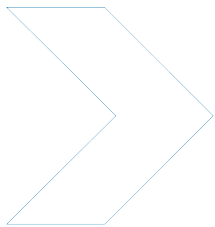


# ➤ Centre for Automotive Safety Research



## Analysis of infringement data from fixed red light and speed cameras at signalised intersections in South Australia

Mackenzie JRR, Kloeden CN, Hutchinson TP

---

CASR REPORT SERIES

CASR071

June 2012



THE UNIVERSITY  
*of* ADELAIDE

# Report documentation

---

| REPORT NO. | DATE      | PAGES | ISBN              | ISSN      |
|------------|-----------|-------|-------------------|-----------|
| CASR071    | June 2012 | 20    | 978 1 921645 08 2 | 1449-2237 |

## TITLE

Analysis of infringement data from fixed red light and speed cameras at signalised intersections in South Australia

## AUTHORS

Mackenzie JRR, Kloeden CN, Hutchinson TP

## PERFORMING ORGANISATION

Centre for Automotive Safety Research  
The University of Adelaide  
South Australia 5005  
AUSTRALIA

## SPONSORED BY

Department of Planning, Transport and Infrastructure  
GPO Box 1533  
Adelaide SA 5001  
AUSTRALIA

## AVAILABLE FROM

Centre for Automotive Safety Research  
<http://casr.adelaide.edu.au/reports>

## ABSTRACT

Safety cameras are installed at some signalised intersections in South Australia. They photograph vehicles that enter the intersection after the signal has changed to red, or that exceed the speed limit by more than a selected amount. Infringement data at 21 safety camera sites in metropolitan Adelaide was used to track how disobey red light and speeding infringements changed during the first year of operation. It was found that both speeding and red light running decreased over time after the installation of a safety camera. Red light running decreased slowly over time, while speeding fell more rapidly. For the more serious levels of speeding, there was a more rapid fall in infringements during the first few weeks and a slower decline thereafter. Based on this, safety cameras appear to generate a worthwhile improvement in driver behaviour. The fact that continued reductions are seen during the first year of operation suggests that some learning on the part of drivers is occurring.

## KEYWORDS

Red light camera, Speed camera, Law enforcement, Speeding, Traffic offences

© The University of Adelaide 2012

The views expressed in this report are those of the authors and do not necessarily represent those of the University of Adelaide or the funding organisations.

## Summary

---

Safety cameras are installed at some signalised intersections in South Australia. They photograph vehicles that enter the intersection after the signal has changed to red, or that exceed the speed limit by more than a selected amount.

Infringement data at 21 safety camera sites in metropolitan Adelaide was used to track how disobey red light and speeding infringements changed during the first year of operation.

It was found that both speeding and red light running decreased over time after the installation of a safety camera. Red light running decreased slowly over time, while speeding fell more rapidly. For the more serious levels of speeding, there was a more rapid fall in infringements during the first few weeks and a slower decline thereafter. Based on this, safety cameras appear to generate a worthwhile improvement in driver behaviour.

The fact that continued reductions are seen during the first year of operation suggests that some learning on the part of drivers is occurring.

# Contents

---

- 1 Introduction .....1
- 2 Safety camera installations in South Australia .....2
  - 2.1 Red light camera sites in 1988 .....2
  - 2.2 Red light camera sites in 1997 .....2
  - 2.3 Red light camera sites in 2001 .....3
  - 2.4 Pedestrian crossing sites from 2003 to 2005 .....4
  - 2.5 Dual purpose camera sites from 2006 to June 2009 .....4
- 3 Selection of safety camera sites for analysis .....6
- 4 Results .....8
  - 4.1 Disobey red light infringements .....9
  - 4.2 Speeding infringements .....9
- 5 Discussion .....13
- Acknowledgements .....15
- References .....16

# 1 Introduction

---

Red light cameras are installed at signalised intersections or signalised pedestrian crossings in order to photograph vehicles that enter the intersection or crossing after the traffic signal has changed to red. Dual purpose cameras operate the same way as red light cameras but also photograph vehicles that exceed the speed limit by more than a selected amount. Traffic expiation notices are sent to the registered owners of vehicles that are photographed. The aim is to deter red light running and speeding and, as a consequence, reduce the number and severity of crashes at intersections and crossings. Signs before the monitored approach to the intersection inform drivers that red light or dual purpose safety cameras are in operation.

In South Australia red light cameras were first installed in 1988. The first dual purpose cameras were installed in 2003. As of June 2009, there were 81 safety camera installations available for operation in South Australia.

Doecke and Grigo (2011) provide an overview about general speed enforcement in South Australia. Specifically, Tables 4.9, 4.13, and 4.16 of their report present information on speeding detections at fixed dual purpose camera sites.

Wilson et al. (2011) identified several studies that investigated the effect that speed cameras had on speed. In each of the identified studies it was found that, after speed camera implementation, there was an associated reduction in average speed.

The purpose of this study was to conduct an evaluation of fixed red light and speed cameras at signalised intersections in South Australia. This was achieved by analysing the change in the number of infringements over the year following the commissioning of a camera.

## 2 Safety camera installations in South Australia

Through consultation with the South Australian Department of Planning, Transport and Infrastructure (DPTI), a total of 106 safety camera installations were identified in South Australia between 1988 and June 2009. Note that this number counts multiple cameras at the same intersection separately and considers a reinstallation at a site that was previously decommissioned as being an additional installation.

There were four cases where two safety cameras were located at the same intersection. In two of these cases the safety cameras were monitoring different approaches to the same intersection. In the remaining two cases, the safety cameras were monitoring different lanes of the same approach to an intersection with multiple lanes.

Prior to 2006, all safety camera sites consisted of housings for wet film cameras. In 2006, it became standard practice to fit all new safety camera sites with digital cameras.

