

The Casualty reduction Benefits of Average Speed Enforcement Technology

Trevor Hall

Road Safety Support

Saving lives delivering justice



Trevor Hall

Managing Director Road Safety Support



- Road Safety Former UK police officer 32 years road policing experience
- Manages the UK Government Home Office approval testing process for Enforcement Technology
- National safety camera co-ordinator
- Managing Director Road Safety Support
- Member of the US International Association of Chiefs of Police Highway Safety Committee

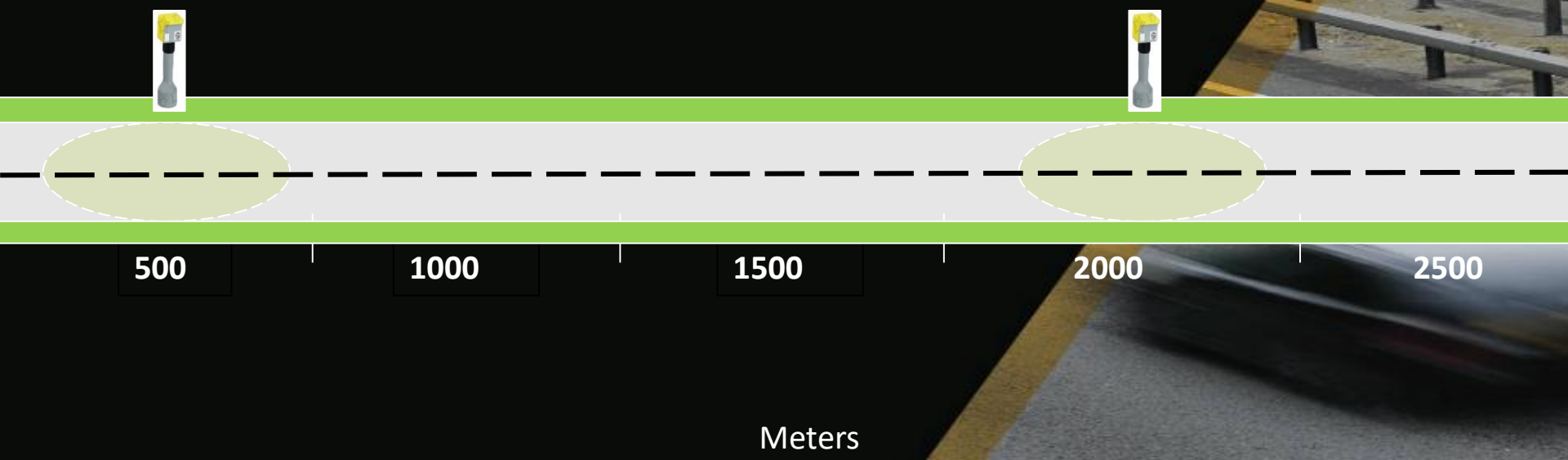


Benefits of Average Speed Enforcement Technology



Benefits of Average speed Camera surfing

Where Spot fixed cameras are installed along a route, a phenomena known as **Camera Surfing** can occur as Drivers get familiar with the camera layout, speeding up and slowing down as they enter the enforced sections of the camera's



Camera surfing

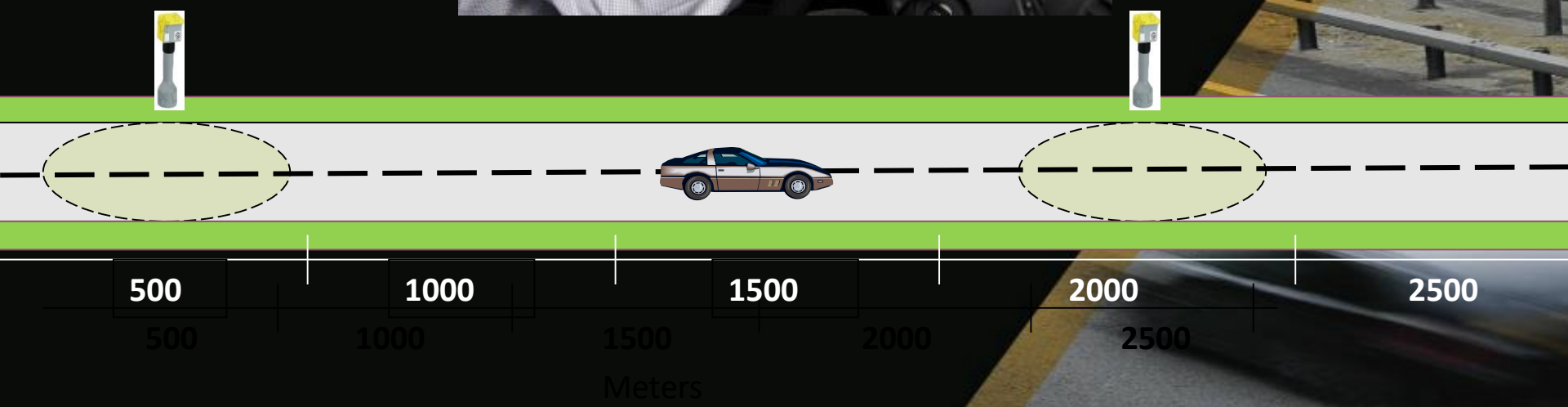
Although collisions
 behaviour to try and

Spot cameras do work
 and have to be combined
 enforcement and Road



a change in driver

used as a route strategy
 tegies, such as mobile



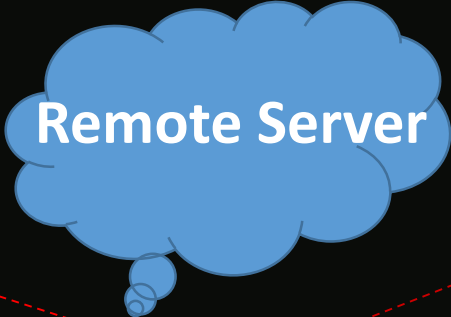
Benefits of Average speed

Distributed Average Speed Cameras

- Average speed (section control) cameras capable of providing a total traffic calming solution and having a major effect on driver behaviour over a wide area.



