roadsafetyanalysis

THE EFFECTIVENESS OF AVERAGE SPEED CAMERAS

A Report commissioned by the RAC Foundation

RAC Foundation
Mobility • Safety • Economy • Environment

The Effectiveness of Average Speed Cameras in Great Britain

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- History of speed cameras and previous analysis
- Objectives
- Collecting the data
- Problems
- Results
- Importance for those wanting to reduce collisions on roads

History of Speed Cameras in GB

- 2000 – 2007 Focus on casualty reduction
- Government sets installation criteria
  - 4 Collisions (KSI) per km in 3 years
  - 8 Collisions (PIC) per km in 3 years
  - Speed as a ‘causation factor’
  - 85th Percentile speeds > 10% + 2mph e.g. 35mph in 30mph limit
  - 20% of drivers exceeding the speed limit

POPULARITY

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Evidence for Casualty Reduction

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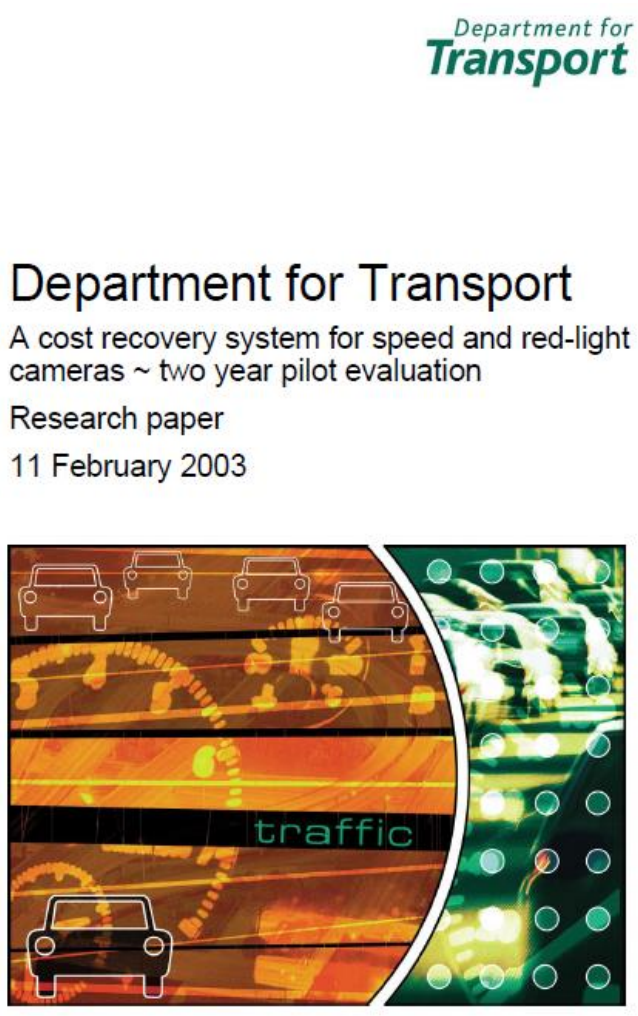
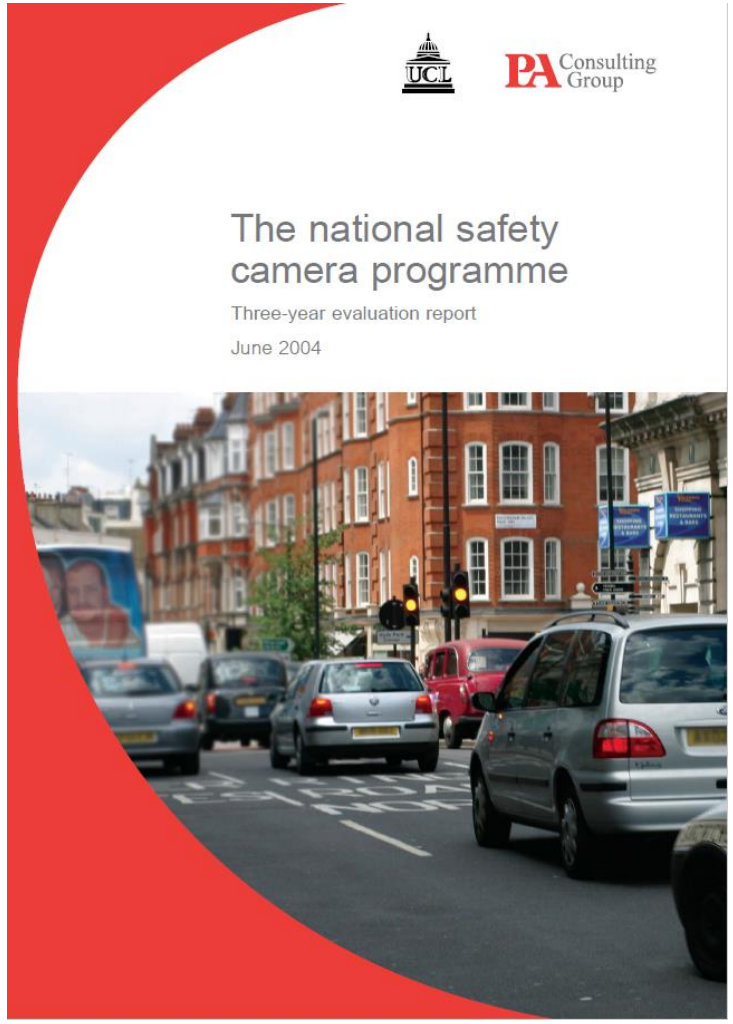
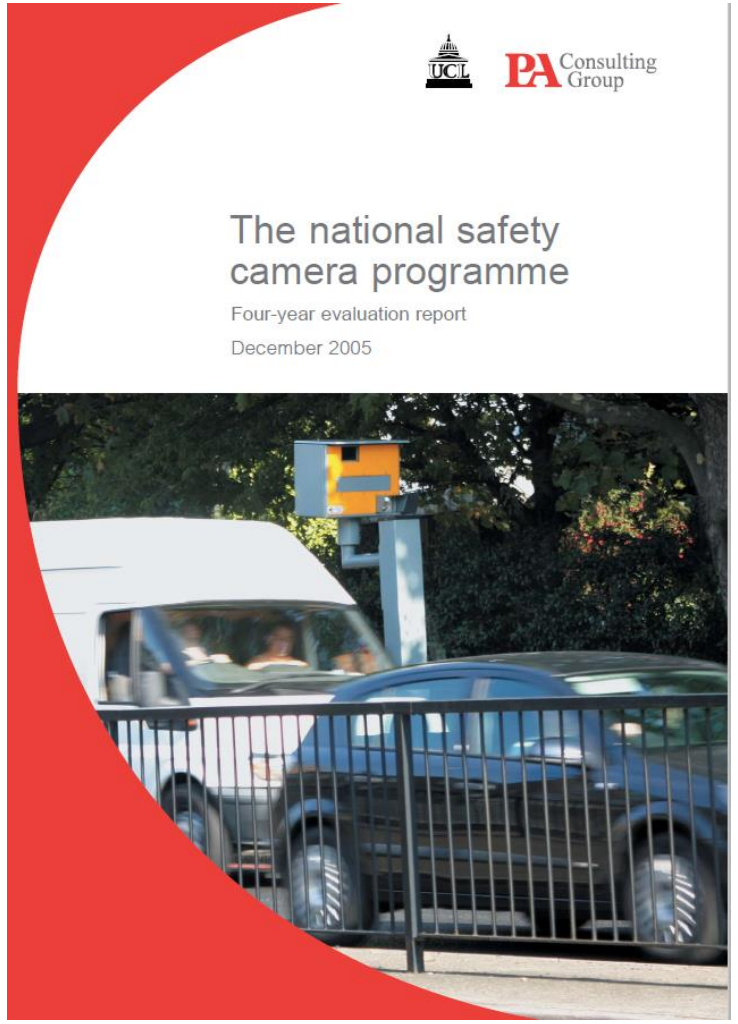


