Intelligent Speed Assistance – The London Experience

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Safe Streets for London: The London road safety plan

Safe Streets for London was launched in 2013

An ambitious plan to reduce the number of Killed and Serious injury (KSI) casualties by 40% by 2020 (2005-9 baseline)

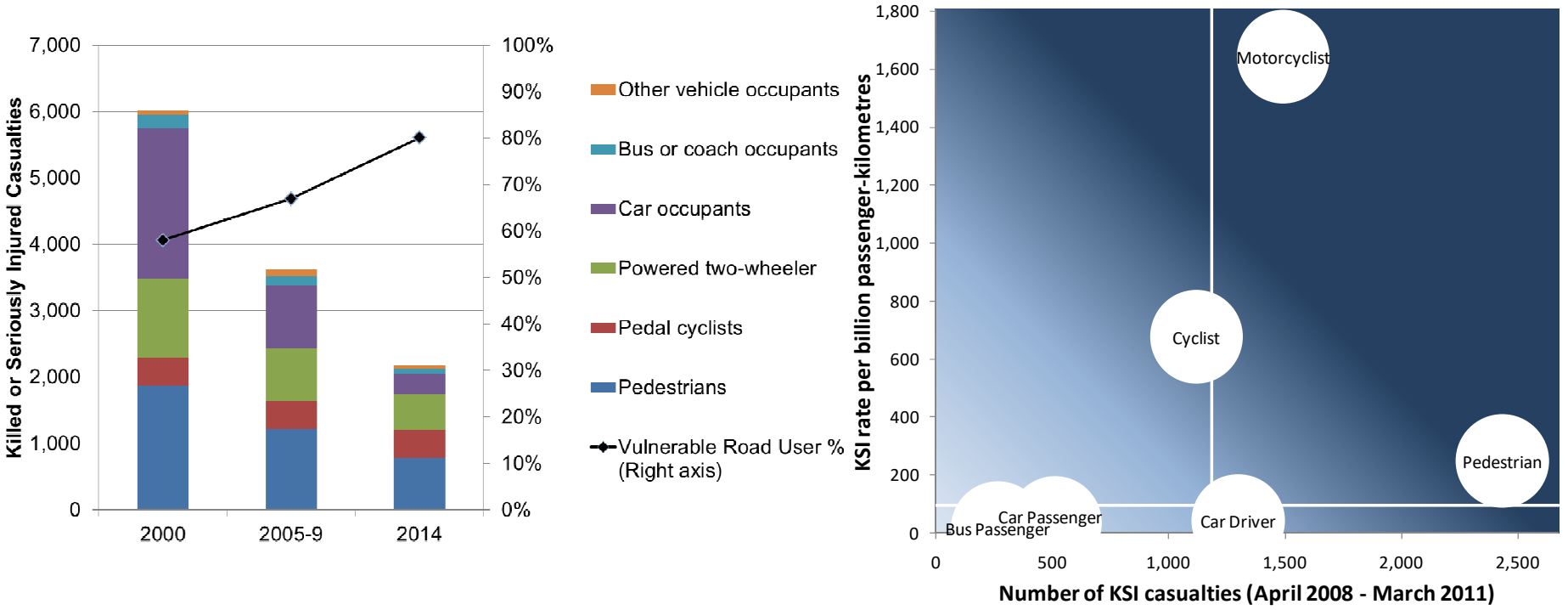
"Working together, towards roads free from death and serious injury"

56 key actions themed by Safe Roads, Safe Vehicles, Safe People and Delivering in Partnership

Published 3 further action plans focused on improving safety for vulnerable road users

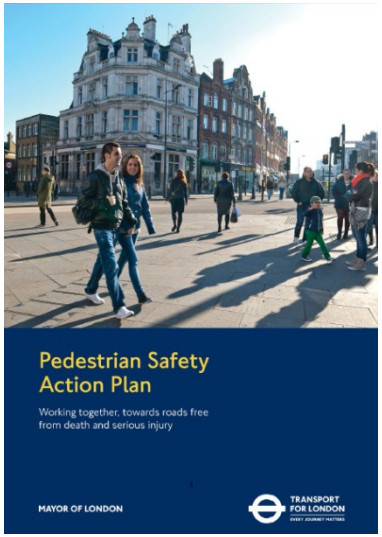
Achieved the Mayor's road safety target and set a new target to reduce KSIs **by 50% by 2020**