Benefits of Average speed

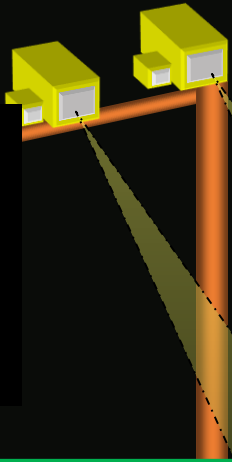


Remote Server

AB 01 CDE

AB 01 CDE

Matched



CLYDESDALE POLICE
PAGE 111

OFFICER IN CHARGE
CLEVELAND POLICE
COMMUNICATIONS OFFICER
CLIVE AND POLICE HEADQUARTERS
POLICE STATION
HEALS LANE
LEWIS
TELEPHONE 352179

Conditional Offer of a Fixed Penalty

Reference: UNV Date: 06/05/2011

The Police have evidence that on 06/05/2011 at 18:37 hours you were the driver of a Vehicle Registration Number: [REDACTED] When the speed of EXCESS SPEED 80MPH (SPECARTORDER) At [REDACTED] STREET (one-way) Speed measured: 83 mph

THE ABOVE OFFENCE CARRIES A MAXIMUM FINE OF £1000 AND A REVOKING LICENCE ENDORSEMENT OF 3 OR MORE POINTS. HOWEVER, UNDER SECTIONS 2977 ROAD TRAFFIC OFFENCES ACT 1988, AS AMENDED, THIS MATTER MAY BE DEALT WITH BY THE ISSUING OF A NOTICE, BY PAYMENT OF A FIXED PENALTY OF £80 AND A POINT ENDORSEMENT ON YOUR DRIVING LICENCE.

If you wish to be dealt with by the Fixed Penalty procedure you must within 30 days of the date of this notice make a payment to the Fixed Penalty Office and complete your driving licence. If a Fixed Penalty is not paid within the 30 day period, you will be liable to prosecution. See Acceptance of Conditional Offer below for the Fixed Penalty Office and complete your driving licence. See Acceptance of Conditional Offer below.

Please write to the Central Fiscal Office at the address below if it is your wish to request a court hearing.

Yours faithfully,
[Signature]

Mr A Baker in behalf of the Chief Constable

If your licence does not satisfy the requirements your licence and your Fixed Penalty payment will be returned to you. Proceedings will then be commenced against you.

ACCEPTANCE OF CONDITIONAL OFFER

Notice has been served on you by the Police. You are invited to accept the offer of a fixed penalty and a point endorsement on your driving licence. If you accept the offer, you must pay the fixed penalty and complete your driving licence within 30 days of the date of this notice. If you do not accept the offer, you will be liable to prosecution. See Acceptance of Conditional Offer below.

IMPORTANT: THE CONDITIONAL OFFER CAN ONLY BE PROCESSED IF ALL THESE FIELDS ARE FILLED IN TOGETHER.

DRIVER'S STATEMENT (If there are other vehicles)

Have any other vehicles been involved in the offence?
 Yes/No
 If Yes, give details of the vehicle and the driver's name and address.
 If No, leave blank.

Full Name: _____
 Full Address: _____
 Postcode: _____
 Daytime Tel: _____
 Mobile: _____
 Email: _____
 Date: _____
 Signature: _____

DRIVER'S STATEMENT (If there are no other vehicles)

Have you been involved in any other offences in the last 12 months?
 Yes/No
 If Yes, give details of the offence and the date.
 If No, leave blank.

Full Name: _____
 Full Address: _____
 Postcode: _____
 Daytime Tel: _____
 Mobile: _____
 Email: _____
 Date: _____
 Signature: _____

IF ENCLOSED E 80.00 AND MY DRIVING LICENCE.

Baseline (70m – 20Km+)
Can link cross lane journeys

Casualty Reduction:

- Average speed cameras are currently used in many permanent schemes in the UK.
- In permanent schemes that are more than 3 years old, the number of people Killed or Seriously Injured (KSI) drops by **>70%** on average.
- Each scheme represents a **£1.25m** annual saving to the economy, through casualty reduction.



Benefits of Average speed

Safer, **Smoother**, Greener, Fairer

Traffic flow improvements:

High compliance delivers:

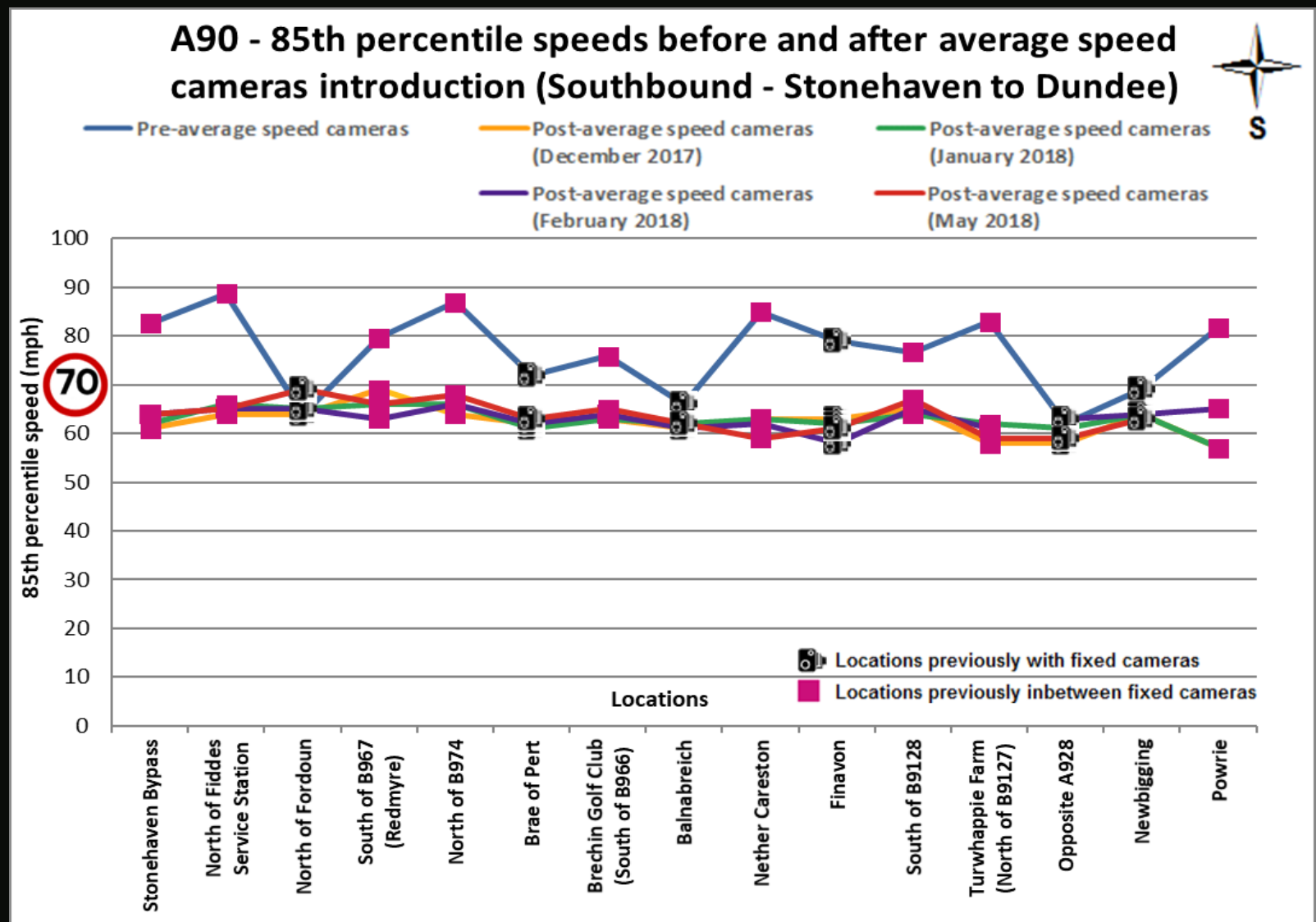
- Consistent speeds
- Uniform headways
- Little braking
- Few collisions.
- Conveyor belt efficiency.

Delivers good journey reliability.



Benefits of Average speed

Before and after treatment example of smoother traffic flow



Safer, Smoother, **Greener**, Fairer

Environmental Benefits:

High compliance results in:

- Smooth traffic flows
- Reduced accelerating
- Less braking
- Quieter

This dramatically improves fuel economy and reduces CO2 emissions and road noise.



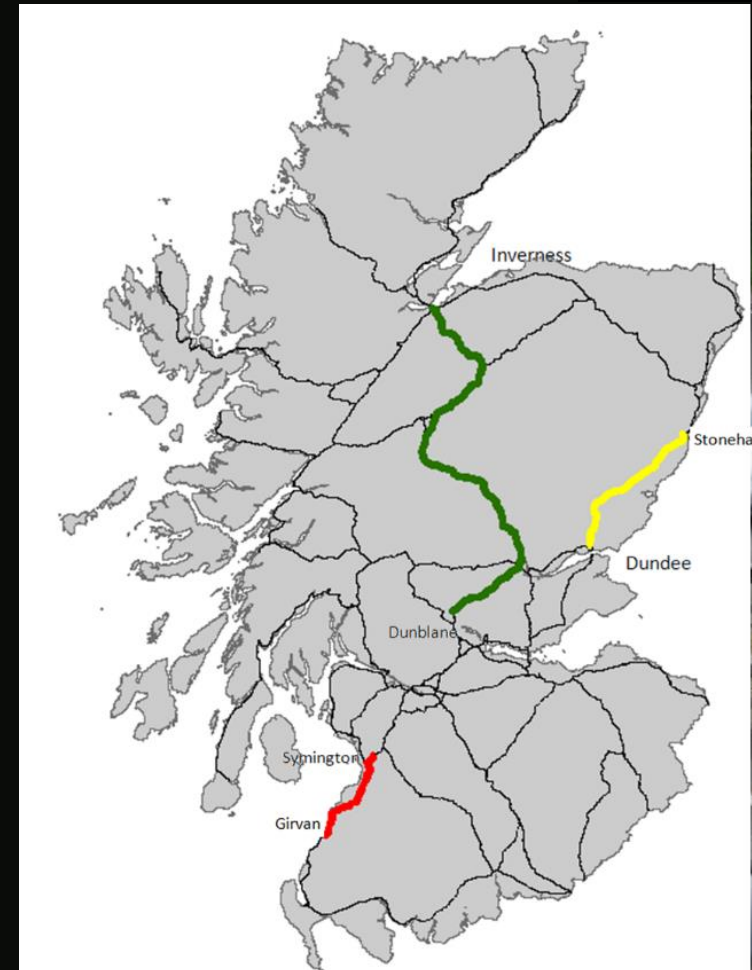
Fairer Solutions:

- The number of tickets issued is always low.
- Only sustained speeding is captured.
- 1 in 10,000 journeys ticketed typically.
- The media and public are more accepting.