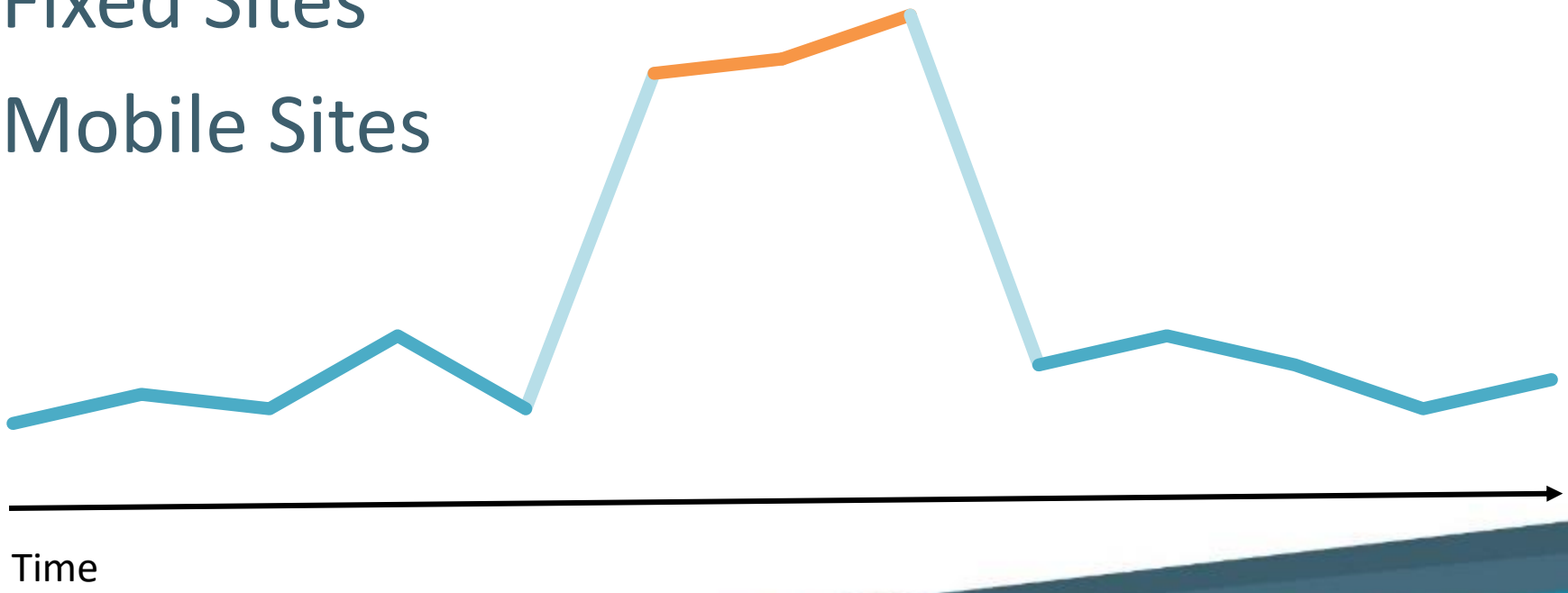




Evidence for Casualty Reduction

Evidence for Casualty Reduction

- Regression to Mean
  - 36% at Fixed Sites
  - 43% at Mobile Sites



RAC Foundation Objectives

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1. To create a national database/inventory of ASC sites of various kinds in Great Britain
2. To establish a suitably large and appropriate control group of sites to enable an understanding of the difference in collision reduction between potential ASC sites with and without such enforcement
3. To establish levels of occurrence of collisions before and after ASC installation (with consideration given to site-selection period, pre-installation and post-installation periods)

How we collected the data

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- Support from manufacturers

- Support from authorities (Police, local authorities, camera partnerships)
  - Installation dates
  - Site selection periods
  - Prior enforcement
  - Other information
- Collision data independently sourced

