteria, it can be considered eligible if the site meets the following specific rural criteria.

### *Crashes*

Road Type	Criterion 1 Crash Rate (per hundred million vehicle kms)	Criterion 2 Casualties per kilometre per year
Rural	>40	>0.5

**Note:** There should be a minimum of Annual Average Daily Traffic of 2000 vehicles per day.

### *Speed*

The speed measured from the 7-day, 24-hour speed survey must meet the following Speed Criterion A or Speed Criterion B:

- Speed Criterion A – the 95th percentile speed is in excess of the speed limit plus 10%, or
- Speed Criterion B – the 85th percentile speed is greater than the posted speed limit.

### *Site Alignment*

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<sup>2</sup> The speed which 15% of vehicles exceed in the absence of congestion

The blacklength must comprise a curve or series of curves, with a radius that warrants advisory speed signs, with enhanced delineation, or advisory speed sign is displayed.

### 3. School Zones Criteria

The following criteria should be met before a site is considered suitable for a fixed speed camera.

Where a school is bounded by more than one road, a single length of road must be selected which includes a school 40 km/h zone. That length will be the one that will achieve the maximum road safety benefit from the installation of a fixed speed camera around the school. That length must also meet the following:

- The number of crashes along the selected road within the school zone must exceed 10 crashes for a 3 year period and include at least one crash in school zone times and
- The Annual Average Daily Traffic (AADT) volume must exceed 10,000 and
- There must be potential for conflict between pedestrians and vehicles during school zone times within the 40 km/h school zone

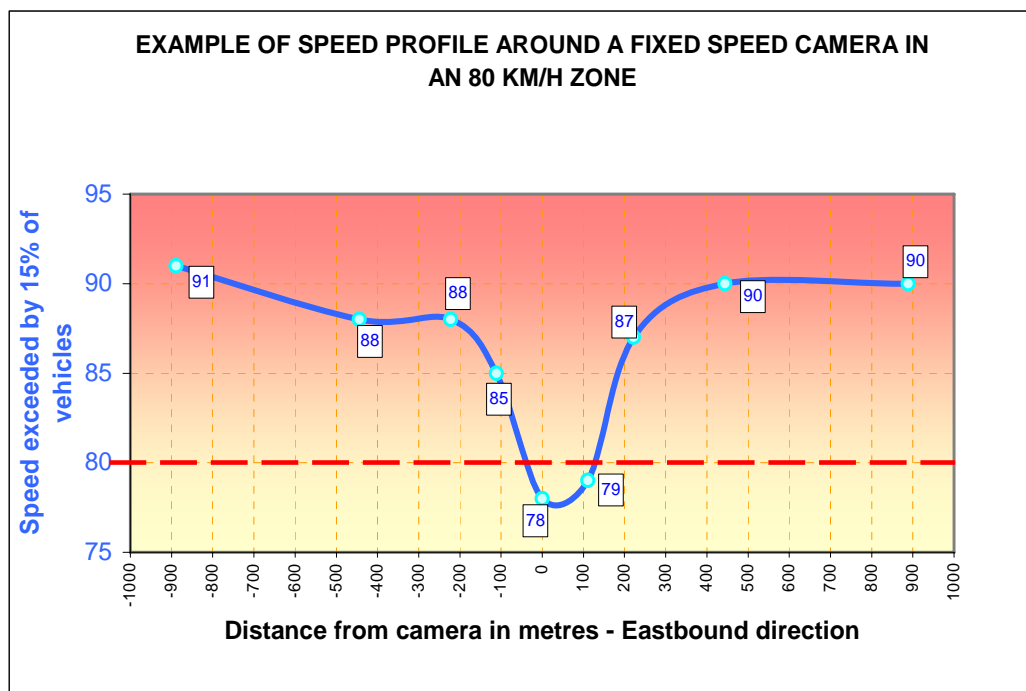
### 4. High Risk Criteria

Fixed speed cameras have also been implemented in high risk locations where traditional police enforcement cannot be conducted, and where a serious or fatal crash would result in significant difficulties of access by ambulance and emergency vehicles to the crash site. Typically, these are installed in locations such as tunnels, where any crash would have potentially catastrophic consequences.

## **Difference in Approach Between Current Analysis and Original Crash Length Analysis**

The majority of fixed speed cameras were introduced in NSW in the late 1990s, and research evidence at this time demonstrated that the effects of speed cameras would extend to between 4km and 10km from the speed camera site (e.g. Makinen & Oei, 1992). Thus, in order to treat identified blacklengths, rather than being placed within the actual blacklength, fixed speed cameras were sometimes placed adjacent to, or some distance away from, the identified blacklength, in order to obtain a suitable site for the camera.

More recent international research, however, has shown that the effects of fixed speed cameras are limited to an approximate 1,000 metre total length around the camera (e.g. Christie, Lyon, Dunstan & Jones, 2003; Hess, 2004; Keenan, 2002). This effect is shown in the below graph, based on speed survey analysis conducted by the RTA, which highlights that the largest speed reductions are observed for the closest 500 metres around the camera. This sustained effect of enforcement adjacent to the operational speed enforcement location is now commonly known as a “halo effect” (Christie et al., 2003; Hess, 2004).



Based on this more recent international and national research evidence, the current analysis examines crash data before and after implementation of each fixed speed camera for 500 metres either side of non-school zone locations (1,000 metre total length around the operational camera location), or patch-to-patch for all school zone locations, which in most cases equates to a smaller total length around the camera (489 metre average).

Therefore, a number of NSW fixed speed camera locations indicate a low number of crashes in the before period based on the current analysis, because this analysis is different to the original crash length analysis undertaken prior to camera implementation. More specifically, this may have occurred for one of the following reasons:

1. The original blacklength that was analysed is sometimes considerably longer than the 1,000 metres employed for the current analysis.
2. The speed camera is sometimes located just outside the original blacklength. For these cases, there is minimal overlap between the original blacklength and the current length that is analysed. The original rationale for this was that the speed camera would slow vehicles prior to entering the blacklength, and therefore have an impact on this section of road.
3. In some instances, there is a temporal difference between the three-year before period for site selection (conducted before the time at which the camera was approved) and the three-year before period for the current analysis (conducted up to the time at which the camera was installed and operational).
4. In some instances, the three-year before period for site selection may have been subject to an approximate 9-month lag on finalised crash and casualty data, whereas a retrospective analysis can be conducted on finalised data for the three-year period up to the start date of operation (employed for the current analysis).