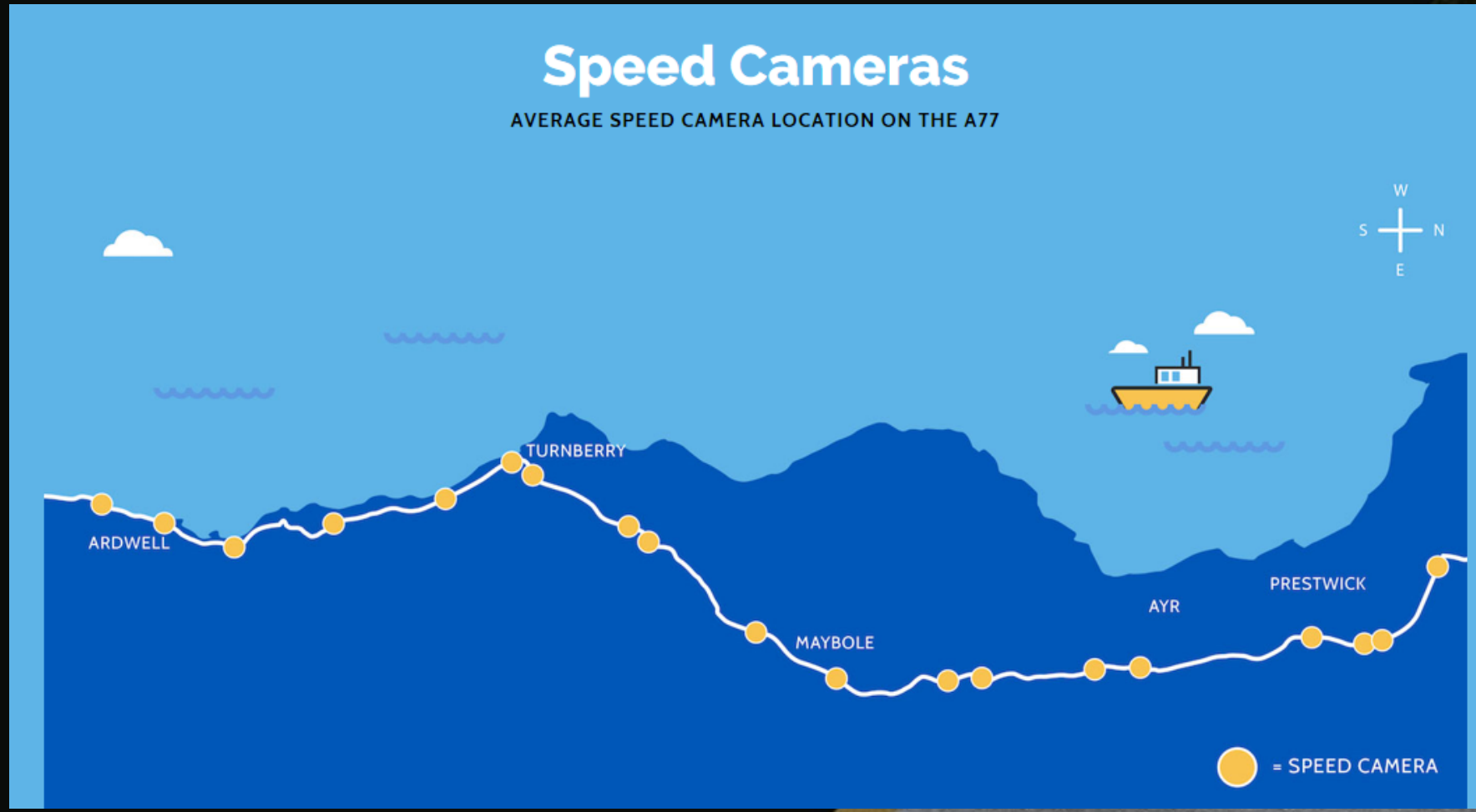
Average Speed Cameras – Case Studies

- Scotland has many average speed installations - <350km of coverage
- 2005/18: **A77 55km**
- 2014: **A9 220 km**
- 2017: **A90 80 km**
- 2017/18: 4x local roads 4km



A77, West Coast

Scotland's first average speed route, 55km of cameras

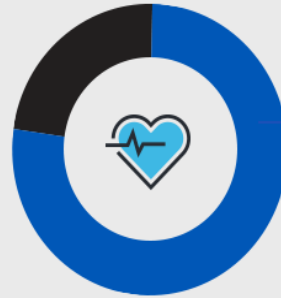


A77 Jenoptik Cameras

- Conspicuous
- Not just 'cameras'

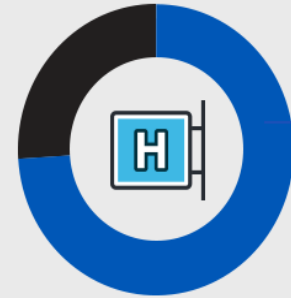
Results

OVER THE LAST 3 YEARS



77%

fewer deaths
compared to the
2005 baseline



74%

fewer serious injuries
compared to the
2005 baseline



Benefits of Average speed

Site Code 111
 Site Description A675 Belmont 50 southern NB cam 1 to cam 2
 Date and Time 18/10/2017 23:09:41
 Speed /mph 52

PRIMARY BASELINE MEASUREMENT
 52.56mph over 1868.29 metres.

SECONDARY BASELINE MEASUREMENT
 52.54mph over 1868 metres.

The SPECS 3 Average Speed Enforcement system is Home Office Type Approved and uses Automatic Number Plate Recognition (ANPR) to time vehicles travelling between two cameras.

The time taken to travel and the distance travelled are accurately measured and are used to calculate a vehicle's average speed.

The system is calibrated and operated in accordance with Home Office Type Approval.