### 2.1 Red light camera sites in 1988

In July 1988, fifteen signalised intersections around Adelaide were fitted with red light camera housings and flash units, with five active wet film camera internals being rotated among the sites (see Table 2.1). All of the sites were decommissioned in later years. The specific dates of commissioning and decommissioning could not be found for any of the sites. Some of the sites had safety cameras reintroduced (under a new site listing) in later years.

Table 2.1  
Red light camera intersection sites introduced in 1988

| Road name                 | Intersecting road name | Suburb          |
|---------------------------|------------------------|-----------------|
| Franklin Street           | Morphett Street        | Adelaide        |
| Fullarton Road            | The Parade             | Kent Town       |
| Goodwood Road             | Springbank Road        | Daw Park        |
| Hampstead Road            | Taunton Road           | Manningham      |
| Main North Road           | Elizabeth Way          | Elizabeth       |
| Melbourne Street          | Mann Terrace           | North Adelaide  |
| North East Road           | Ascot Avenue           | Vale Park       |
| North East Road           | Sudholz Road           | Gilles Plains   |
| Oaklands Road             | Diagonal Road          | Warradale North |
| Payneham Road             | Portrush Road          | Payneham        |
| Pirie Street/Bartels Road | Hutt Street            | Adelaide        |
| Port Road                 | South Road             | Croydon         |
| South Road                | George Street          | Thebarton       |
| South Road                | Richmond Road          | Keswick         |
| West Lakes Boulevard      | Frederick Road         | West Lakes      |

### 2.2 Red light camera sites in 1997

During 1997, four red light camera sites were installed at two signalised intersections in the country town of Port Augusta, with one active wet film camera internal being rotated among the sites (see Table 2.2). The specific dates of commissioning and decommissioning could not be found for either of the sites. However, it is known that these sites were decommissioned after only a short time in operation.

Table 2.2  
Red light camera intersection sites introduced in 1997

| Road name                   | Intersecting road name | Town         |
|-----------------------------|------------------------|--------------|
| Eyre Highway - Southeast    | Burgoyne Street        | Port Augusta |
| Eyre Highway - Northwest    | Burgoyne Street        | Port Augusta |
| Victoria Parade - Southeast | Carlton Parade         | Port Augusta |
| Victoria Parade - Northwest | Carlton Parade         | Port Augusta |

## 2.3 Red light camera sites in 2001

During 2001, 26 red light wet film cameras were installed at signalised intersections around Adelaide (see Table 2.3). From late 2003 to early 2005 the majority of sites were upgraded to dual red light and speed, wet film cameras.

Five of the sites were decommissioned but the specific dates could not be determined. The remaining sites were still in operation in June 2009, with 13 wet film camera internals being rotated among them.

Table 2.3  
Red light camera intersection sites introduced in 2001  
and upgraded to dual purpose camera sites during 2003-2005

| Road name             | Intersecting road name          | Suburb          | Commissioning date | Upgrade date |
|-----------------------|---------------------------------|-----------------|--------------------|--------------|
| Findon Road           | Balcombe Avenue/Crittenden Road | Findon          | 20/04/2001         | not upgraded |
| King William Street*  | North Terrace                   | Adelaide        | 25/04/2001         | 01/03/2004   |
| South Road            | Daws Road                       | Melrose Park    | 25/04/2001         | 01/03/2004   |
| Dyson Road            | Beach Road                      | Christies Beach | 07/05/2001         | 12/07/2004   |
| Main South Road       | Flaxmill Road/Wheatsheaf Road   | Morphett Vale   | 07/05/2001         | 10/03/2005   |
| North Terrace*        | Frome Road                      | Adelaide        | 07/05/2001         | 23/12/2004   |
| Fitzroy Terrace       | Prospect Road                   | Fitzroy         | 08/05/2001         | 30/12/2003   |
| Marion Road           | Cross Road                      | Plympton Park   | 08/05/2001         | 27/02/2004   |
| South Road            | Torrens Road                    | Renown Park     | 08/05/2001         | 29/12/2003   |
| Brighton Road         | Sturt Road                      | Brighton        | 09/05/2001         | 05/03/2004   |
| Cross Road            | Goodwood Road                   | Westbourne Park | 09/05/2001         | 12/01/2004   |
| Marion Road*          | Sturt Road                      | Mitchell Park   | 09/05/2001         | 22/12/2003   |
| South Road*           | Grange Road/Manton Street       | Hindmarsh       | 14/05/2001         | 30/04/2004   |
| Montacute Road        | St Bernards Road                | Rostrevor       | 04/06/2001         | 18/02/2005   |
| Golden Grove Road     | Milne Road                      | Modbury Heights | 06/06/2001         | 23/01/2004   |
| North East Road       | Reservoir Road                  | Modbury         | 12/06/2001         | 23/01/2004   |
| Glyburn Road          | The Parade                      | Kensington Park | 25/06/2001         | 20/07/2004   |
| Lower North East Road | Gorge Road                      | Paradise        | 28/06/2001         | 23/12/2003   |
| Main North Road       | Regency Road                    | Enfield         | 29/06/2001         | 25/02/2004   |
| The Golden Way        | The Grove Way                   | Golden Grove    | 06/07/2001         | 06/01/2004   |
| Wakefield Street*     | Pulteney Street                 | Adelaide        | 09/07/2001         | not upgraded |
| Kings Road            | Salisbury Highway               | Salisbury Downs | 17/07/2001         | 26/02/2004   |
| West Terrace          | South Terrace/Anzac Hwy         | Adelaide        | 04/10/2001         | 02/08/2004   |
| West Terrace          | South Terrace/Goodwood Road     | Adelaide        | 04/10/2001         | 07/07/2004   |
| Montacute Road        | Glyburn Road/Payneham Road      | Hectorville     | 19/11/2001         | not upgraded |
| Portrush Road         | Magill Road                     | Norwood         | 19/11/2001         | 19/04/2004   |

\*Sites that were later decommissioned

## 2.4 Pedestrian crossing sites from 2003 to 2005

During the period of 2003 to 2005, four dual purpose cameras were installed at pedestrian crossings (see Table 2.4). These were still in operation in June 2009.