5. The identification of some of the earliest fixed speed camera locations was based on crash analysis over a five-year data period.

The following examples present more detailed commentary on two particular NSW fixed speed camera locations, highlighting reasons for the observed difference in crash data based on the difference between the current analysis and the original crash length analysis.

#### New England Highway, Blandford (April, 2002)

This location is an example where the original blacklength was considerably longer than the length of road currently analysed, at 3,900 metres in length. Over the three-year crash analysis period for the original blacklength, there were 16 crashes resulting in 2 fatalities and 14 injuries. The current analysis (1,000 metres around the camera) indicates there were 3 crashes resulting in 3 injuries in the before period and 2 crashes resulting in 1 injury in the after period.

#### Woy Woy Road, Kariong (March, 2000)

This is an example where the speed camera was located outside the blacklength. The speed camera was placed around 400 metres south-east of the identified blacklength, in order to slow drivers proceeding in a north-westerly direction along Woy Woy Road. In addition, the blacklength was much longer than the length of road currently analysed, at 2,500 metres in length. For these reasons, the current analysis has minimal overlap with the original blacklength analysis. For this original blacklength, there were 101 crashes resulting in 3 fatalities and 48 injuries over a five year analysis period. The current analysis shows 2 crashes resulting in no injuries or fatalities in the before period and 1 crash resulting in 1 injury after the camera was installed.

### **Additional Technical Notes for the Current Analysis**

1. The current crash analysis is based predominantly on the underlying textual description of the crash. Basing the analysis solely on a spatial buffer may be flawed due to inaccurate geo-coding, and given that some road centrelines have moved over the past 14 years.
2. **Note** that the current analysis has been conducted by location, rather than by camera. There are currently a total of 172 fixed speed cameras operating in 141 locations throughout NSW. Therefore, in some instances, there is more than one fixed speed camera operating at the one location. One of these locations (F6, Gwynneville) has two cameras operating approximately 1,000 metres apart, and infringing in different directions, therefore these cameras were directionally analysed as separate locations. Another location (Spit Road, Beauty Point/The Spit) has two cameras operating approximately 500 metres apart in opposite directions, therefore this was analysed as one location with a longer total length of 1,500 metres including both cameras. For all other locations with more than one camera in operation (where cameras are less than 100 metres apart), the crash analysis length was for 500 metres either side of the mid-point of the two cameras.

3. The commencement date listed for each location refers to the month and year that the fixed speed camera commenced infringement at that location. For locations where more than one fixed speed camera is in operation, the date listed refers to the month and year that the *first camera* started infringing at that location.
4. For each location, the 'before' and 'after' periods vary depending on the date the camera commenced infringement, and excluded the 3-month period directly before the commencement date. For each location, the 'before' period was defined as the 3-year period up to 3 months prior to the commencement date of camera infringements, and the 'after' period was defined as the 3-year period from the commencement date of infringement.
5. Analysis of some recently-installed school zone locations was necessarily based on shorter before and after time periods (i.e. one-year or two-year periods).
6. Locations for which cameras were installed based on the high risk criteria have not been analysed because these locations have no before data for analysis (typically tunnel locations).
7. Crashes with unknown location information, or identified as occurring on ramps (e.g. access ramps to interchanges) have been excluded from the current analysis.
8. Rather than provide average annual figures for all available years, data presented above are aggregated figures for three-year before and after periods.
9. These data do not take into account factors such as change in traffic volume, general trends, and regression to the mean. These may result in crash and casualty changes independent of the effect of fixed speed cameras, although it is unclear how the effect of some of these factors could be controlled given that fixed speed camera locations are blacklengths based on crash criteria.
10. Data for the following crash analysis have not been ranked or presented in any particular order.
11. If camera locations shown to be not effective are omitted from this analysis, combined results would demonstrate much more pronounced positive road safety effects, which emphasises the location-to-location variability likely to be found in the complete analysis.

### **Criteria for Recommendations Based on the Current Analysis**

Along with before-and-after crash analysis of NSW fixed speed camera locations, the current report lists a recommendation for each location based on the current analysis. One of the following five recommendations is listed for each location:

- Effective



- Relocate Pending Review
- Relocate Pending Consultation and Review
- Relocate
- Relocate – Already Deactivated

It should be noted that, between 2004 and 2007, the amount of vehicle travel in NSW has increased by almost 7% (Australian Bureau of Statistics, 2008), and this increase in travel has been estimated to continue<sup>3</sup>. So, including these data as the before period, vehicle travel in NSW could be expected to increase by around 14% over a recent six-year period. Based on this general increase in vehicle travel across the state, the number of vehicles passing a fixed speed camera location is likely to be increased significantly. Thus, safety improvements may be cancelled out by increased exposure. These location-specific factors could only be assessed following a closer review of the actual fixed speed camera location.

#### Locations Listed as Effective

Fixed speed camera locations have been classified as being effective if the current crash analysis satisfies any one of the following criteria:

1. There is a lower number of total casualties and the same or lower number of crashes in the after period compared to the before period, and no fatalities in the after period.
2. There is the same number of total casualties but a lower number of total crashes in the after period compared to the before period, and no fatalities in the after period.
3. If there was at least one fatality in the before or after period, the combined cost to the community of fatalities and injuries in the after period is less than the combined cost in the before period. This acknowledges the greater cost to the community of fatalities compared to injuries. The estimated cost of road crash casualties is calculated using the willingness to pay methodology, which reflects the accumulated value the NSW community is willing to pay or forgo in exchange for a reduction in the probability of crash related injuries and road crash deaths on NSW roads. According to willingness to pay, casualty costs are \$5.834 million per fatality, and \$0.078 million per injury (Roads and Traffic Authority, 2009).
4. Fixed speed cameras have been installed in tunnels and other areas under the “high risk” Site Selection Criteria. For these locations, there are no available data in the before period due to there being no crash history prior to camera implementation. However, any crash that occurs in these areas would have potentially catastrophic consequences due to difficulties of access by ambulance and emergency vehicles to the crash site.

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<sup>3</sup> The latest release of the Australian Bureau of Statistics “Survey of Motor Vehicle Use” is for the period up to 31 October 2007. Data for 2008 are provided in the Australian Bureau of Statistics publication “Experimental Estimates of Motor Vehicle Use”; however, these data are estimated directly from 2007 figures. Nonetheless, an increasing trend in vehicle travel in NSW is estimated.