Entry Images

PRIMARY TIME STAMP
 18/10/2017 23:08:22.06

SECONDARY TIME STAMP
 18/10/2017 23:08:22.06



Exit Images

PRIMARY TIME STAMP
 18/10/2017 23:09:41.59

SECONDARY TIME STAMP
 18/10/2017 23:09:41.59

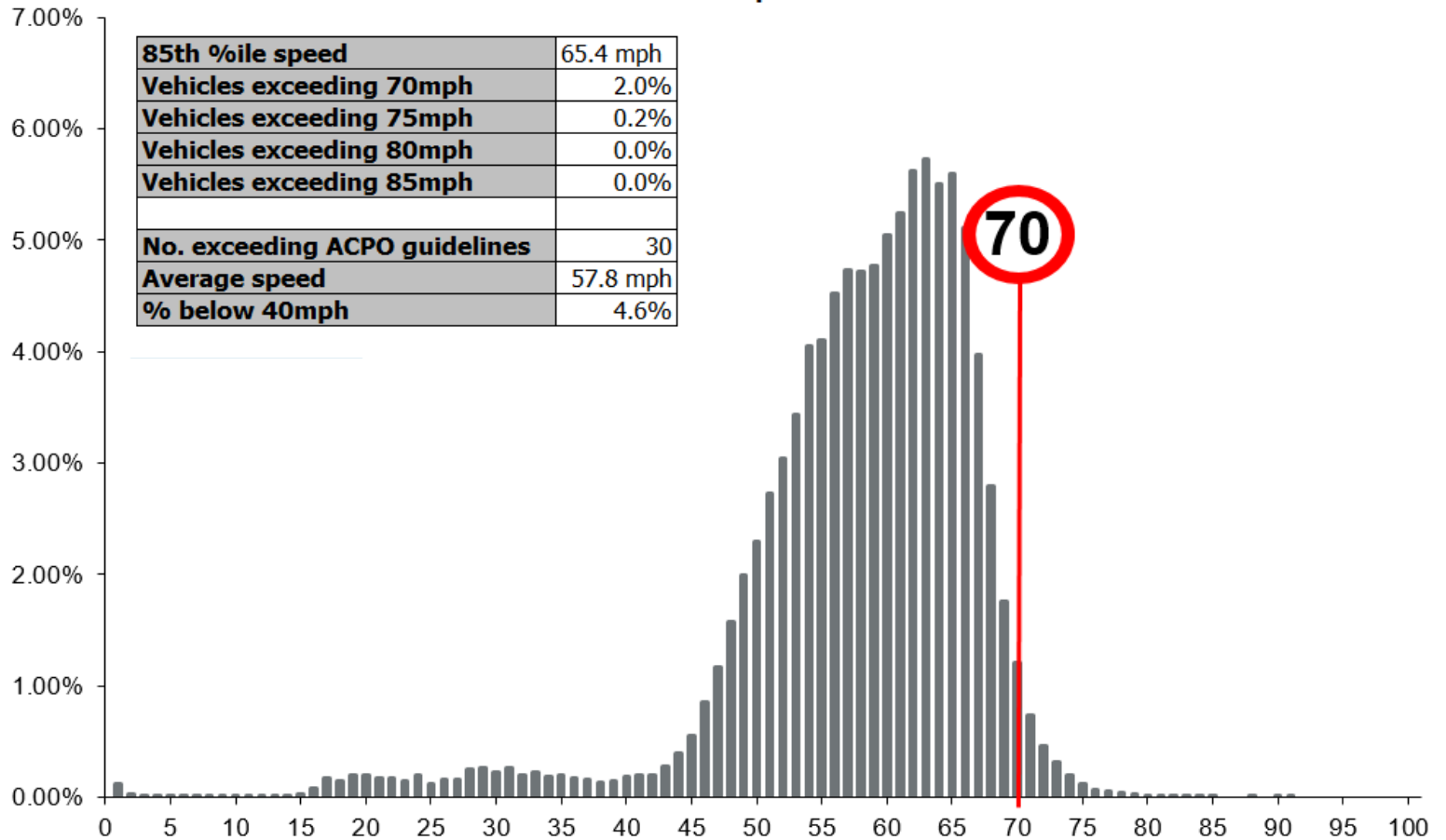
THE PRIMARY SPEED MEASUREMENT IS ROUNDED-DOWN AND USED AS THE SPEED OF THE OFFENCE.

HOME OFFICE TYPE APPROVAL REQUIRES THE INDEPENDENT SECONDARY SPEED MEASUREMENT TO BE WITHIN 10% OF THE PRIMARY

A77 Speed Profile

A77 Upgrade Northbound - 70mph

August 2016
Speed Profile Chart



A9 Scotland, Europe's largest enforcement project by Jenoptik

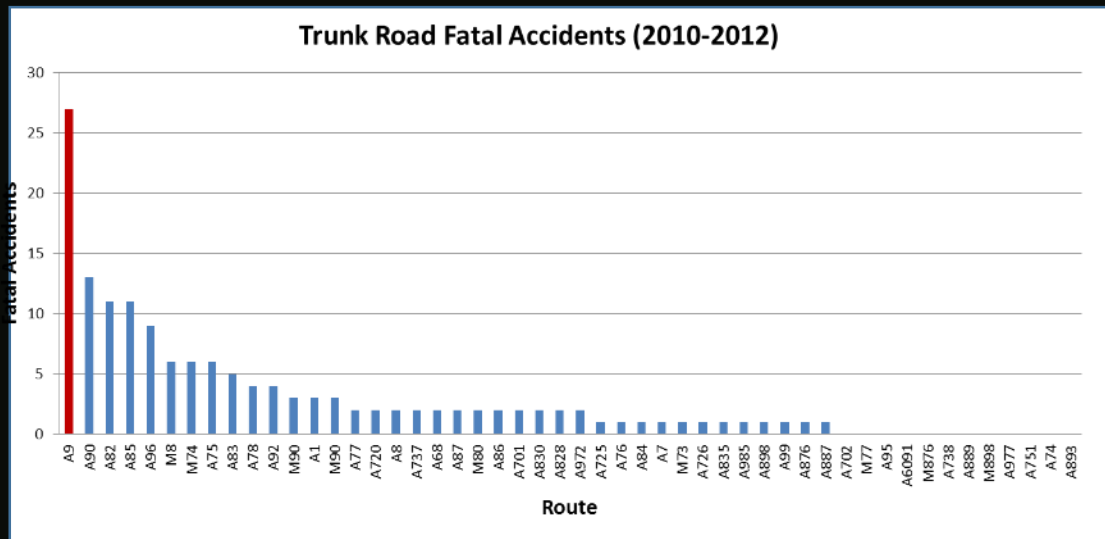
- 220km of average speed enforcement
- Delivered using SPECS3 & Infra Red lighting
- Operational from October 2014
- Transport Scotland scheme
- Hugely political!
- Broken into 'chunks' of 5km
- HGV limit raised to 50mph.