Map sample

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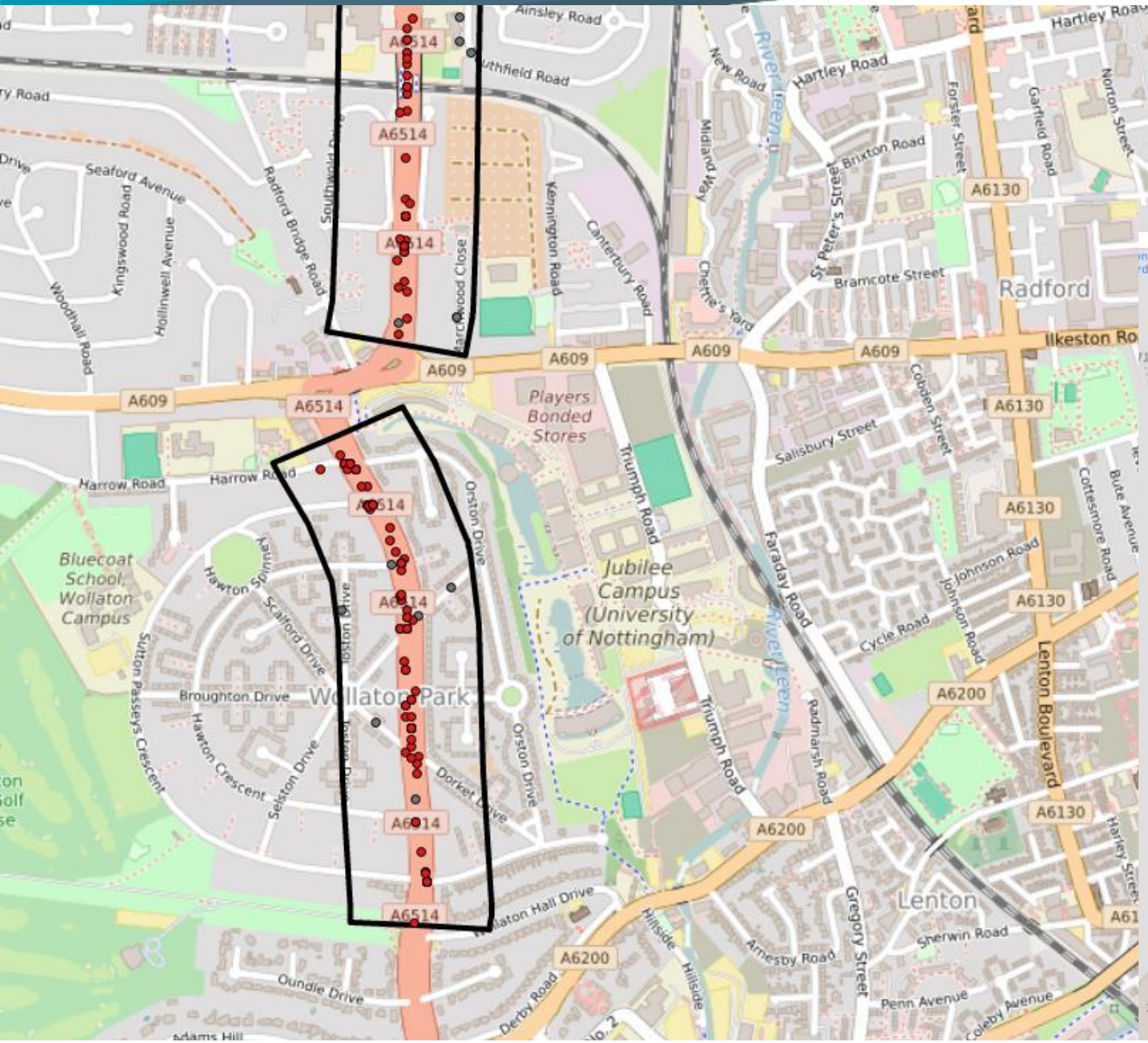
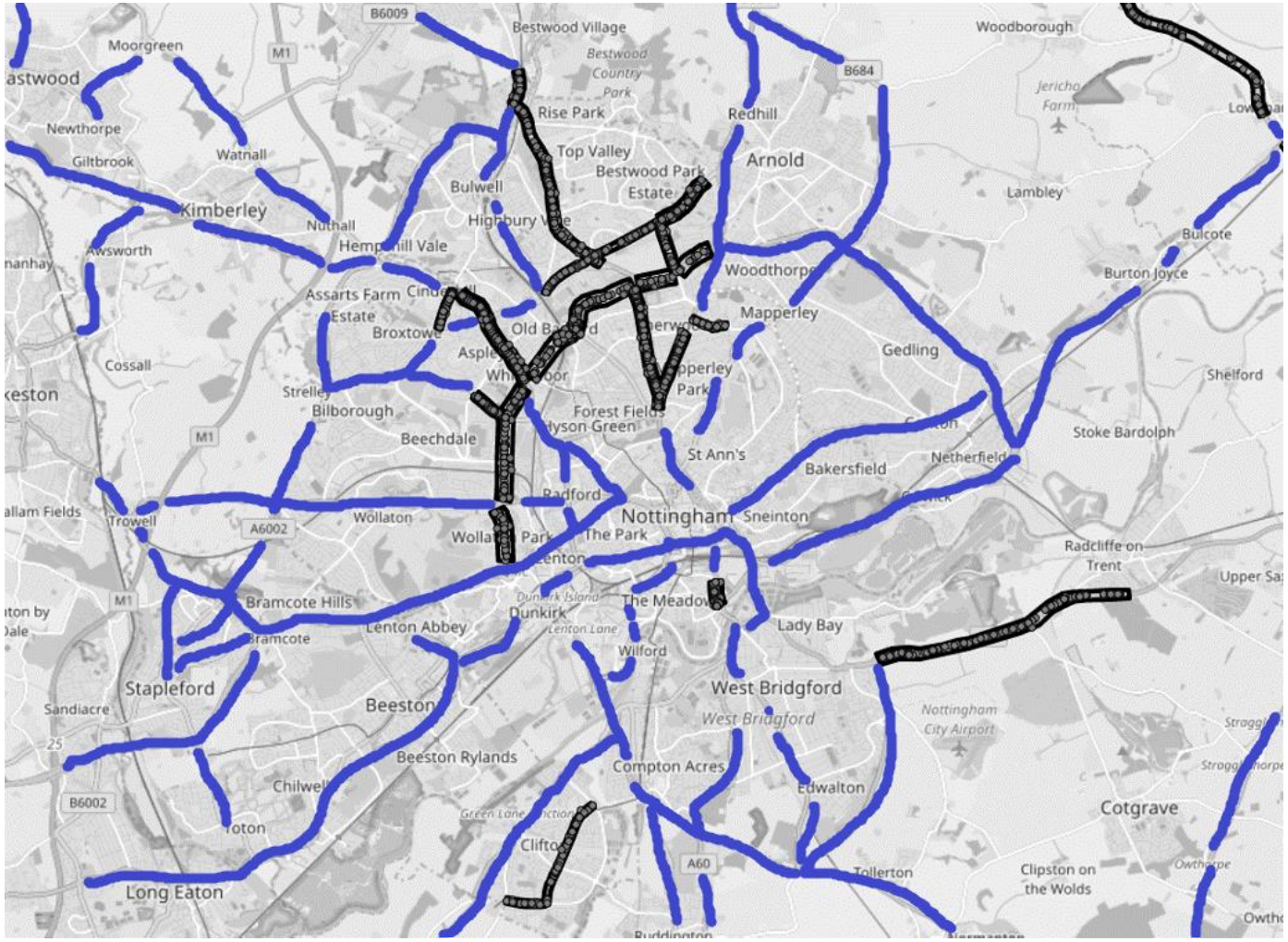