### Locations Listed for “Relocate Pending Review”

Fixed speed camera locations have been listed as “relocate pending review” if the current crash analysis satisfies any one of the following criteria:

1. There is a higher number of total casualties but a lower number of total crashes in the after period compared to the before period, and no fatalities in the after period.
2. There is a slightly lower number of total casualties but a higher number of total crashes in the after period compared to the before period, and no fatalities in the after period.
3. There is the same number of total casualties, and the same number of total crashes, in both before and after periods (and no fatalities in the after period).
4. If there was at least one fatality in the after period, the combined cost to the community of fatalities and injuries in the after period is greater than the combined cost in the before period. This acknowledges the greater cost to the community of fatalities compared to injuries (with calculations based on the willingness to pay methodology, as already outlined).

The review of fixed speed camera locations will employ guidelines that consider factors such as changes in traffic volume and local community consultation. These guidelines for review are outlined in a later section of this report.

### Locations Listed for “Relocate Pending Consultation and Review”

School zone fixed speed camera locations have been listed as “relocate pending consultation and review” if the current crash analysis satisfies either one of the following criteria:

1. There is a higher number of total casualties in the after period compared to the before period, and no fatalities in the after period.
2. If there was at least one fatality in the after period, the combined cost to the community of fatalities and injuries in the after period is greater than the combined cost in the before period.

Note that analysis of some recently-installed school zone locations was necessarily based on shorter before and after time periods (i.e. one-year or two-year periods). Therefore, recommendations for these locations should be made only after more finalised data are included in the analysis for each location. As a result, “More Data Needed” has been noted for these locations.

For these school zone fixed speed camera locations, consultation with relevant local school communities will take place before any decision is made to relocate school zone cameras.

The review of fixed speed camera locations will employ guidelines that consider factors such as changes in traffic volume and local community consultation. These guidelines for review are outlined in a later section of this report. Additionally for school zone locations, analysis of pedestrian crashes and casualties during school zone times will be undertaken before any decision is made to relocate school zone cameras.

### Locations Listed to “Relocate”

Non-school zone fixed speed camera locations have been recommended to “relocate” without review if the location satisfies either one of the following criteria:

1. There is a higher number of both total casualties and total crashes in the after period compared to the before period.
2. Major road works such as curve re-alignment or highway duplication have significantly improved safety at the existing location.

A number of sites that fall into this criterion have already been deactivated because major road works such as curve re-alignment or highway duplication have significantly improved the location.

### Locations Listed to “Relocate – Already Deactivated”

Fixed speed camera locations have been listed as “relocate – already deactivated” if the speed camera has already been deactivated because major road works such as curve re-alignment or highway duplication have significantly improved the location.

### Exception to the Above Criteria

An exception to the criteria outlined above was made for one fixed speed camera location: the Sydney-Newcastle F3 Freeway, Bar Point. This location originally had a 90km/h speed limit; however, the speed limit was increased to 100km/h, with an enforced 90km/h wet weather speed limit. Based on crash data only, it appears that crashes at this location have increased since the speed limit was raised to 100km/h, and that the trial of a 90km/h wet weather speed limit has not been successful. However, due to the increase in speed limit, it is not clear if the speed camera is effective or not at this location.

### **Current Crash Analysis**

The current crash analysis is conducted for 128 fixed speed camera locations throughout NSW (excluding five tunnel locations, six deactivated sites, and two locations on a substantially re-aligned section of road).

Based on the current analysis, over the three-year period before fixed speed cameras started infringing there was a total of 3,053 crashes across all 128 locations, resulting in 36 fatalities and 1,625 injuries. In the three-year period after fixed speed camera infringement commenced at these locations, there were 2,257 crashes across all 128 locations, resulting in 12 fatalities and 1,213 injuries. This equates to 24 lives and 412 injuries saved as a result of the NSW fixed speed camera program, representing a 26% reduction in both total crashes and total casualties across all 129 fixed speed cameras locations (including a 67% reduction in fatalities). These casualty savings amount to an estimated community saving of around \$186 million (based on the willingness-to-pay methodology). The collective saving to the community is likely to be substantially greater than this estimate given that many cameras have been operational for more than a decade.

Overall, the current analysis demonstrates the effectiveness of fixed speed cameras in achieving crash and casualty reductions on NSW roads. These findings support the previous evaluation of the NSW Fixed Speed Camera Program (ARRB Group, 2005), which found a comparable 23% reduction in casualty crashes at treated blacklength locations.

The most encouraging aspect of these findings is that the vast majority of fixed speed camera locations have demonstrated sustained crash and casualty reductions over time. For example, in the three years before a fixed speed camera commenced enforcement at Great Western Highway, Valley Heights, there were 27 crashes resulting in 2 fatalities and 10 injuries. In the three years after the camera commenced enforcement at this location there were only 8 crashes resulting in 4 injuries (and no fatalities). At Bexley Road, Bexley North, there were 35 crashes resulting in 1 fatality and 27 injuries in the three years before a fixed speed camera commenced enforcement, compared to 20 crashes resulting in 16 injuries (and no fatalities) in the three years after the camera commenced enforcement at this location.

### **Guidelines for the Review of Fixed Speed Camera Locations**

Despite the overall positive findings, some fixed speed camera locations did not show clear road safety benefits. These locations have been listed in the results table as either requiring “review” or “remove or relocate”, based on the criteria outlined previously. While some locations have not shown a clear road safety benefit, a further review should be conducted for a range of possible reasons. For example, the traffic volume may have increased yet there has only been a small increase in crashes or casualties. In this case it may be considered that the camera has been effective.

This further review will enable a decision to be made to either maintain operation of the camera at this location or to relocate the camera to an alternative location with a greater likelihood of road safety benefit, based on crash history. This process will give the community assurance that all fixed speed cameras in use in NSW are deployed for road safety and are delivering a road safety benefit.

It is also recommended that revenue from fixed speed camera enforcement be hypothecated to road safety engineering and speed education programs. This will help address the perception of revenue raising and is a strategy that has been adopted in other Australian jurisdictions.

The review of fixed speed camera locations will involve the following guidelines:

1. Changes in traffic volume at the location will be taken into account (e.g. if a small increase in crashes at a particular fixed speed camera location is commensurate with an increase in traffic volume on the road, then consideration should be given to keeping the camera in operation at this location, possibly in conjunction with additional road safety countermeasures where relevant).

