



Learning from an Analysis of Vehicle Speed Data in the GCC

PRI Conference, Tunis – Friday (Day 3)

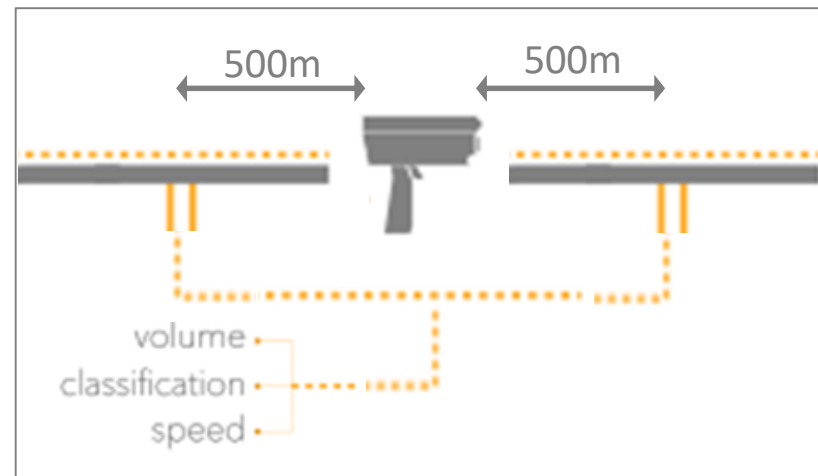
5th May, 2017

Agenda

- 1 Speed Data Collection
- 2 Findings
- 3 Implication and Alternatives

Our methodology for collecting data adheres to international good practice

- Locations on 60 and 80 km/hr roads
- 24 hours collection period
- At 2 sites, speed data also collected:
 - 500m before a speed camera¹
 - 500m after a camera
- Free travel speeds (i.e. no congestion), determined by a 4 second headway²
- Data collected using Numetric NC200 Units
 - Temporarily fixed to the road surface
 - Covering each lane of traffic