Table 2.4  
Dual purpose camera pedestrian crossing sites introduced during 2003-2005

| Road name     | General position                              | Suburb         | Commissioning date |
|---------------|---|----------------|--------------------|
| Park Terrace  | Western side of the Salisbury Railway Station | Salisbury      | 25/03/2003         |
| Park Terrace  | Eastern side of the Salisbury Railway Station | Salisbury      | 25/03/2003         |
| Portrush Road | Near Phillips Street                          | Kensington     | 23/02/2004         |
| Portrush Road | Near Watson Avenue                            | Toorak Gardens | 21/12/2005         |

## 2.5 Dual purpose camera sites from 2006 to June 2009

From 2006 until June 2009, 57 dual purpose digital cameras were installed at signalised intersections in Adelaide and several country towns (see Table 2.5). The country towns where safety cameras were installed were Murray Bridge, Littlehampton, Whyalla, Port Augusta and Mount Gambier.



Table 2.5  
Dual purpose camera intersection sites introduced from 2006 to June 2009

| Road name                | Intersecting road name                 | Suburb/Town        | Commissioning date |
|--------------------------|--|--------------------|--------------------|
| Sudholz Road             | North East Road                        | Gilles Plains      | 16/02/2006         |
| Lower North East Road    | Darley Road                            | Paradise           | 17/02/2006         |
| Regency Road             | South Road                             | Regency Park       | 17/02/2006         |
| Grenfell Street          | Frome Street                           | Adelaide           | 07/03/2006         |
| Grote Street             | West Terrace                           | Adelaide           | 21/03/2006         |
| Panalatinga Road         | Pimpala Road                           | Woodcroft          | 02/05/2006         |
| The Grove Way            | Atlantis Drive/Aeolian Drive           | Golden Grove       | 05/05/2006         |
| Main South Road          | Bains Road                             | Morphett Vale      | 09/05/2006         |
| South Road               | Grand Junction Road                    | Wingfield          | 10/05/2006         |
| Grand Junction Road      | Walkleys Road                          | Walkley Heights    | 05/10/2006         |
| Henley Beach Road        | Tapleys Hill Road                      | Fulham             | 05/10/2006         |
| Kensington Road          | Portrush Road                          | Marryatville       | 05/10/2006         |
| Goodwood Road            | Cross Road                             | Cumberland Park    | 09/10/2006         |
| Grand Junction Road      | Addison Road                           | Pennington         | 12/10/2006         |
| North East Road          | Sudholz Road                           | Gilles Plains      | 12/10/2006         |
| Henley Beach Road        | Holbrooks Road                         | Underdale          | 06/12/2006         |
| Greenhill Road           | Hutt Road                              | Adelaide           | 26/03/2007         |
| King William Road        | Sir Edwin Smith Ave./War Memorial Drv. | Adelaide           | 26/03/2007         |
| North East Road          | Ascot Avenue                           | Vale Park          | 26/03/2007         |
| Adelaide Road            | Maurice Road                           | Murray Bridge      | 27/03/2007         |
| Anzac Highway            | Marion Road                            | Plympton           | 27/03/2007         |
| Commercial Street East   | Crouch Street South                    | Mount Gambier      | 27/03/2007         |
| Main South Road          | Doctors Road/Beach Road                | Morphett Vale      | 27/03/2007         |
| Sturt Street             | Bay Road                               | Mount Gambier      | 27/03/2007         |
| Adelaide Road            | Mannum Road/Swanport Road              | Murray Bridge      | 28/03/2007         |
| Playford Avenue          | Elliot Street                          | Whyalla            | 29/03/2007         |
| Tapleys Hill Road        | West Lakes Boulevard                   | Seaton             | 29/03/2007         |
| Main North Road          | Yorktown Road/Philip Highway (kerb)    | Elizabeth Park     | 30/03/2007         |
| Main North Road          | Yorktown Road/Philip Highway (median)  | Elizabeth Park     | 30/03/2007         |
| South Road               | Cormack Road                           | Wingfield          | 30/03/2007         |
| Diagonal Road            | Oaklands Road                          | Glengowrie         | 03/04/2007         |
| South Road               | Ashwin Parade/West Thebarton Road      | Torrensville       | 03/04/2007         |
| Payneham Road            | Lower Portrush Road/Portrush Road      | Marden             | 09/04/2007         |
| Payneham Road            | Nelson Street/Stephen Terrace          | Stepney            | 09/04/2007         |
| Grand Junction Road      | Hanson Road                            | Ottoway            | 12/04/2007         |
| Grand Junction Road      | Main North Road                        | Enfield            | 12/04/2007         |
| Norrie Avenue            | Nicolson Avenue                        | Whyalla            | 12/04/2007         |
| Victoria Parade          | Carlton Parade                         | Port Augusta       | 12/04/2007         |
| Victoria Parade          | Flinders Terrace                       | Port Augusta       | 13/04/2007         |
| Commercial Street West   | Wehl Street South                      | Mount Gambier      | 09/05/2007         |
| Adelaide Road            | South Eastern Freeway Access Ramps     | Littlehampton      | 28/07/2007         |
| West Terrace             | Hindley Street                         | Adelaide           | 22/09/2007         |
| South Road               | Richmond Road                          | Mile End South     | 19/12/2007         |
| Sir Donald Bradman Drive | Brooker Terrace                        | Hilton             | 08/07/2008         |
| Main North Road          | Fairfield Road                         | Elizabeth Grove    | 28/08/2008         |
| Churchill Road           | Regency Road                           | Prospect           | 11/09/2008         |
| South Road               | Regency Road                           | Regency Park       | 16/09/2008         |
| Waterloo Corner Road     | Bagster Road                           | Salisbury North    | 25/09/2008         |
| Main South Road          | Black Road                             | O'Halloran Hill    | 30/09/2008         |
| Commercial Road          | Grand Junction Road                    | Port Adelaide      | 02/10/2008         |
| Bridge Road              | Montague Road                          | Ingle Farm         | 23/10/2008         |
| Glover Avenue            | West Terrace                           | Adelaide           | 20/11/2008         |
| Anzac Highway            | Cross Road                             | Plympton           | 24/11/2008         |
| Marion Road              | Sturt Road                             | Mitchell Park      | 16/01/2009         |
| Montefiore Road          | War Memorial Drive                     | North Adelaide     | 20/01/2009         |
| North Terrace            | Frome Road                             | Adelaide           | 11/03/2009         |
| Glyburn Road             | Kensington Road                        | Kensington Gardens | 18/03/2009         |