Comparison sites



GB Collisions 2005 - 2015

29%
PIC

Control sites

- Cameras considered but never installed
- 9 sections, 25km of roads

Installation history

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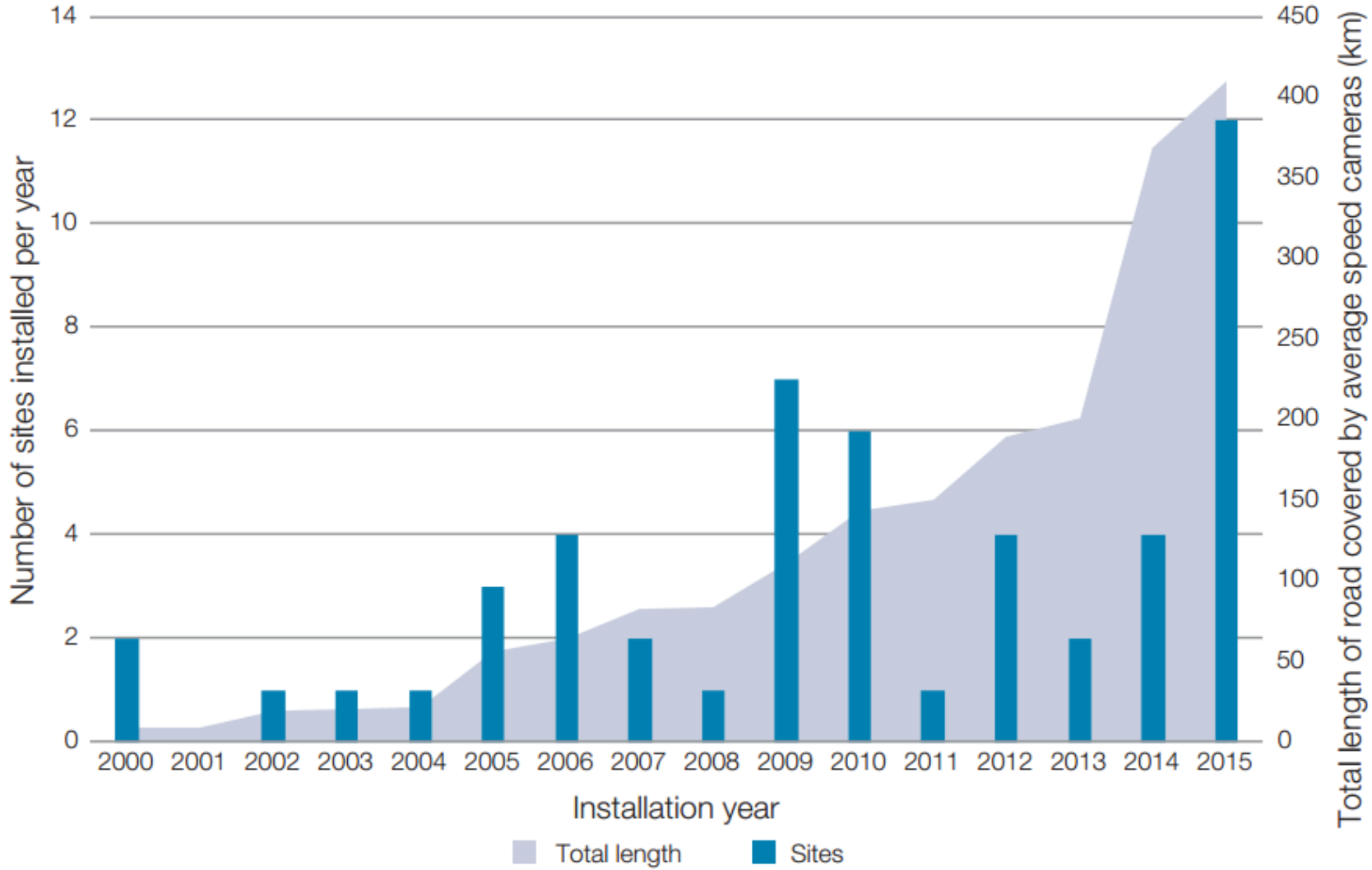
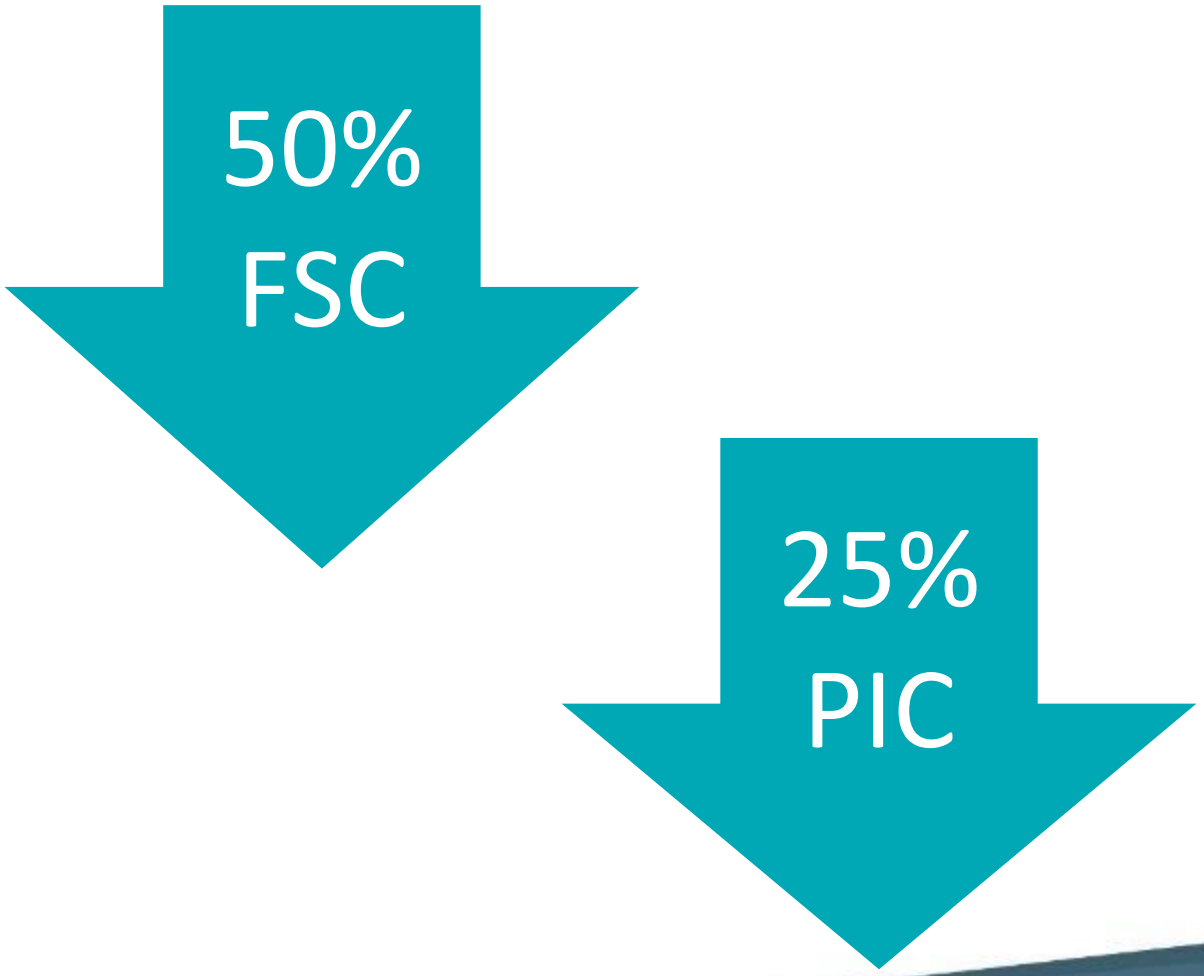