Case Study – Changing Behaviour

A9 Background and Overview

- Scotland's 'road of death'?
- Scotland's longest A class road
- From sea level to 460m
- Coastal to mountain setting, ski resort & national park
- Traffic volumes variable and seasonal



A9 Background and Overview

- **58 deaths** between 2008 and 2012
- High proportion of KSI injuries
- **£3bn** programme to dual the A9, 2025 target
- Minister requested a multi agency group
- Reduce casualties before dualling is completed

Year	Fatal	Serious	Slight	Total
2008	15	34	238	287
2009	7	55	276	338
2010	15	38	266	319
2011	13	36	196	245
2012	8	33	211	252
TOTAL	58	196	1187	1441



A9 Background and Overview



Collisions – many causes, not just speed:

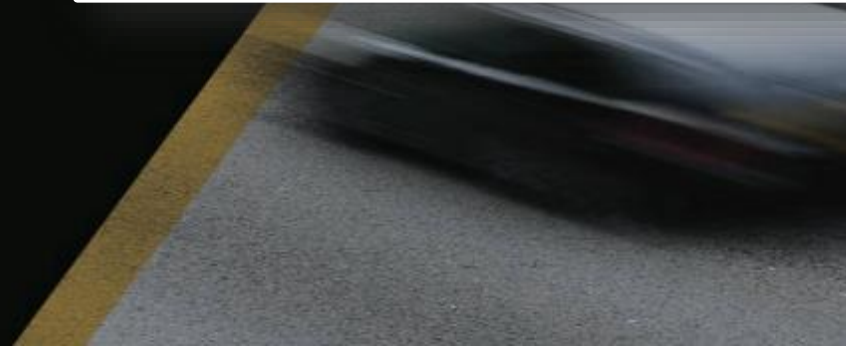
- Collisions at junctions
- Many HGV collisions
- Loss of control
- Failing to look properly
- Careless/reckless driving
- Inappropriate speed
- Poor turning practices
- 200 vehicles per day at +100mph



A9 Technology Solution

A9 SPECS3 Installation – Europe's longest enforcement project

- 220km of average speed enforcement
- Infra Red lighting
- Installed for 4 years
- Operational 24/7 and in darkness
- Wireless communications
- Driver behavior has changed



A9 Technology Solution

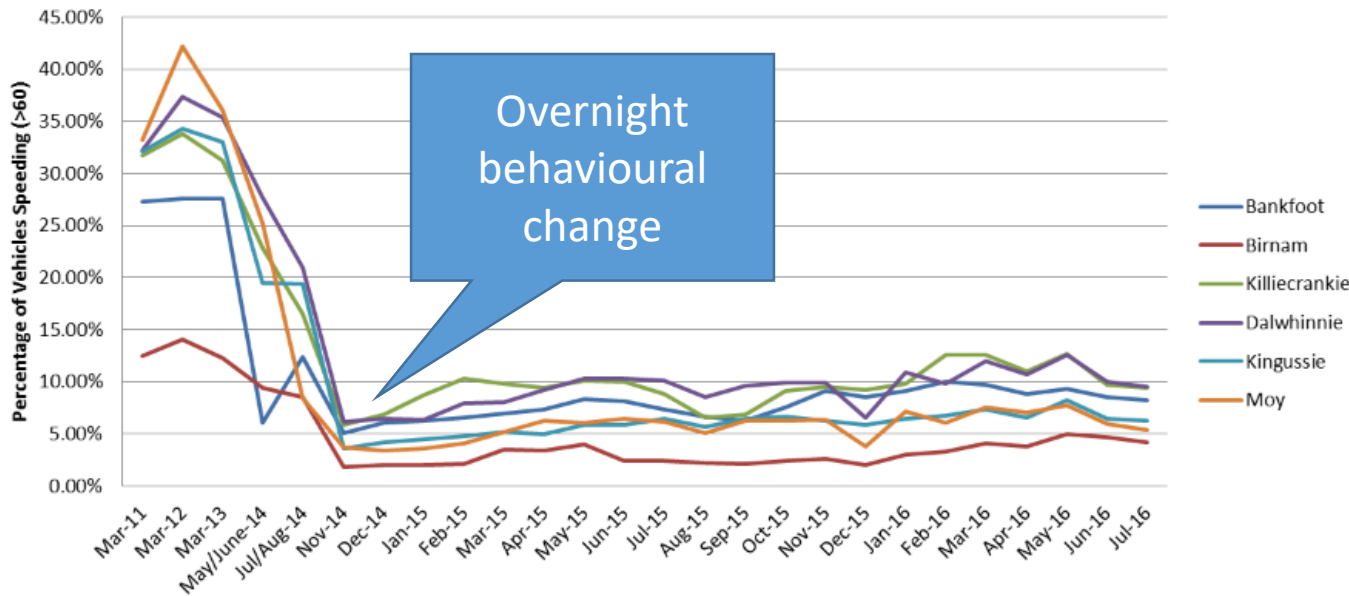
Driver behavior has changed

Highly distinctive columns

- 24/7 operation
- Infra-Red flood lighting on dark road
- Flexible configuration
- Conspicuous signage
- Cost circa £2m