### 3 Selection of safety camera sites for analysis

---

All disobey red light and speeding infringements issued at all active safety camera sites for the period 1 January 2001 to 31 December 2008 were obtained from the South Australia Police. The infringement data was de-identified and no information on vehicle registration or driver details was provided. The following information was included for each infringement:

- Site location
- Date of infringement
- Time of infringement
- Infringement type (disobey red light, speeding, or both)
- Speed limit at site
- Speed of infringing vehicle

For many of the sites there were very few infringements on a given day. To obtain reasonable numbers and to avoid day of week effects, the number of infringements per week was used as the basis of measurement.

The goal was to track infringements issued at each site for one year after each site was commissioned. Since the wet film camera sites did not always have a camera operating, only the digital camera sites were suitable for tracking (the 57 dual purpose camera sites commissioned from 2006 to June 2009). As 52 weeks of data was required, only those sites commissioned before 1 January 2008 were suitable for tracking (43 sites remaining). Few infringements were recorded at sites outside of Adelaide. For this reason, and to form a more homogenous sample, the country sites were excluded leaving 34 sites.

Even for the chosen sites, continuous infringement data was not available for 52 weeks due to interruptions such as road works and camera failures. Those sites with missing infringement data for three or more consecutive weeks were removed from the sample. This resulted in the analysis sample consisting of 21 sites.

Table 3.1 lists the location of the 21 sites, the commissioning date, the speed limit of the monitored approach to the intersection, the number of lanes monitored and the Annual Average Daily Traffic (AADT) through the monitored approach to the intersection. The AADT data was sourced from DPTI traffic maps and the values should be considered as estimates (DPTI, 2007). It can be seen in Table 3.1 that the majority of the sites are busy, multi-lane, arterial roads. It was beyond the scope of this study to review the history of each of the selected sites for modifications such as road works, the introduction of turn arrows, periods of high flow and major events.

Table 3.1  
Safety camera intersection sites with continuous infringement data

| Road name             | Intersecting road name                 | Suburb          | Commissioning date | Speed limit | No. of lanes | AADT    |
|-----------------------|--|-----------------|--------------------|-------------|--------------|---------|
| Sudholz Road          | North East Road                        | Gilles Plains   | 16/02/2006         | 60          | 3            | 16750   |
| Lower North East Road | Darley Road                            | Paradise        | 17/02/2006         | 60          | 3            | 14775   |
| Regency Road          | South Road                             | Regency Park    | 17/02/2006         | 60          | 3            | 12800   |
| Grenfell Street       | Frome Street                           | Adelaide        | 07/03/2006         | 50          | 3            | Unknown |
| Grote Street          | West Terrace                           | Adelaide        | 21/03/2006         | 50          | 3            | Unknown |
| Panalatinga Road      | Pimpala Road                           | Woodcroft       | 02/05/2006         | 80          | 3            | 10750   |
| The Grove Way         | Atlantis Drive/Aeolian Drive           | Golden Grove    | 05/05/2006         | 60          | 3            | Unknown |
| Main South Road       | Bains Road                             | Morphett Vale   | 09/05/2006         | 60          | 3            | 15625   |
| Kensington Road       | Portrush Road                          | Marryatville    | 05/10/2006         | 60          | 3            | 10225   |
| Goodwood Road         | Cross Road                             | Cumberland Park | 09/10/2006         | 60          | 2            | 15375   |
| Grand Junction Road   | Addison Road                           | Pennington      | 12/10/2006         | 60          | 2            | 14650   |
| Henley Beach Road     | Holbrooks Road                         | Underdale       | 06/12/2006         | 60          | 2            | 16800   |
| King William Road     | Sir Edwin Smith Ave./War Memorial Drv. | Adelaide        | 26/03/2007         | 50          | 3            | Unknown |
| North East Road       | Ascot Avenue                           | Vale Park       | 26/03/2007         | 60          | 3            | Unknown |
| Anzac Highway         | Marion Road                            | Plympton        | 27/03/2007         | 60          | 4            | 15400   |
| Main South Road       | Doctors Road/Beach Road                | Morphett Vale   | 27/03/2007         | 60          | 4            | 12250   |
| South Road            | Cormack Road                           | Wingfield       | 30/03/2007         | 70          | 3            | 17675   |
| Diagonal Road         | Oaklands Road                          | Glengowrie      | 03/04/2007         | 60          | 3            | 11550   |
| Payneham Road         | Lower Portrush Road/Portrush Road      | Marden          | 09/04/2007         | 60          | 3            | 20325   |
| Payneham Road         | Nelson Street/Stephen Terrace          | Stepney         | 09/04/2007         | 60          | 3            | 16550   |
| Grand Junction Road   | Main North Road                        | Enfield         | 12/04/2007         | 60          | 3            | 16200   |

## 4 Results

---

The graphs presented in this Section show the number of infringements per week in total for the 21 selected sites during the first year of each site's operation. Some of the sites did experience short dropouts (less than 3 consecutive weeks) of infringement data. Consequently, the infringements recorded for any one week may not be exactly comparable with those recorded for the previous or following week, as different sites may have dropped out. If dropouts occurred with increasing frequency over time, infringements would fall simply because of this. A minor effect of this type cannot be ruled out, but the general picture reported below (one of decline in infringements with time) is confirmed by considering the numbers of infringements at individual sites.