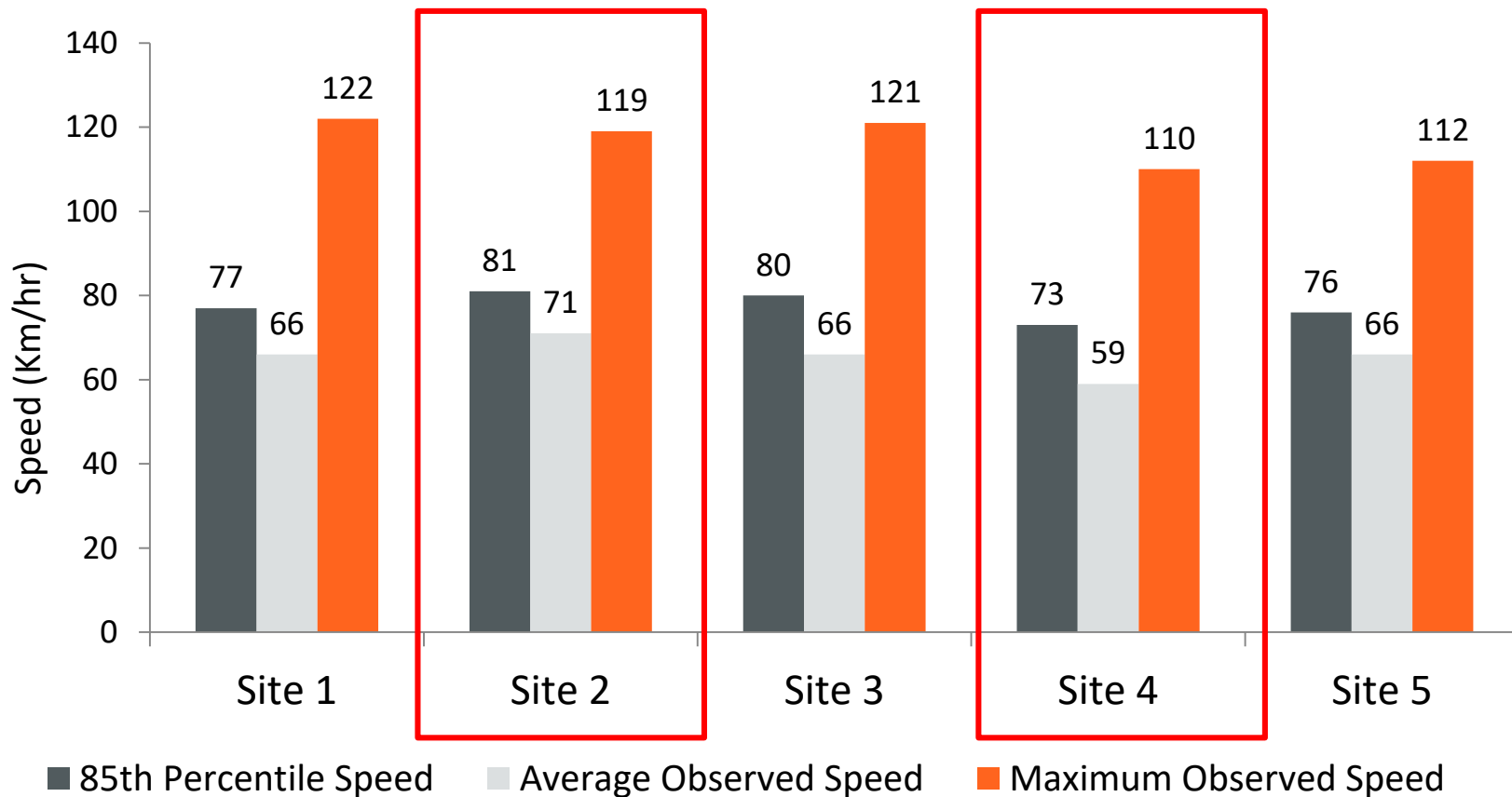
1. 500m is in line with international good practice (e.g. Liu, Zhang, Wang, Xu, 2011 or De Pauw, Daniels, Brijs, Hermans & Wets, 2014)
2. In line with the recommendations for speed surveys from New South Wales (NSW Centre for Road Safety, 2014)