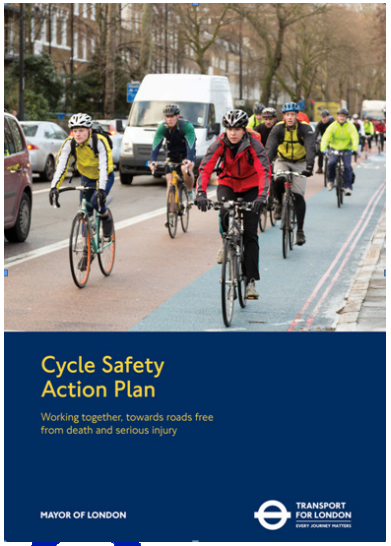
Focus on Vulnerable Road Users



- Number of KSIs fell 7% during 2014 to lowest levels since records began
- In 2014, vulnerable road users made up **80% of KSIs in London**
- Buses are **four times more likely** to be involved in a KSI collision with a pedestrian than would be expected for their share of traffic.

Focus on Vulnerable Road Users

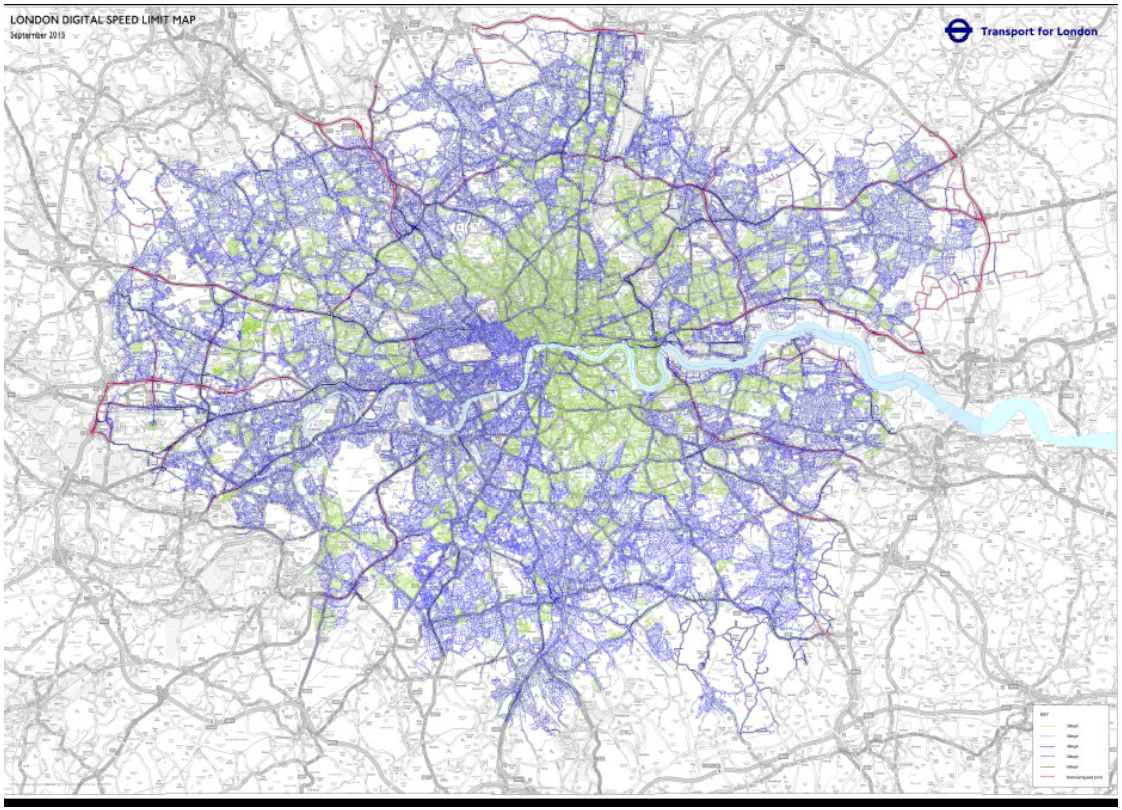




- TfL's Pedestrian Safety Action Plan and Cycle Safety Action Plan, contained actions *to run a trial of Intelligent Speed Assistance technology on a small number of vehicles in the bus fleet to understand the potential role of this technology in promoting adherence to speed limits across the road network.*

- A recent report from the European Commission recommended mandating ISA in new passenger vehicles from 2026. This trial will therefore ensure that London is prepared for any future legislation with a full understanding of the potential effects.