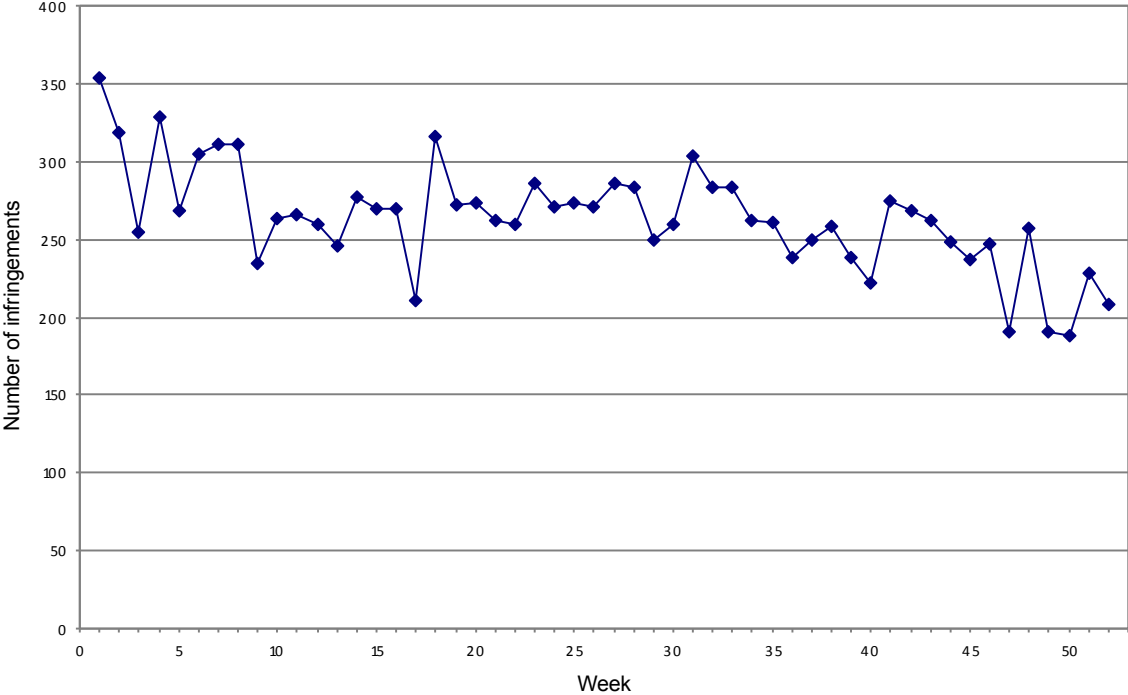
The pattern of infringements over time was also examined for sites with missing infringement data for three or more consecutive weeks that were removed from the sample. These sites were found to have results consistent with those presented here.

It should be noted that infringement data is an underestimate of the actual number of vehicles which are photographed by a safety camera in the act of disobeying a red light or speeding through an intersection. After a vehicle has been photographed, there are several reasons why a traffic infringement notice may not be issued. For example, the licence number of the infringing vehicle may be un-readable or obscured.

## 4.1 Disobey red light infringements

The total number of disobey red light infringements issued for the selected sample of 21 sites was observed to decrease gradually during the first year after infringements started being issued at each site (Figure 4.1).

Figure 4.1  
Total number of disobey red light infringements for each week after the commissioning date for the selected sample of 21 sites



## 4.2 Speeding infringements

Speeding infringements were more numerous than disobey red light infringements. The number of speeding infringements that involved exceeding the speed limit by 10 km/h or more fell over time (Figure 4.2). Speeding infringements fell more rapidly than disobey red light infringements over the course of the 52 weeks.

The number of speeding infringements issued for exceeding the speed limit by 15 km/h or more, 20 km/h or more, 25 km/h or more and 30 km/h or more are shown in Figures 4.3-4.6. All showed a general decline over the course of the 52 weeks. For high level speeding, a rapid fall in speeding infringements was observed during the first few weeks with a slower continued decline thereafter.

Figure 4.2  
 Total number of speeding infringements 10 km/h or more above the speed limit  
 for each week after the commissioning date for the selected sample of 21 sites