2. Any substantial changes in the nature of usage of the road where the camera is located since introduction of the camera will be identified and taken into account (e.g. if the road has now become a major thoroughfare for the community, consideration should be given to keeping the camera in operation at this location).
3. For school zone fixed speed camera locations, analysis of pedestrian crashes and casualties during school zone times will be undertaken before any decision is made to remove or relocate school zone cameras.
4. For school zone fixed speed camera locations, consultation with relevant local school communities will take place before any decision is made to remove or relocate school zone cameras.
5. Fixed speed camera locations have been identified because of a crash problem at or adjacent to the location. Cameras should only be removed once a targeted program of engineering works is implemented at the camera location, in order to manage the identified road safety risks for that location and the potential risk should a camera be removed (such as increased vehicle speeds). The scale of works required is location-dependent and works for each length will be individually designed and costs estimated. Works will be carefully targeted and designed to reduce the chance of a crash and if a crash occurs, reduce the likelihood of death or injury. It is recommended that these works not only target the camera vicinity but also the originally identified black length.
6. In addition to the current analysis, changes in crash data for the original identified blacklength should be analysed and reviewed. Any alternative engineering treatments implemented for a particular location (identified under point 4 above) should treat both the current analysis length and the original blacklength.
7. Fixed speed camera locations have been identified because of a crash problem at or adjacent to the location. Should a camera be removed from a current fixed speed camera location, both speed and crash data will be monitored at that location in order to manage potential road safety risks associated with camera removal.

## Results Table

The complete before-and-after crash analysis of all 128 fixed speed camera locations is presented in the table below, along with infringement commencement dates, the type of location (e.g. school zone), and the total number of crashes (all degrees of crash) and casualties (fatalities and injuries) in the 3-year period both before and after camera infringement. In addition, this table includes any relevant comments or technical notes about the location, as well as details regarding the original blacklength analysis prior to the cameras installation (the original criteria, the original distance of the blacklength, and original before data regarding numbers of crashes, fatalities and injuries). The table also lists a recommendation for each fixed camera location based on the current analysis, as to whether cameras are effective, should be further reviewed, or should be relocated.

Location (Month and Year Infringing Commenced)	Type of Location	Current Crash Analysis							Relevant Comments or Technical Notes	Original Blacklength Analysis					Recommendation
		Distance (Current Analysis)	3 Years Before			3 Years After				Original Criteria	Original Distance (metres)	Original Before Analysis			
			All Crashes	Fatalities	Injuries	All Crashes	Fatalities	Injuries				All crashes	Fatalities	Injuries	
F3, Ourimbah (December, 2001)	Non-School Zone	1,000m	9	0	5	6	0	1	Camera is south of blacklength, enforcing northbound only	Blacklength	1,200	24	0	16	EFFECTIVE
Pacific Highway, Valla Beach (February, 2002)	Non-School Zone	1,000m	8	0	5	6	0	3		Blacklength	1,300	11	1	11	EFFECTIVE
Bruxner Highway, Alstonville (July, 2002)	Non-School Zone	Road upgrade, no longer effective – Site Deactivated								Blacklength	1,300	16	0	15	RELOCATE – Already Deactivated
Pacific Highway, Hungry Head (November, 2002)	Non-School Zone	1,000m	5	1	2	3	0	0		Blacklength	3,300	33	3	27	EFFECTIVE
New England Highway, Tenterfield (October, 2002)	Non-School Zone	1,000m	6	1	6	2	0	0		Blacklength	1,500	10	3	11	EFFECTIVE
Princes Highway, Broughton (July, 2003)	Non-School Zone	1,000m	4	0	2	4	0	3		Rural Bends	1,100	14	1	9	RELOCATE PENDING REVIEW
Princes Highway, Foxground (May, 2003)	Non-School Zone	1,000m	10	1	9	5	0	6		Rural Bends	1,400	23	2	15	EFFECTIVE
Newcastle Road, Lambton (June, 2000)	Non-School Zone	1,000m	35	0	10	49	0	46		Blacklength	1,100	48	0	16	RELOCATE
Bells Line of Road, Kurrajong (May, 2000)	Non-School Zone	1,000m	8	0	6	3	0	3		Blacklength	1,000	21	0	12	EFFECTIVE
Pacific Highway, Woodburn (March, 2001)	Non-School Zone	1,000m	5	0	3	0	0	0		Blacklength	1,900	23	2	19	EFFECTIVE
Bangalow Road, Clunes (February, 2002)	Non-School Zone	1,000m	1	1	2	7	0	6		Blacklength	1,400	6	1	6	RELOCATE
New England Highway, Kootingal (April, 2003)	Non-School Zone	1,000m	1	0	1	0	0	0		Rural Bends	2,000	8	1	4	EFFECTIVE
New England Highway, Blandford (April, 2002)	Non-School Zone	1,000m	3	0	3	2	0	1		Blacklength	3,900	16	2	14	EFFECTIVE
New England Highway, Scone (April, 2003)	Non-School Zone	1,000m	1	0	0	1	0	0		Blacklength	2,000	27	1	15	RELOCATE PENDING REVIEW
New England Highway, Llangothlin (February, 2003)	Non-School Zone	1,000m	3	0	0	3	0	4		Rural Bends	1,600	6	0	4	RELOCATE PENDING REVIEW
Princes Highway, Angledale (May, 2003)	Non-School Zone	1,000m	1	0	0	1	0	1		Rural Bends	1,000	4	1	4	RELOCATE PENDING REVIEW
Princes Highway, Brogo (May, 2003)	Non-School Zone	1,000m	2	0	1	2	0	0		Blacklength	1,300	5	0	5	EFFECTIVE
Greystanes Road, Greystanes (November,	Non-School Zone	1,000m	23	0	13	15	0	13		Blacklength	1,100	35	0	13	EFFECTIVE