Percentage of Vehicles Speeding (>60)



Case Study – Changing Behaviour

A9 Results Summary

- Fatalities down by **33%**
- KSI casualties down **62%**
- All injury casualties down **50%**
- Speed reductions being maintained
 - 1 in 10 vehicles > limit – (vs 1 in 3)
 - 1 in 250 vehicles 10mph > – (vs 1 in 10)
- 13 vehicles per day ticketed (0.03% of volume)
- 43% fewer delay incidents
- Improved journey reliability
- Average >5% traffic growth
- Public opinion supportive



The Inverness Courier

Published: 02/09/2016 16:09 - Updated: 02/09/2016 16:11

Drop in deaths on A9 is 'extremely encouraging'

Written by Emma Crichton

NEW figures showing fewer deaths and accidents on the notorious A9 have prompted Scotland's transport minister to claim the route is safer since average speed cameras were installed.

Humza Yousaf welcomed the reductions but said more needs to be done.

"Safety is an absolute priority and every road death is one too many," he said.

"The latest A9 Safety Group figures indicate the route is much safer since the average speed cameras were introduced.

"This extremely encouraging picture is to be welcomed and I would urge all A9 users, particularly the small minority who continue to take risks, to play their part in reducing accidents as we progress our billion A9 dualling programme."

The latest information from the A9 Safety Group showed the number of serious injuries and deaths between Perth and Inverness have dropped in an 18-month period since the average speed cameras were introduced.

There were seven fatal collisions in a period between when the cameras were switched on in October 2014 and April 2016, only slightly fewer than the 18-month average of 7.5 from 2011 until 2013. In total, there have been 39 collisions on the stretch since the cameras have been operational, a drop of 34.5 per cent compared to the 18-month average for 2011 to 2013. The accidents claimed the lives of eight people, a drop from the 18-month average of 11 deaths from 2011 to 2013.

Mike Burns, who runs the campaign group A9 Average Speed Cameras, said:

"Most of us were of the opinion that the cameras were wrong but I'm first to admit that maybe it was me that was unable to see the wood for the trees!"

Benefits of Average speed

Media campaigns,
Its important that long term schemes are
Supported through marketing to enhance
The deterrent effect of the scheme.

SafetyCameraScotland @safetycamscot

The weekend is nearly here.... but don't be in too much of a rush to get home. You don't want a £100 fine and three points on your licence to ruin that Friday feeling.
[#KnowYourLimits](#)

	Edinburgh	North City Centre	Leith	Monrovia
Cars and Motorcycles (including car derived vans up to 2 tonnes maximum laden weight)	30	60	70	70
Car Towing Caravans (including car derived vans with motorcycles)	30	50	60	60
Buses and Coaches (not exceeding 10m in overall length)	30	50	60	70
Goods Vehicles (not exceeding 23 tonnes maximum laden weight)	30	50	60	70
Goods Vehicles (exceeding 23 tonnes maximum laden weight)	30	40	50	60

12:30 AM · 5 Apr 2019

1 Retweet 2 Likes

A9 Average Speed Cameras are not the answer
@thereala9problem

- Home
- About
- Photos
- Posts
- Community
- Info and ads
- Create a Page

Scotland wide roll out of that in the next few months
https://www.thecourier.co.uk/.../average-speed-cameras-intro...



Average speed cameras to be introduced on A90 between Dundee and Stonehaven - The Courier

45 likes 67 comments 16 shares

Like Comment Share

Send Message

Community

9,692 people like this

9,180 people follow this

About

Contact A9 Average Speed Cameras the answer on Messenger

Community

Page Transparency

Facebook is showing information to help you understand the purpose of a Page. See actions the people who manage and post content.

Page created - 28 July 2013

People

9,692 likes

Related Pages

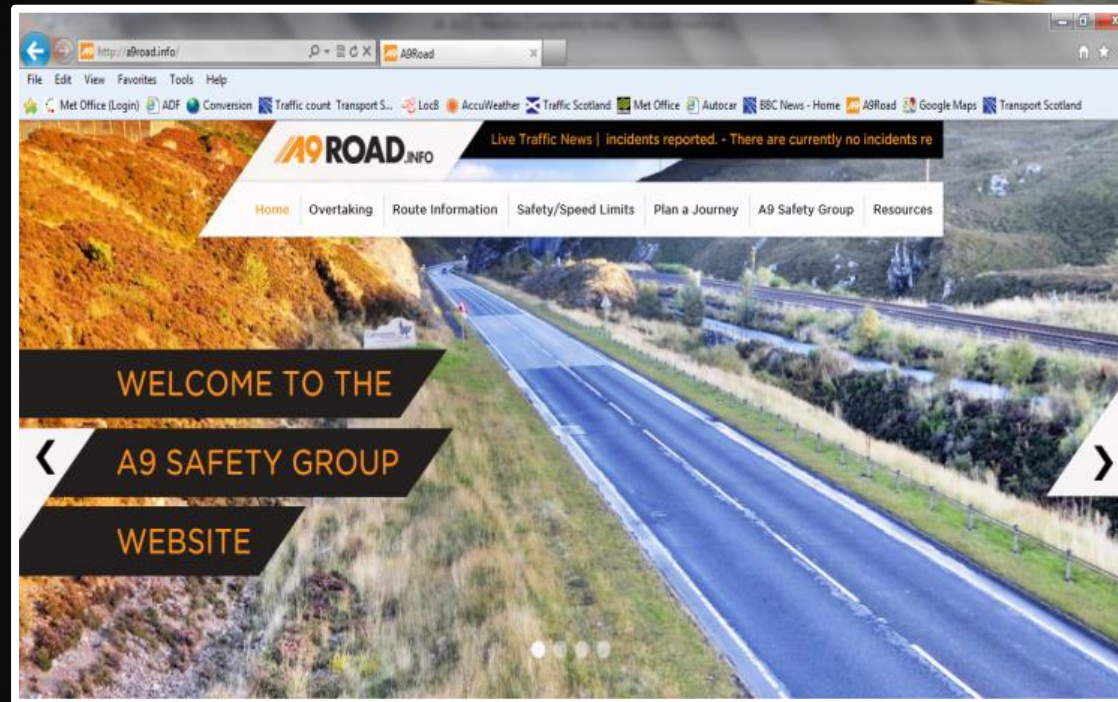
- Gadgie Shore Just for fun
- Parked Like a Knob High Just for fun
- Highland & Islands Police Government organisation