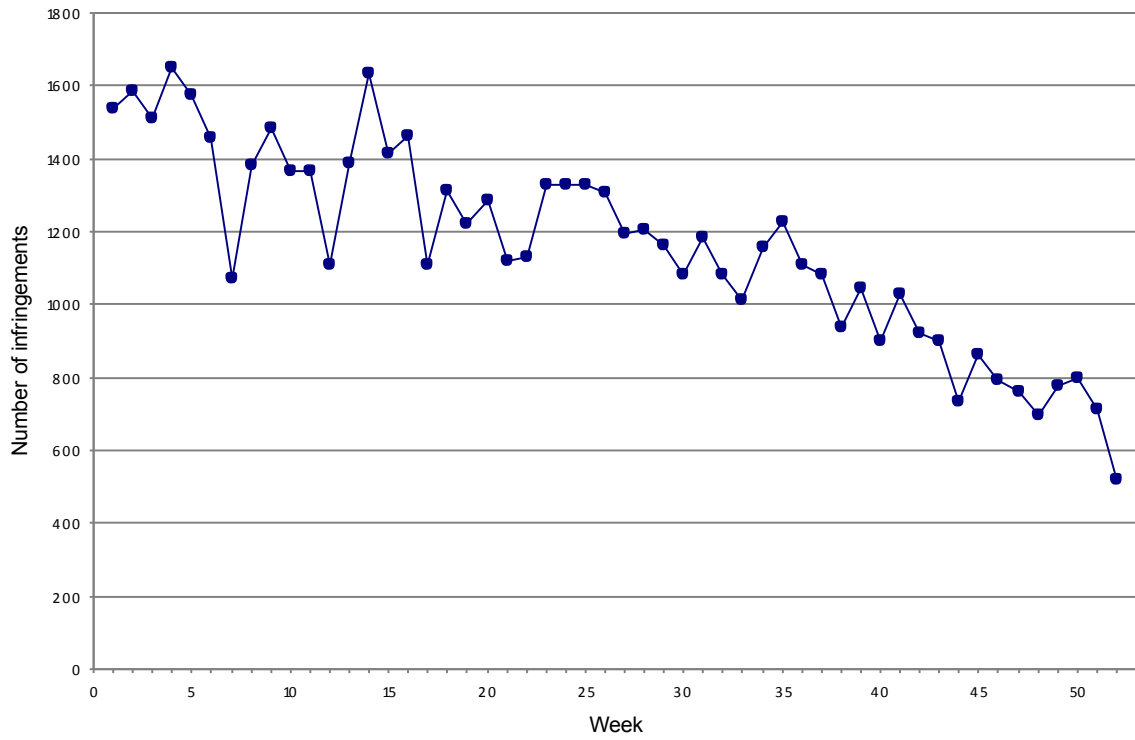


Figure 4.3  
 Total number of speeding infringements 15 km/h or more above the speed limit  
 for each week after the commissioning date for the selected sample of 21 sites

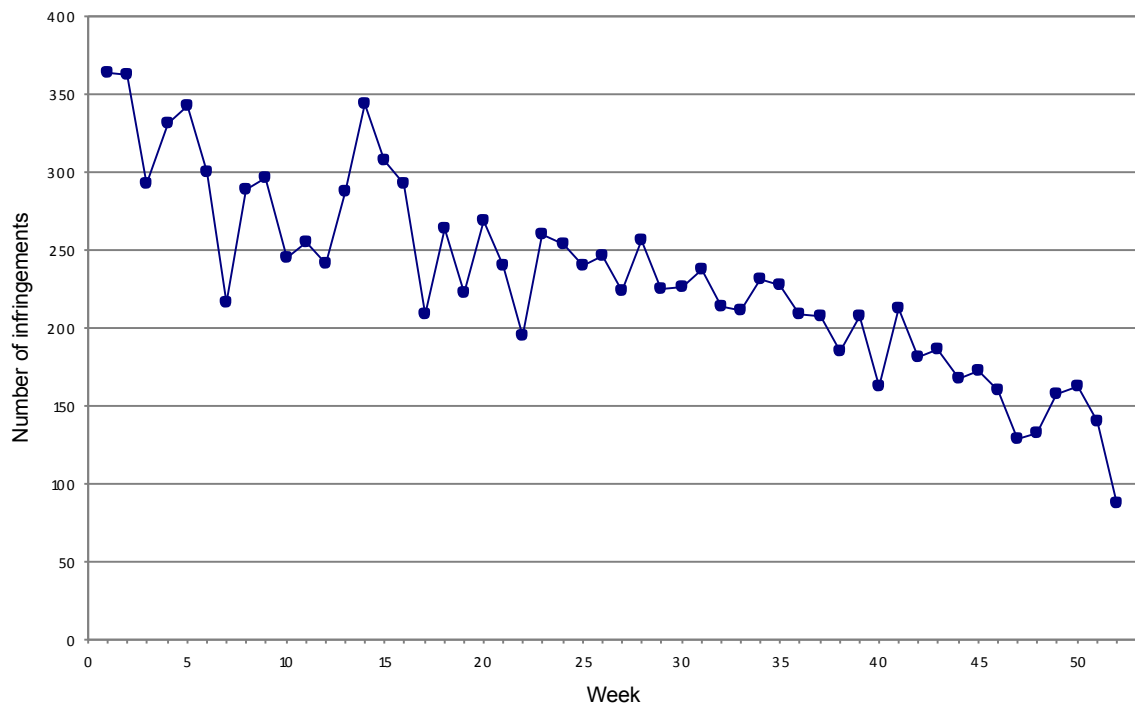


Figure 4.4  
 Total number of speeding infringements 20 km/h or more above the speed limit  
 for each week after the commissioning date for the selected sample of 21 sites