2001)															
New England Highway, Ben Lomond (September, 2003)	Non-School Zone	1,000m	1	1	0	2	0	0		Rural Bends	1,000	8	1	8	EFFECTIVE
Bruxner Highway, Wollongbar (February, 2003)	Non-School Zone	1,000m	7	1	7	5	1	4		Blacklength	1,300	24	1	21	EFFECTIVE
Pacific Highway, Korora (February, 2003)	Non-School Zone	1,000m	12	0	3	3	0	1		Blacklength	1,000	8	0	5	EFFECTIVE
Pacific Highway, Kundabung (February, 2003)	Non-School Zone	1,000m	5	0	1	3	0	2		Blacklength	2,400	14	0	23	RELOCATE PENDING REVIEW
Pacific Highway, Mayfield West (December, 2002)	Non-School Zone	1,000m	53	0	32	34	0	18		Blacklength	3,000	147	0	84	EFFECTIVE
Pacific Highway, Nords Wharf (February, 2003)	Non-School Zone	1,000m	7	0	2	3	0	0		Blacklength	2,900	23	0	7	EFFECTIVE
New England Highway, Murrurundi (April, 2003)	Non-School Zone	1,000m	1	0	0	3	0	1		Blacklength	2,000	6	0	6	RELOCATE
Parramatta Road, Auburn (May, 2002)	Non-School Zone	1,000m	99	0	57	65	0	42		Blacklength	1,300	104	0	42	EFFECTIVE
George Street, South Windsor (November, 2001)	Non-School Zone	1,000m	25	0	16	26	0	13		Blacklength	1,130	35	1	28	EFFECTIVE
Great Western Highway, Valley Heights (April, 2002)	Non-School Zone	1,000m	27	2	10	8	0	4		Blacklength	1,000	38	2	17	EFFECTIVE
Pacific Highway, Macksville (March, 2003)	Non-School Zone	1,000m	5	3	8	3	2	2		Rural Bends	1,300	9	5	12	EFFECTIVE
Terrigal Drive, Terrigal (February, 2003)	Non-School Zone	1,000m	57	0	27	34	0	17		Blacklength	1,000	64	1	27	EFFECTIVE
Princes Highway, Berry (April, 2003)	Non-School Zone	1,000m	6	0	4	4	0	3		Blacklength	1,900	26	0	14	EFFECTIVE
Northcliffe Drive, Warrawong (May, 2003)	Non-School Zone	1,000m	13	0	11	3	0	2		Blacklength	1,100	10	0	13	EFFECTIVE
Princes Highway, Nowra (April, 2003)	Non-School Zone	1,000m	35	0	28	36	2	18		Blacklength	1,500	34	0	22	RELOCATE PENDING REVIEW
New England Highway, Tilbuster (May, 2000)	Non-School Zone	Road substantially upgraded and re-aligned, no longer effective							Improved re-alignment of road on curves	Blacklength	1,100	26	4	15	RELOCATE
Great Western Highway, Hartley (December, 2000)	Non-School Zone	1,000m	6	0	3	1	0	0		Blacklength	2,300	38	1	21	EFFECTIVE
Pacific Highway, Urunga (April, 2001)	Non-School Zone	1,000m	3	0	2	6	0	1		Blacklength	1,400	14	0	12	RELOCATE PENDING REVIEW
Woy Woy Road, Kariong (March, 2000)	Non-School Zone	1,000m	2	0	0	1	0	1		Blacklength	2,500	101	3	48	RELOCATE PENDING REVIEW

Hume Highway, Coolac (March, 2000)	Non-School Zone	Road upgrade, no longer effective – Site Deactivated							Blacklength	3,000	11	3	11	RELOCATE – Already Deactivated
Pacific Highway, New Italy (July, 2002)	Non-School Zone	1,000m	3	0	3	1	0	2	Blacklength	1,200	8	3	5	EFFECTIVE
Eastern Valley Way, North Willoughby (June, 2000)	Non-School Zone	1,000m	37	0	17	39	1	16	Blacklength	1,700	69	0	18	RELOCATE PENDING REVIEW
Hume Highway, Tarcutta (March, 2000)	Non-School Zone	Road upgrade, no longer effective – Site Deactivated							Blacklength	2,500	20	3	10	RELOCATE – Already Deactivated
Lanyon drive, Queanbeyan (May, 2003)	Non-School Zone	1,000m	2	0	0	1	0	0	Blacklength	3,300	15	0	11	EFFECTIVE
New England Highway, Quirindi (April, 2003)	Non-School Zone	1,000m	0	0	0	1	0	1	Blacklength	2,100	9	0	9	RELOCATE
McCaffrey Drive, Rankin Park (April, 2003)	Non-School Zone	1,000m	7	0	8	6	0	1	Blacklength	3,600	40	0	22	EFFECTIVE
Pennant Hills Road, Carlingford (August, 2002)	Non-School Zone	1,000m	66	0	36	47	0	23	Blacklength	1,000	60	1	25	EFFECTIVE
Hume Highway, Burwood Heights (December, 2001)	Non-School Zone	1,000m	45	0	35	31	0	15	Blacklength	1,100	57	2	28	EFFECTIVE
Hume Highway, Burwood (December, 2001)	Non-School Zone	1,000m	72	0	28	50	0	29	Blacklength	1,700	101	3	45	RELOCATE PENDING REVIEW
Blaxland Road, Ryde (June, 2002)	Non-School Zone	1,000m	42	0	19	37	0	11	Blacklength	1,200	62	1	19	EFFECTIVE
Castle Hill Road, West Pennant Hills (July, 2002)	Non-School Zone	1,000m	41	2	12	19	0	8	Blacklength	1,550	56	1	29	EFFECTIVE
Pacific Highway, Wardell (February, 2003)	Non-School Zone	1,000m	10	0	12	2	0	0	Rural Bends	1,400	8	1	6	EFFECTIVE
Pacific Highway (Northbound), Sandgate (January, 2003)	Non-School Zone	1,000m	29	1	19	23	1	6	Blacklength	4,300	61	2	31	EFFECTIVE
Bolong Road, Bomaderry (March, 2003)	Non-School Zone	1,000m	14	1	9	10	0	3	Rural Bends	3,200	17	0	6	EFFECTIVE
Bolong Road, Shoalhaven Heads (April, 2003)	Non-School Zone	1,000m	3	0	0	3	0	0	Rural Bends	3,200	17	0	6	RELOCATE PENDING REVIEW
Pacific Highway, Charmhaven (April, 2007)	Non-School Zone	1,000m	15	0	12	17	0	5	Rural Bends	1,000	22	0	18	EFFECTIVE
Concord Road, Concord West (July, 2000)	Non-School Zone	1,000m	34	0	23	31	0	11	Blacklength	1,300	79	1	35	EFFECTIVE
Henry Lawson Drive, Picnic Point (May, 2001)	Non-School Zone	1,000m	5	0	2	1	0	2	Blacklength	1,600	37	3	18	EFFECTIVE