Standard “3 Before vs 3Recent” Analysis



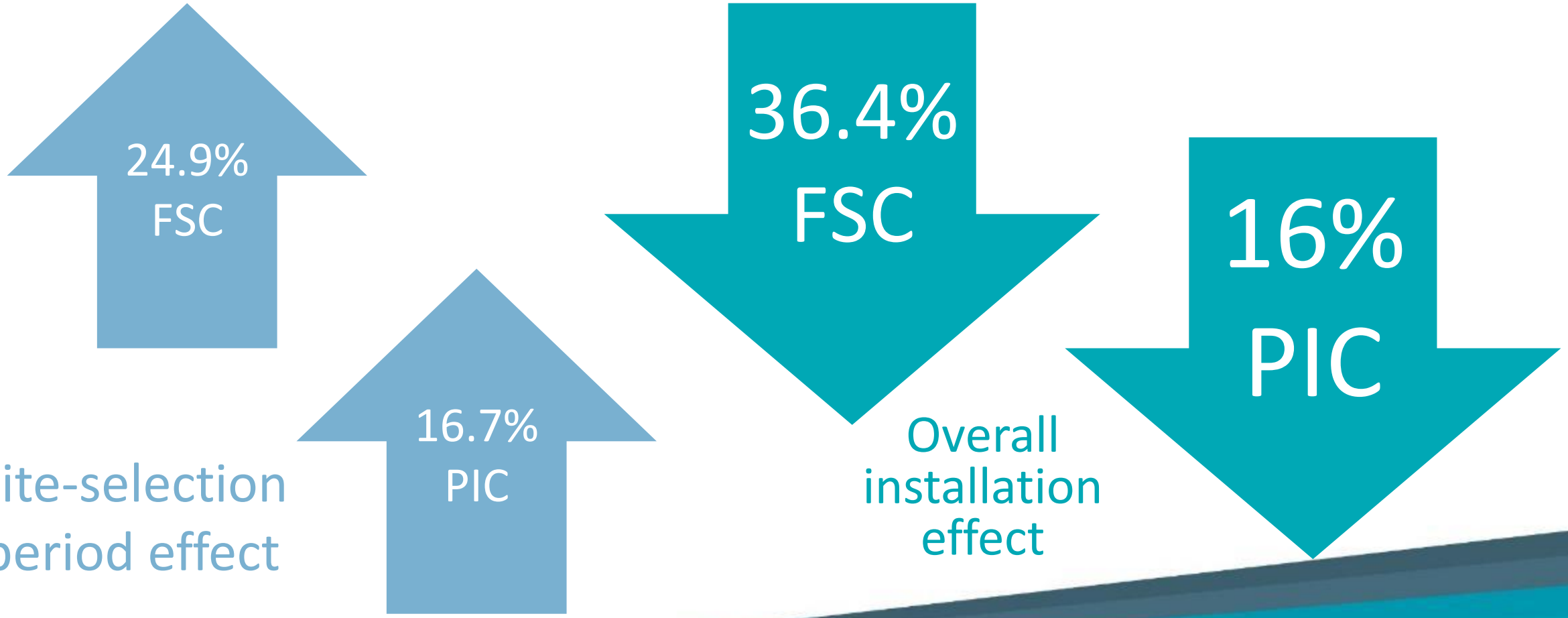
- Approach adopted by most authorities
- Doesn’t take into account trend
- Doesn’t allow for Regression to Mean

Generalised Linear Model

$$\ln \mu_{ny} = \ln P_{ny} + c_n + ub_{ny} + vc_{ny}$$

- Monthly data for each site in each period
- Takes into account collisions on other similar roads
- Estimates the effect of the SSP
- Estimates the effect of installation

Results


24.9%
FSC
16.7%
PIC
Site-selection
period effect
36.4%
FSC
16%
PIC
Overall
installation
effect

Results

- No difference in collision reduction rates at sites installed pre-April 2007 versus after
- No significant difference in effectiveness on low speed (20 – 40 mph) and high speed (50 – 70 mph) sites
- Candidate Sites – No significant change in collisions post-consideration

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