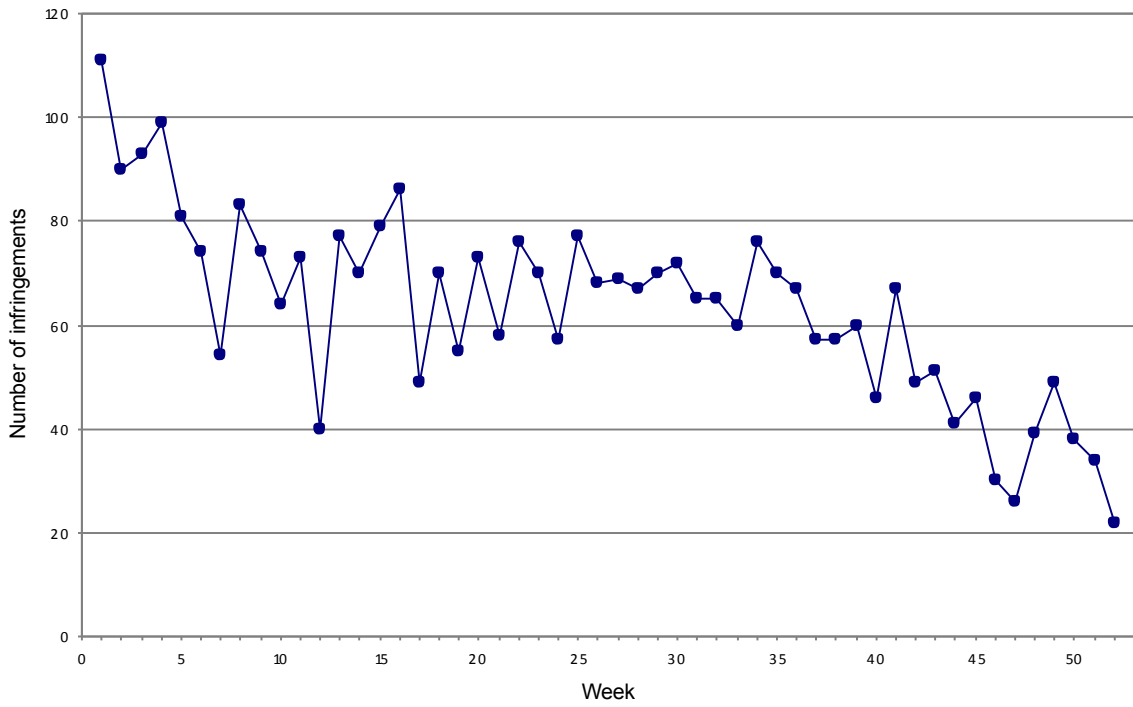


Figure 4.5  
 Total number of speeding infringements 25 km/h or more above the speed limit  
 for each week after the commissioning date for the selected sample of 21 sites

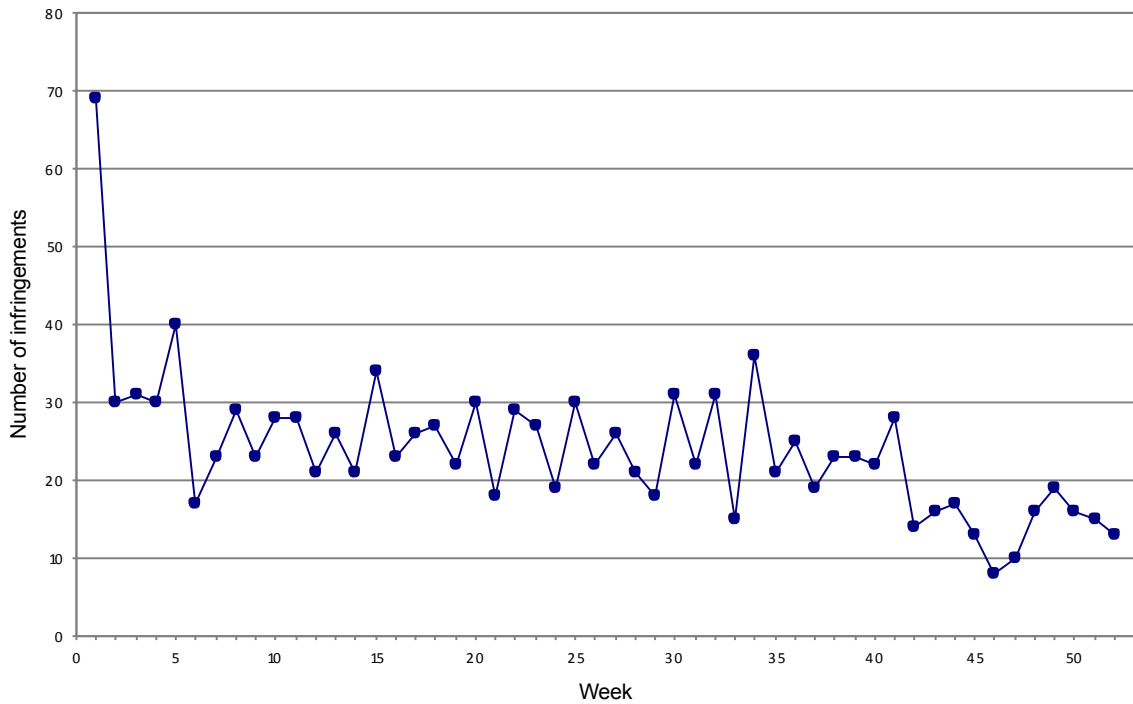
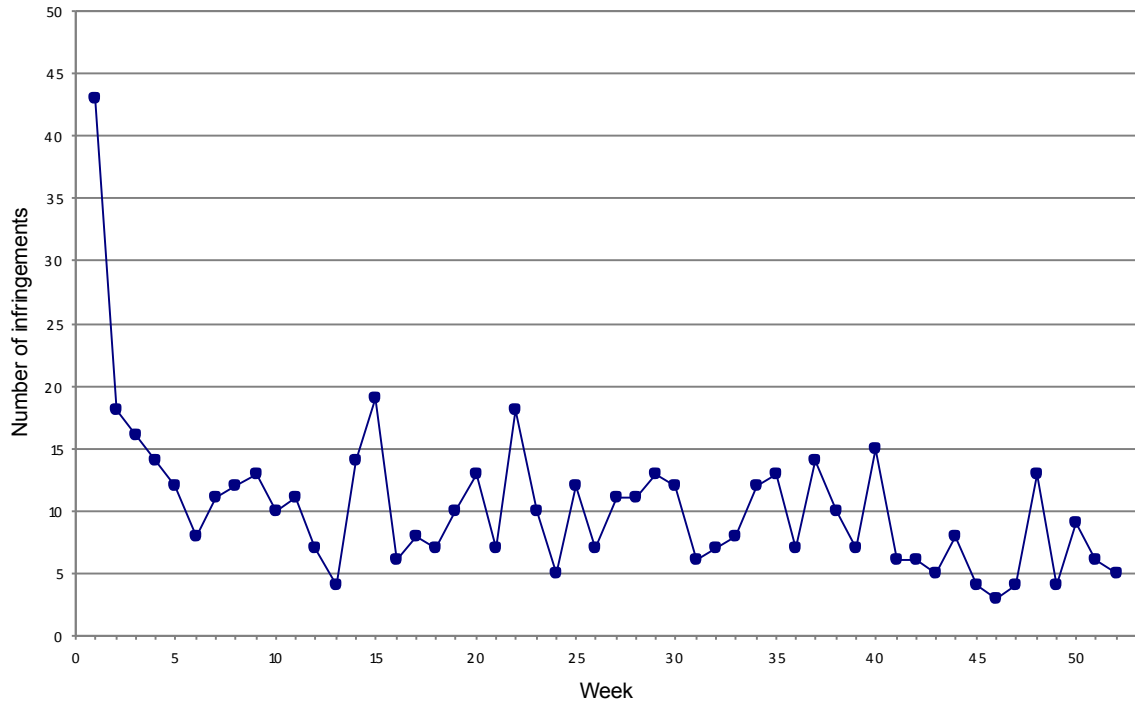