James Ruse Drive, Camellia (December 2001)	Non-School Zone	1,000m	70	1	39	70	0	32		Blacklength	1,800	113	1	45	EFFECTIVE
Pennant Hills Road, North Parramatta (November, 2001)	Non-School Zone	1,000m	21	0	10	14	0	10		Blacklength	1,000	26	0	9	EFFECTIVE
Hume Highway, Yagoona (December, 2001)	Non-School Zone	1,000m	86	2	56	36	0	17		Rural Bends	1,300	116	2	53	EFFECTIVE
Northern Distributor, Corimal (July, 2002)	Non-School Zone	1,000m	22	0	19	23	0	14		Blacklength	1,900	25	1	22	EFFECTIVE
Princes Highway, Bulli (December, 2001)	Non-School Zone	1,000m	26	1	13	19	0	9		Blacklength	1,200	45	2	31	EFFECTIVE
Warringah Road, Frenchs Forest (January, 2002)	Non-School Zone	1,000m	57	0	19	50	0	27		Rural Bends	2,300	160	1	54	RELOCATE PENDING REVIEW
M4 Motorway, Wentworthville / Greystanes (December, 2001)	Non-School Zone	1,000m	72	2	28	84	1	46	Excludes crashes on ramps (location type 16) and at the Cumberland Hy intersections (grade separated from M4 Motorway) / Includes crashes reported as 500m east or west of Cumberland Hy overpass	Blacklength	1,100	37	1	15	RELOCATE
Hume Highway, Lansvale (December, 2001)	Non-School Zone	1,000m	76	1	45	52	0	31		Blacklength	2,170	94	1	53	EFFECTIVE
New South Head Road, Edgecliff (December, 2001)	Non-School Zone	1,000m	97	0	54	87	0	48	Excludes crashes on ramps and at grade separated intersections e.g. Darlinghurst Rd		1,000	89	0	31	EFFECTIVE
Centennial Avenue, Lane Cove (December, 2001)	Non-School Zone	1,000m	36	0	14	24	0	9		Blacklength	1,000	34	1	9	EFFECTIVE
Fairfield Street, Fairfield East (July, 2002)	Non-School Zone	1,000m	17	0	14	8	0	6		Blacklength	1,220	36	1	30	EFFECTIVE
Pacific Highway, Banora Point (April, 2003)	Non-School Zone	Major road works and tunnel construction, no longer effective – Site Deactivated								Blacklength	1,000	30	0	8	RELOCATE – Already Deactivated
Henry Lawson Drive, Peakhurst (January, 2003)	Non-School Zone	1,000m	25	0	13	14	0	6		Blacklength	1,000	12	0	6	EFFECTIVE
Brunswick Valley Way, Ocean Shores (February, 2003)	Non-School Zone	1,000m	5	0	4	12	0	6	Current analysis period is prior to the completion of road upgrade. Road previously part of Pacific Hy / Brunswick Heads to Yelgun	Rural Bends	1,000	7	1	10	RELOCATE

Manns Road, West Gosford (November, 2002)	Non-School Zone	1,000m	18	0	7	16	0	11		Blacklength	1,300	21	0	8	RELOCATE PENDING REVIEW
Sydney - Newcastle Freeway (F3), Bar Point (April, 2006)	Non-School Zone	1,000m	9	0	3	11	0	7		Blacklength	6,600	134	2*	42*	MAINTAIN – Findings confounded by increase in dry weather speed limit
Bexley Road, Bexley North (May, 2006)	Non-School Zone	1,000m	35	1	27	20	0	16		Blacklength	2,200	193	0	122	EFFECTIVE
Pine Creek Way, Bonville (December, 2005)	Non-School Zone	1,000m	6	1	9	1	0	0	Road previously Pacific Hy, re-named Pine Creek Way when Pacific Hy bypass of Bonville opened (Sept 2008)	Blacklength	1,400	9	0	8	EFFECTIVE – Consider relocation due to major upgrade of highway (bypass)
Pacific Highway, Ewingsdale (September, 2006)	Non-School Zone	1,000m	15	1	10	1	0	0		Blacklength	1,500	29	1		EFFECTIVE
Cowpasture Road, Green Valley (May, 2000)	Non-School Zone	1,000m	18	1	12	13	0	13		Blacklength	2,200	54	1	36	EFFECTIVE
Captain Cook Drive, Carringbah (April, 2001)	Non-School Zone	1,000m	19	0	14	13	0	5		Blacklength	1,200	46	2	20	EFFECTIVE
Pacific Highway, Herons Creek (April, 2000)	Non-School Zone	Road upgrade, no longer effective – Site Deactivated								Blacklength	1,000	23	2	32	RELOCATE – Already Deactivated
Delhi Road, Macquarie Park (April, 2000)	Non-School Zone	1,000m	35	0	16	48	0	25		Blacklength	1,000	160	1	95	RELOCATE
Princes Highway, North Wollongong (June, 2000)	Non-School Zone	1,000m	55	0	43	51	0	26		Blacklength	1,700	48	0	37	EFFECTIVE
Eastern Arterial Road, Gordon (July, 2000)	Non-School Zone	1,000m	13	0	10	14	0	15		Blacklength	1,100	20	1	15	RELOCATE
Richmond Road, Berkshire Park (June, 2000)	Non-School Zone	1,000m	18	1	11	21	0	13		Blacklength	1,000	17	1	9	EFFECTIVE
Elizabeth Drive, Bonnyrigg (July, 2000)	Non-School Zone	1,000m	32	1	13	26	0	13		Blacklength	1,400	81	3	31	EFFECTIVE
Gibson Avenue, Padstow (July, 2000)	Non-School Zone	1,000m	31	1	7	17	0	8		Blacklength	1,000	32	1	10	EFFECTIVE
Canterbury Road, Canterbury (April, 2001)	Non-School Zone	1,000m	108	1	61	80	0	56		Blacklength	1,000	102	1	37	EFFECTIVE
M2 Motorway, North Epping (May, 2007)	Non-School Zone	Before and after crash data not comparable due to road widening and speed limit change							This speed camera was installed when the motorway was widened from 2 lanes to 3 lanes and speed limit reduced from 100km/h to 80km/h	High risk	No Before Data Available				Evaluate crashes at this location after widening of M2 Motorway for possible future camera enforcement