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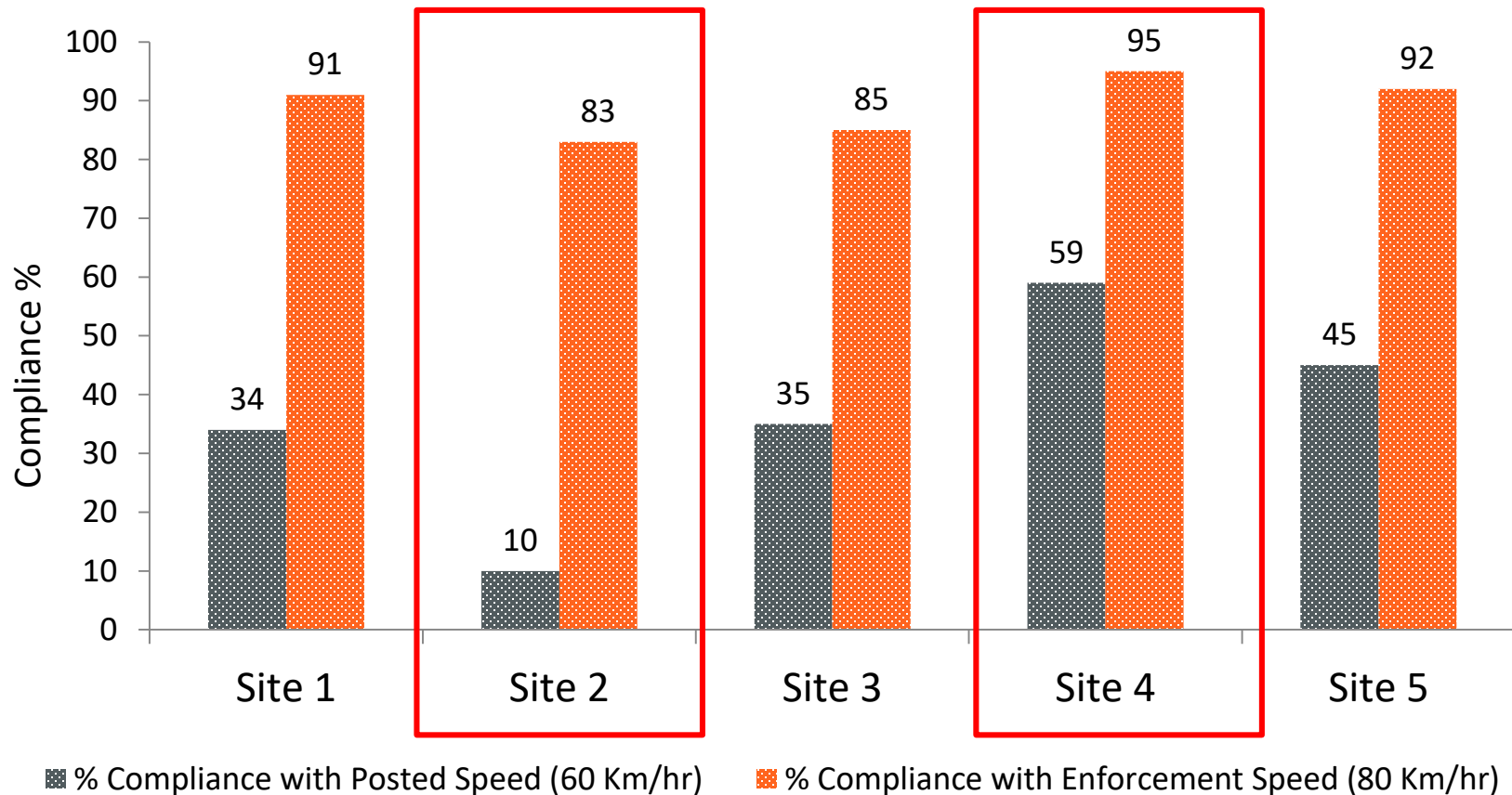
On 60 Km/hr roads, speeds regularly exceed the posted limit - with maximums close to double

Speed Profile on 60 Km/hr roads