London Digital Speed Limit Map

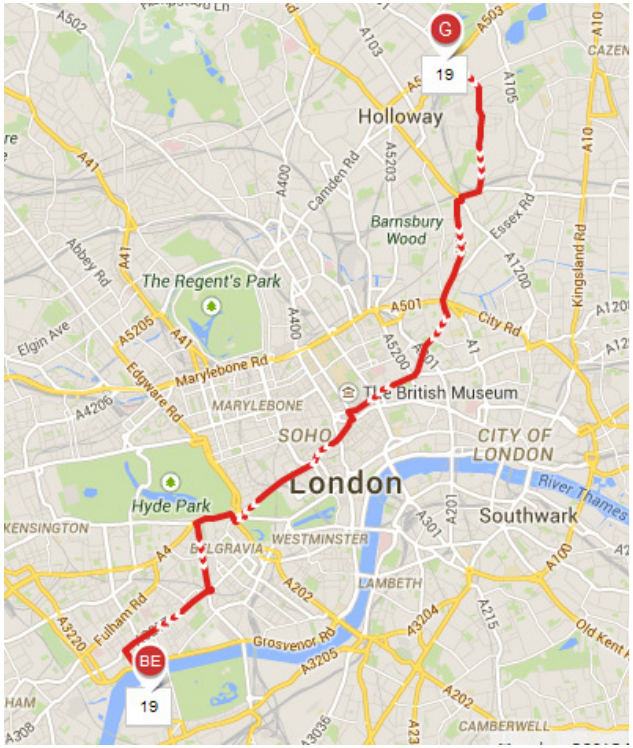


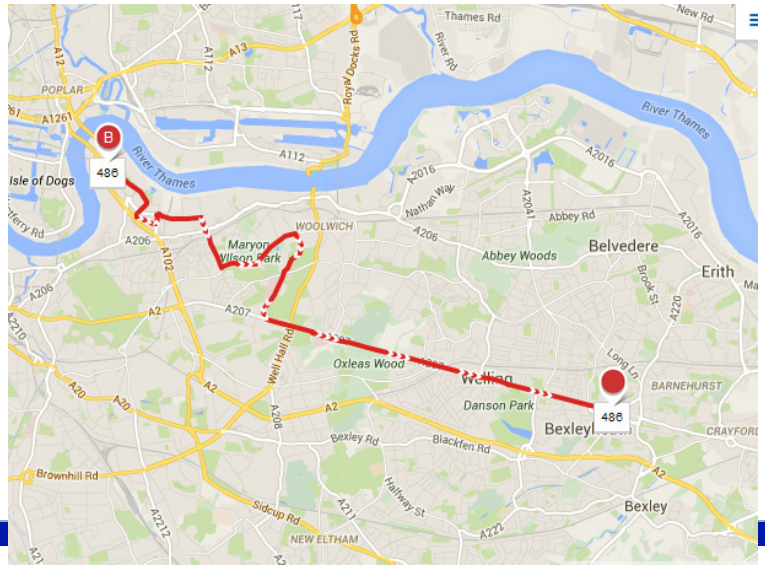
- Updated 'Digital Speed Limit' map for London, showing all speed limits in London.
- Helps development of the next generation of in-vehicle technologies and mobile phone apps.
- Ensure existing services, such as sat-navs and GPS, provide the best information on the speed limit of London's roads

Two routes selected for the trial: 19 and 486

These routes were selected using customer service data, and data analysis of:

- Routes with low bus compliance with speed limits
- Routes going through the most 20mph streets
- Routes with the least opportunities for cars to overtake buses
- Routes with the highest number of collisions with pedestrians and cyclists





Trial Suppliers

The ISA technology is being supplied by Zeta Automotive, who have adapted their current product, Econospeed, into an ISA device.

Go Ahead London, the operator of the two trial routes, worked closely with Zeta Automotive and TfL to implement the trial.

Transport Research Laboratory (TRL) monitored data sources and evaluate the trial, mainly by comparing pre-trial data to data collected during the trial.