Tweed Valley Way, Burringbar (September, 2000)	Non-School Zone	1,000m	7	3	4	2	0	0	Crashes with unknown location or described as on the spot of Burringbar Range are excluded	Blacklength	5,300	24	0	9	EFFECTIVE
General Holmes Drive, Botany (August, 2002)	Non-School Zone	1,000m	57	0	36	66	1	22	Crashes on the spot of airport tunnel are included	High risk	No Before Data Available				RELOCATE PENDING REVIEW
Spit Rd, Beauty Point/The Spit (October, 2000 / February, 2003)	Non-School Zone	1,500m	125	1	62	76	2	50	Original black length analysis was analysed separately for north and south bound.	Blacklength	1,200	138	1	62	RELOCATE PENDING REVIEW
Southern Freeway - F6, Gwynneville (August, 2003)#	Non-School Zone	1,000m	16	0	9	3	0	1	# Northbound crashes only / Crashes recorded as occurring on ramps are excluded	Blacklength	1,400	10	0	4	EFFECTIVE
Southern Freeway - F6, Gwynneville (August, 2003)##	Non-School Zone	1,000m	3	0	1	2	0	1	## Southbound crashes only / Crashes recorded as occurring on ramps are excluded	Blacklength	1,400	13	1	12	EFFECTIVE
Pacific Hy, Bundagen (December, 2005)	Non-School Zone	Road upgrade, no longer effective – Site Deactivated								Blacklength	1,000	13	7	14	RELOCATE – Already Deactivated
M5 Motorway Tunnel, Bardwell Park/Arncliffe (August, 2002)	Non-School Zone	No Before Data Available								High risk	No Before Data Available				EFFECTIVE
Lane Cove Tunnel, Lane Cove (May, 2007)	Non-School Zone	No Before Data Available								High risk	No Before Data Available				EFFECTIVE
Cross City Tunnel (September, 2005)	Non-School Zone	No Before Data Available								High risk	No Before Data Available				EFFECTIVE
Eastern Distributor Tunnel, Darlinghurst (June, 2000)	Non-School Zone	No Before Data Available								High risk	No Before Data Available				EFFECTIVE
Sydney Harbour Tunnel (August, 2002)	Non-School Zone	No Before Data Available								High risk	No Before Data Available				EFFECTIVE
Pennant Hills Road, Oatlands/Nth P'Matta (April, 2007)	School Zone	2,770m	68	0	35	32	0	10	Several schools covered by patch to patch – Kings School, Burnside Primary, Cumberland High	School Zone	2,770	67	1*	25*	EFFECTIVE
President Avenue, Gymea (July, 2003)	School Zone	330m	28	0	11	10	1	6		School Zone	330	28	0*	11*	RELOCATE PENDING CONSULTATION AND REVIEW

Carlingford Road, Epping (July, 2003)	School Zone	290m	5	0	4	5	0	7		School Zone	290	5	0	4	RELOCATE PENDING CONSULTATION AND REVIEW
Blackwall Road, Woy Woy North (July, 2003)	School Zone	280m	4	0	1	3	0	2		School Zone	650	6	0*	1*	RELOCATE PENDING CONSULTATION AND REVIEW
Henry Parry Drive, Wyoming (July, 2003)	School Zone	230m	6	0	6	1	0	1		School Zone	230	6	0	6	EFFECTIVE
Ocean Beach Road, Woy Woy (July, 2003)	School Zone	340m	13	0	5	10	0	6		School Zone	340	13	0	5	RELOCATE PENDING CONSULTATION AND REVIEW
Balgownie Road, Fairy Meadow (July, 2003)	School Zone	450m	4	0	2	3	0	3		School Zone	450	4	0	2	RELOCATE PENDING CONSULTATION AND REVIEW
Princes Highway, West Wollongong (July, 2003)	School Zone	620m	25	0	11	17	0	9		School Zone	620	25	0	11	EFFECTIVE
New England Highway, Lochinvar (May, 2000)	School Zone	1000m	7	1	2	4	0	2		School Zone	1,000	7	1	2	EFFECTIVE
Pacific Highway, Gateshead (May, 2000)	School Zone	820m	21	0	4	7	0	3		School Zone	1,000	33	0*	16	EFFECTIVE
Fitzwilliam Road, Toongabbie (May, 2007)	School Zone	590m	18	0	7	7	0	1		School Zone	578	14	0*	2*	EFFECTIVE
Old Northern Road, Castle Hill (May, 2007)	School Zone	430m	18	0	3	6	0	2		School Zone	434	21	0*	5*	EFFECTIVE
Sherwood Road, Merrylands West (May, 2007)	School Zone	410m	10	0	5	8	0	8		School Zone	448	14	0*	8*	RELOCATE PENDING CONSULTATION AND REVIEW
Woodville Road, Guildford (May, 2007)	School Zone	500m	34	0	23	34	0	17		School Zone	506	41	0*	18*	EFFECTIVE
Macpherson Street, Mosman (July, 2003)	School Zone	320m	5	0	1	4	0	0		School Zone	320	5	0	1	EFFECTIVE
King Georges Road, Beverley Hills (July 2007)	School Zone	1,040m	102	0	63	82	0	35		School Zone	1,053	126	1*	57*	EFFECTIVE
Central Coast Highway, Bateau Bay (July, 2000)	School Zone	450m	7	0	1	7	0	4		Blacklength	2,700	75	0*	35	RELOCATE PENDING CONSULTATION AND REVIEW
Great Western Highway, Parramatta (August, 2007)	School Zone	330m	25	0	8	12	0	10		School Zone	348	25	0*	8*	RELOCATE PENDING CONSULTATION