On the same roads, compliance with both posted and enforced limits is also often very poor

Speed Compliance on 60 Km/hr roads – where the enforcement speed is 80 Km/hr



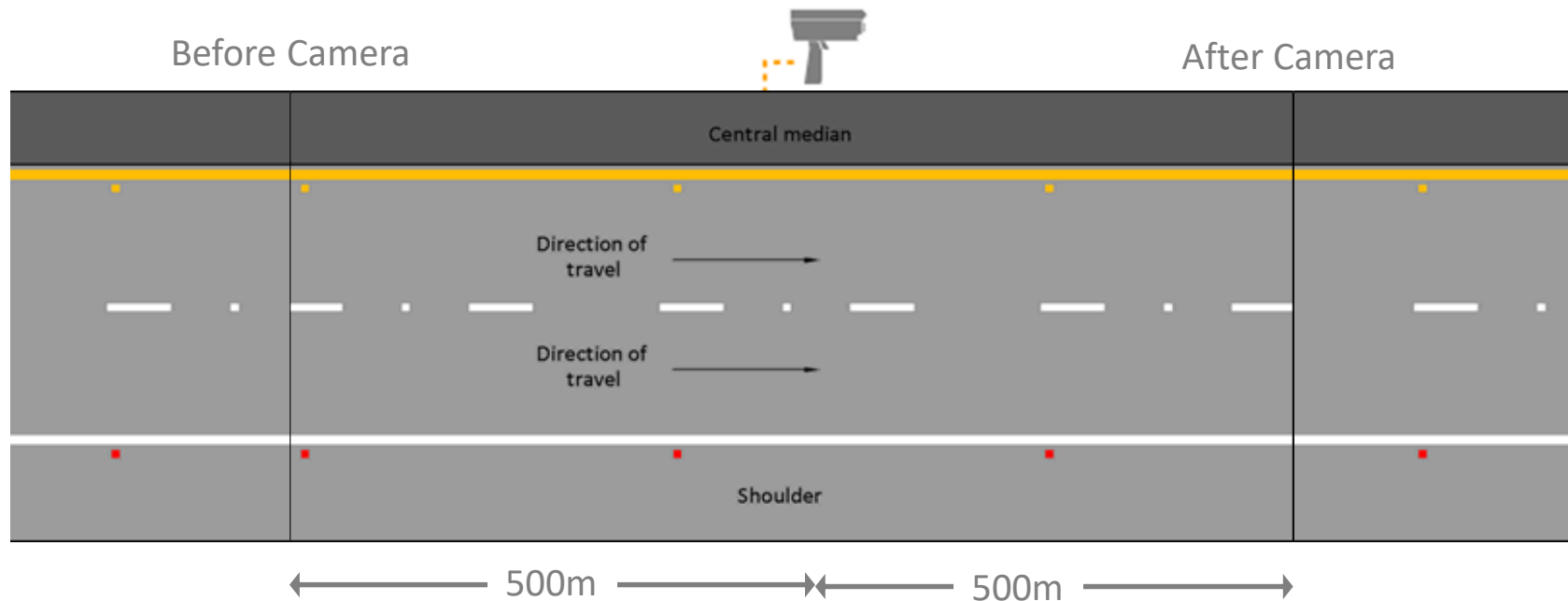
Question: does speeding behaviour change with the presence of spot speed cameras?