2CV (market research company) will conduct surveys of bus drivers and passengers in two waves, the first ascertaining initial reactions, and the second once drivers are more accustomed to the technology.

Research Questions for the Trial

The following areas of evaluation will be included in the consultancy spec:

- The effectiveness of ISA with regard to speed limit compliance of buses
  Pre trial and trial data will most likely come from iBus system.

- Behaviour of vehicles following bus
  Video data - some trial buses already have cameras fitted at the back, others require fitment.

- Passenger and road user safety

- Impact on journey time of buses

- Fuel efficiency
  Operator data

- Bus driver and passenger attitudes
  Surveys carried out at varying times including night.

Trial of ISA on London Buses

- The trial of Intelligent Speed Assistance (ISA) ran on 2 bus routes, from May 2015 to January 2016.
- The main objective of the trial was to evaluate the effectiveness of ISA with regard to speed limit compliance of buses, as well as understand the attitudes of drivers and passengers, the behaviour of vehicles behind the bus, and the impact on journey time and fuel efficiency.
- Timescales:

Planning and procurement → April

Trial launch — May/June

Trial → August

Analysis → November

Final report — December

Results of the Trial

- ISA is more effective in 20mph limits, than 30mph
- ISA can reduce speeds of surrounding traffic (with limitations)
- ISA does not adversely affect the behaviour of surrounding traffic

Issues identified during the Trial

- Fitment issues
- Gravity
- Satisfaction levels of drivers
- Journey times of the routes

Understanding driver and customer perceptions

- At first, due to the issues with fitment, driver attitudes were largely negative.
- TfL then fixed the issues with retrofitting of the devices, and perceptions dramatically improved -

"There has been complete silence from the 19 drivers in the past month or so, so to me that is a very good sign"
Supervisor

"I don't notice it that much anymore, there don't seem to be any bad problems like before"

"I think it's a brilliant idea and gives drivers more capacity to pay attention to other things"
Accident prevention manager

"I think I'm used to it now, it doesn't bother me and I think it's a great idea"

Understanding driver and customer perceptions cont.

- Issues can occur during off–peak shifts, where roads are clearer and other road users become more impatient

Hard to overtake cyclists on hills at 20mph limit

"Because the cyclist doesn't know why I'm not going faster to overtake them, you can find yourself in a bit of a stand off with them. I've seen many a middle finger when this happens!"

Other roads users still speed on an open road and lose their temper at bus drivers for staying at the limit

"Other cars or buses see an open road and that I am holding them up because my bus is sticking to the limit, they honk, they swear and can even overtake when it really isn't safe"

Harder to pull out into traffic that is speeding – other drivers are impatient and speed up despite giving way

"If a car gives way, I think they expect me to pick up speed quicker, and when I can't they get really annoyed and beep or drive too closely to the bus"

Some customers ask why the bus is going so slowly, putting pressure on the driver

"If passengers can see a clear road ahead they think that I am driving too slowly even though it's a 20mph zone, I've had a couple approach me and ask me why I'm going slow"

Understanding driver and customer perceptions cont.

- Customers feel that the 19 is no different to other buses they get on
- Overall, customers think it is a good idea and that it will make for:
  - More comfortable journeys as it will prevent drivers from driving too fast and erratically
  - Safer roads, particularly for pedestrians and cyclists

"I think some buses are newer than others but that's about it…"

"It's a great idea, I definitely think some bus drivers go way to fast, especially at night"

"It's good for safety I guess, it won't impact upon my journey but may make the roads safer for cyclists in some way"

"The bus doesn't go fast enough through central London for me to notice it!"

Next Steps

- ISA will be rolled out onto new buses only at point of manufacture from 2018
- Incorporation of trial findings within the **Bus Safety Standard**

The Bus Safety Standard will build on the recent trials of pedestrian/cycle detection technology and Intelligent Speed Assistance (ISA) to identify a package of further safety measures.

These include elements of primary safety (to prevent collisions) and secondary safety (to mitigate the impact of collisions) such as Autonomous Emergency Braking (AEB) or other collision avoidance systems, front of bus and mirror design, internal bus design and technology to prevent pedal confusion.

These technologies will be developed and tested by manufacturers on London Buses throughout 2016-17 and incorporated into new buses delivered from 2017-18.

Thank You

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