Figure 4.6  
Total number of speeding infringements 30 km/h or more above the speed limit  
for each week after the commissioning date for the selected sample of 21 sites





## 5 Discussion

---

Installing signs indicating that an intersection or crossing is being monitored for red light running violations or red light running and speeding violations would be expected to reduce the frequency of red light running and illegal speeds. Unfortunately, no pre-installation data is available to determine the size of this effect since the cameras themselves were used for data collection.

It is clear from the results presented here that the number of drivers disobeying a red light or exceeding the speed limit continued to decline for at least the first year after the installation of a camera and warning signs. In this sense safety cameras appear to generate a worthwhile improvement in driver behaviour. The slow improvement over time suggests some kind of learning by the population of drivers passing through the camera sites.

One possibility is that a small group of regular users of the road who habitually run red lights or speed through intersections only change their behaviour at particular locations when they actually receive an infringement notice for a violation at that location. Since the opportunities to run a red light or speed through a monitored intersection are low it may take some time for such drivers to be issued an infringement notice from a particular location (the average monitored intersection initially recorded 2 red light violations per day and 10 speeds 10 km/h or more over the speed limit per day).

While the relative size of such an effect cannot be determined given the data that is available, the differences between the results for red light running and various levels of speeding do provide some insights.

Red light running and low level speeding rates decrease nearly linearly over the first year of operation. This is suggestive of a general ongoing raising of awareness of the safety cameras and a slow change of behaviour consistent with the majority of drivers slowly becoming aware of the presence of the cameras as more of them notice the signs on the side of the road, the boxes housing the cameras or the flashes indicating the recording of an infringement. Since these kinds of offences can be due to a failure of attention rather than a voluntary choice, drivers paying more attention could be expected to lead to slight and ongoing reductions.

The rapid drop in high level speeding offences during the first few weeks of camera operation is more suggestive of a small group of drivers who habitually speed, are caught at a particular intersection, and then adjust their speeding behaviour for that intersection immediately.

The more severe consequences of being caught at a higher level of speeding may also play a role. For drivers with a full South Australian driver's licence, the demerit points and fines associated with the different speeding infringement levels are shown in Table 5.1. If 12 or more demerit points are accumulated by a driver over any three year period, that driver will be disqualified from driving for a certain amount of time as indicated in Table 5.2. However, the relatively severe consequences for red light running (3 demerit points and a fine of \$391) were not associated with a rapid drop in offences.

Table 5.1  
Demerit points and fines for South Australian drivers (June 2009)

| Speed infringement severity | Demerit points | Fine           | Automatic driving disqualification period |
|-----------------------------|----------------|----------------|---|
| <15 km/h                    | 1              | \$182          | -   |
| 15 - 29 km/h                | 3              | \$290          | -   |
| 30 - 44 km/h                | 4              | \$435          | -   |
| 45+ km/h*                   | 6              | \$600 - \$1000 | 6 months                                  |

\* A subsequent speeding infringement of 45+ km/h incurs a fine of \$700 - \$1200 and an automatic driving disqualification of 2 years

Table 5.2  
Driving disqualifications associated with accumulation of demerit points for full South Australian drivers licence holders (June 2009)

| Total demerit points over a 3 year period | Automatic driving disqualification period |
|---|---|
| 12 - 15                                   | 3 months                                  |
| 16 - 20                                   | 4 months                                  |
| 20+                                       | 5 months                                  |

## Acknowledgements

---

This study was funded by the South Australian Department of Planning, Transport and Infrastructure (DPTI) through a Project Grant to the Centre for Automotive Safety Research. The DPTI Project Manager was Matthew Leyson.

The Centre for Automotive Safety Research is supported by both the South Australian Department of Planning, Transport and Infrastructure and the South Australian Motor Accident Commission.

South Australia Police supplied the infringement data, provided assistance with its interpretation, and helped with the identification of safety camera locations.

The Safety and Regulation Division of DPTI assisted with the identification of safety camera locations and provided historical information.

The views expressed in this report are those of the authors and do not necessarily represent those of the University of Adelaide or the funding organisations.

## References

---

- Doecke SD, Grigo JAL (2011). Annual performance indicators of enforced driver behaviours in South Australia, 2009. CASR084. Adelaide: Centre for Automotive Safety Research.
- DPTI (2007). Traffic Volumes, Adelaide, viewed 1 December 2009, [http://www.transport.sa.gov.au/transport\\_network/facts\\_figures/traffic\\_volumes.asp#metro](http://www.transport.sa.gov.au/transport_network/facts_figures/traffic_volumes.asp#metro)
- Wilson C, Willis C, Hendrikz JK, Le Brocque R, Bellamy N (2011). Speed cameras for the prevention of road traffic injuries and deaths (Review). Cochrane Database of Systematic Reviews 2010, Issue 11.