- **International best practice:**

- Either fully overt (e.g. UK & GCC)
 - High visibility markings and warning signs coupled with speed limit repeater signs so drivers take extra care at dangerous locations
 - Coupled with covert mobile operations.
- Covert (e.g. Australia, New Zealand) – anytime, anywhere



On an 80 Km/hr road, a spot camera creates no lasting behavioural change to speed

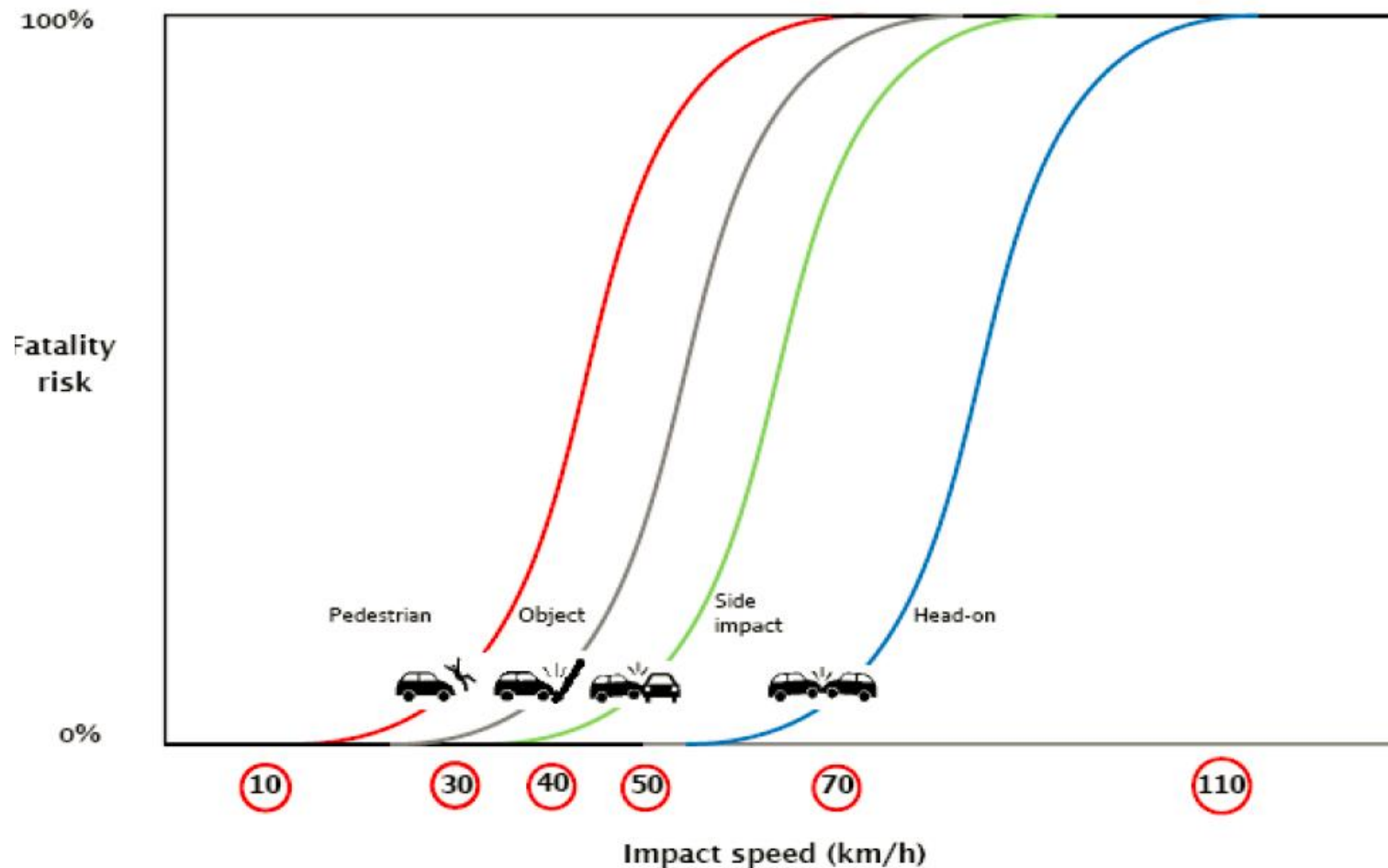


Average Speed	77	79
Max Speed	142	142
>80 Km/hr	43%	48%
>100 Km/hr	7%	6%

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In-depth research has identified the speeds at which most people survive different types of impacts



Point to Point (Average Speed) cameras are increasingly being used to enforce speed compliance



How do they work?

- $\text{Speed} = \text{Distance} \div \text{Time}$
- Basic requirement is accurate measurement of both and a method of carrying out the calculation
- ANPR
- Route strategy



Their usage is increasing for a number of different reasons

- Used widely throughout UK, Europe and elsewhere
- Ideal for multi-lane trunk roads
- Initially mainly used in UK for work zones
- Increased compliance levels
- Improved road safety
- Traffic flow management
- More acceptable to society (perceived as fairer)
- Cost effective (mainly through safety improvements)

A UK case study from Essex (just to the East of London) helps to demonstrate the benefits



- A127 Essex, UK
- 10km section
- East/West route links London to Southend-On-Sea (population approx 170k)
- 30-35k vehicles in each direction per day
- Highways Authority - Essex County Council
- Scheme completed January 2009



Pre-scheme crash data shows several fatalities – as well as serious and slight injuries



3 Year crash data:

- Crashes
 - 4 x Fatal
 - 28 x Serious
 - 139 Slight

(Scheme aim to reduce casualties by 50%)

- Decision to reduce speed limit on 6.2km of the route from 70mph (112 kph) to 50mph (80kph) to improve driver behaviour, raise concentration levels and increase ability to react.
- Pre-implementation 85th %ile speed on route 66mph (105kph)

Post-scheme crash data shows that fatalities have reduced to zero, along with a range of other benefits



3 Year post-implementation data:

- **Crashes**
 - 0 x Fatal (4)
 - 12 x Serious (28)
 - 61 Slight (139)
- **Journey times**
 - 70mph sections, average = 65mph (104kph) = JT + approx. 20 secs
 - 50mph sections, average = 51mph (81kph) = JT + approx 100 secs
- **Traffic Volume**
 - Journey Traffic Volume increase by 1.8%

- Spot speed cameras have only a limited effect on behaviours related to speed
- Point to point cameras have been demonstrated to manage speed effectively, thereby reducing fatalities
- They also provide a range of other benefits – such as greater social acceptance and increased traffic flow

شكرا Thank You

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