Public Engagement

- Enforcement can be a difficult issue for the public
- Politicians don't always like to encourage it
- Transport Scotland have done an **excellent** job here:

- www.a90road.info
- www.a77road.info
- www.a9road.info

- Engagement is ongoing
Before - During - After



Use of average speed in an urban environment

The distributed technology capability of average speed cameras, can with the right enforcement strategy be used to calm a wide area rather than a route or section, such as a urban or residential area as the following slides illustrate.



Benefits of Average speed

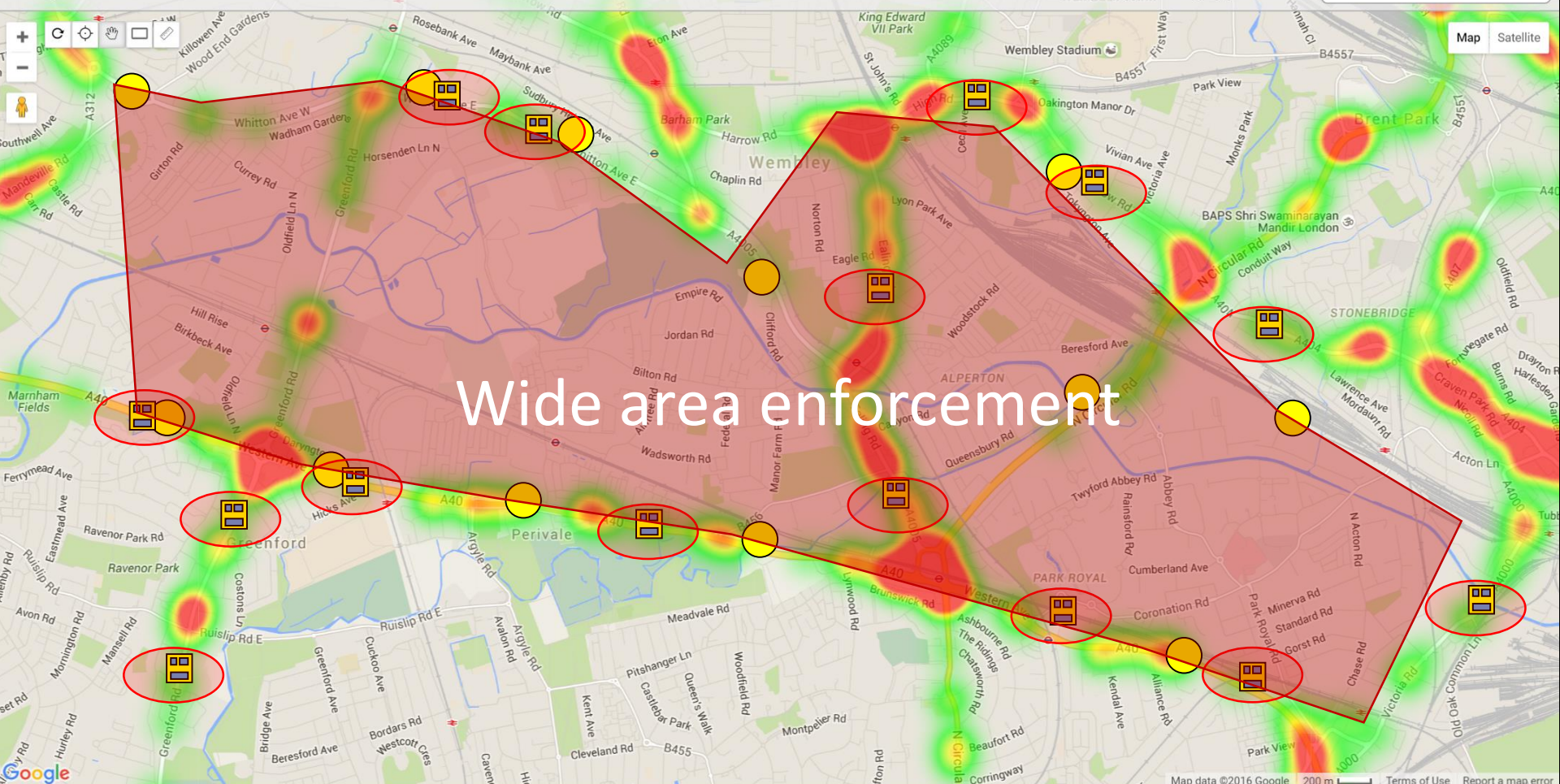
Metropolitan collisions 2015

jan.sjorup@roadsafetysupport.com

Search

Map navigation controls: zoom in (+), zoom out (-), home, location, street view, and a person icon.

Map Satellite



Wide area enforcement

Map data ©2016 Google 200 m Terms of Use Report a map error

Accident_Severity: Slight Serious Fatal
1st_Road_Class: A Accident_Severity: Fatal Accident_Severity: Serious Accident_Severity: Slight

Technology alone does not deliver compliance” Why are you using enforcement technology?

- Reduce casualties?
- Improve traffic flows?
- Improve air quality?

When do you want to enforce?

- 24/7 or just at certain times?

Do you want to deter or detect?

- All live vs some live?
- Visibly obvious or covert?

Clarity of Purpose

- Communicate well
- Share information
- Be consistent



Thank You