															AND REVIEW
Merrylands Road, Merrylands (May, 2007)	School Zone	220m	20	1	9	6	0	5		School Zone	226	18	1*	8*	EFFECTIVE
Bunnerong Road, Maroubra/Eastgardens (June, 2007)	School Zone	370m	21	0	9	10	0	5		School Zone	374	19	0*	6*	EFFECTIVE
Malabar Road, Maroubra (June, 2007)	School Zone	680m	19	0	10	22	0	7		School Zone	670	29	0*	9*	EFFECTIVE
Avoca Street, Randwick (June, 2007)	School Zone	560m	32	0	14	19	0	10		School Zone	566	31	0*	13*	EFFECTIVE
Botany Road, Alexandria/Roseberry (June, 2007)	School Zone	360m	20	0	8	15	0	5		School Zone	355	21	0*	8*	EFFECTIVE
Hume Highway, Bankstown (July, 2007)	School Zone	670m	65	0	34	38	0	24		School Zone	660	73	0*	34*	EFFECTIVE
Hume Highway, Ashfield (August, 2007)	School Zone	410m	24	0	13	9	0	4		School Zone	410	14	0*	8*	EFFECTIVE
<i>Bigge Street, Liverpool (November, 2007)**</i>	<i>School Zone</i>	<i>360m</i>	<i>13</i>	<i>0</i>	<i>10</i>	<i>18</i>	<i>0</i>	<i>10</i>	<i>** Based on 2-year pre and post periods</i>	School Zone	361	33	0*	15*	More Data Needed
Pacific Highway, Lindfield (July, 2007)	School Zone	480m	22	0	5	13	0	5		School Zone	489	22	0*	5*	EFFECTIVE
<i>Pittwater Road, Narrabeen (October, 2007)**</i>	<i>School Zone</i>	<i>300m</i>	<i>5</i>	<i>0</i>	<i>2</i>	<i>12</i>	<i>0</i>	<i>9</i>	<i>** Based on 2-year pre and post periods</i>	School Zone	300	13	2*	4*	More Data Needed
<i>Edgar Street, Condell Park (October, 2007)**</i>	<i>School Zone</i>	<i>240m</i>	<i>11</i>	<i>0</i>	<i>3</i>	<i>6</i>	<i>0</i>	<i>6</i>	<i>** Based on 2-year pre and post periods</i>	School Zone	246	21	1*	8*	More Data Needed
<i>Forest Road, Penshurst (October, 2007)**</i>	<i>School Zone</i>	<i>620m</i>	<i>20</i>	<i>0</i>	<i>6</i>	<i>21</i>	<i>0</i>	<i>8</i>	<i>** Based on 2-year pre and post periods</i>	School Zone	629	35	0*	13*	More Data Needed
<i>Forest Road, Hurstville/Bexley (October, 2007)**</i>	<i>School Zone</i>	<i>720m</i>	<i>19</i>	<i>0</i>	<i>8</i>	<i>12</i>	<i>0</i>	<i>9</i>	<i>** Based on 2-year pre and post periods</i>	School Zone	744	32	0*	11*	More Data Needed
<i>Harbord Road, North Curl Curl (October, 2007)**</i>	<i>School Zone</i>	<i>1,060m</i>	<i>32</i>	<i>0</i>	<i>8</i>	<i>17</i>	<i>0</i>	<i>3</i>	<i>** Based on 2-year pre and post periods</i>	School Zone	1,044	40	0*	13*	EFFECTIVE – More Data Needed
<i>Cabramatta Road, Bonnyrigg (October, 2007)**</i>	<i>School Zone</i>	<i>1,000m</i>	<i>26</i>	<i>0</i>	<i>15</i>	<i>14</i>	<i>0</i>	<i>8</i>	<i>** Based on 2-year pre and post periods</i>	School Zone	1,030	61	0*	28*	EFFECTIVE – More Data Needed
<i>Kingsway, Miranda (November, 2007)**</i>	<i>School Zone</i>	<i>400m</i>	<i>16</i>	<i>0</i>	<i>6</i>	<i>6</i>	<i>0</i>	<i>2</i>	<i>** Based on 2-year pre and post periods</i>	School Zone	400	19	0*	9*	EFFECTIVE – More Data Needed
<i>Victoria Road, Ryde (November, 2007)**</i>	<i>School Zone</i>	<i>570m</i>	<i>13</i>	<i>0</i>	<i>5</i>	<i>9</i>	<i>0</i>	<i>5</i>	<i>** Based on 2-year pre and post periods</i>	School Zone	557	27	0*	10*	EFFECTIVE – More Data Needed
<i>Cleveland Street, Moore Park (November, 2007)**</i>	<i>School Zone</i>	<i>380m</i>	<i>10</i>	<i>0</i>	<i>6</i>	<i>1</i>	<i>0</i>	<i>1</i>	<i>** Based on 2-year pre and post periods</i>	School Zone	385	13	0*	6*	EFFECTIVE – More Data Needed

Woodville Road, Old Guildford/Chester Hill (January, 2009)***	School Zone	370m	7	0	3	9	0	5	*** Based on 1-year pre and post periods	School Zone	362	25	0*	13*	More Data Needed	
Parker Street, Kingswood (January, 2009)***	School Zone	340m	5	0	7	4	0	4	*** Based on 1-year pre and post periods	School Zone	346	24	0*	7*	EFFECTIVE – More Data Needed	
Pittwater Road, North Narrabeen (January, 2009)***	School Zone	590m	2	0	1	4	0	0	*** Based on 1-year pre and post periods	School Zone	591	19	0*	6*	EFFECTIVE – More Data Needed	
Victoria Road, Rydalmere (January, 2009)***	School Zone	440m	1	0	0	1	0	1	*** Based on 1-year pre and post periods	School Zone	452	16	0*	5*	More Data Needed	
Pacific Highway, Ourimbah (July, 2003)	School Zone	360m	2	0	1	0	0	0	Road works undertaken from June 2006 to January 2010	School Zone	360	2	0	1	EFFECTIVE	
Pacific Highway, Wahroonga (January, 2009)***	School Zone	1,960m	22	0	9	19	0	7	*** Based on 1-year pre and post periods - Several schools covered by patch to patch - Knox Grammar, Warrawee Public School, Abbotsleigh Senior Campus	School Zone	1,965	90	0*	38*	EFFECTIVE – More Data Needed	
Princes Highway, Kogarah (July, 2003)	School Zone	990m	72	0	41	68	0	39		School Zone	990	72	0	41	EFFECTIVE	
The Boulevard, Strathfield (February, 2009)***	School Zone	1,010m	10	0	3	10	0	3	*** Based on 1-year pre and post periods	School Zone	1,100	48	0*	21*	More Data Needed	
COMBINED LOCATIONS (TOTAL FOR ALL LOCATIONS)			BEFORE			AFTER			* Count is for "fatal crashes" or "injury crashes", rather than "fatalities" or "injuries"							
			All Crashes	Fatalities	Injuries	All Crashes	Fatalities	Injuries								
			3,053	36	1,625	2,257	12	1,213								

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