

# Future focus on vehicles helps shape current thinking

Efforts to improve air quality in cities must take account of emissions generated from real world driving and not just laboratory tests, finds a new report.

Shared mobility, increasing technology and the introduction of connected and autonomous vehicles all promise to change the nature of transport, and are important areas of focus for the UKRLG.

The group does not want to duplicate the efforts of other professional bodies, but might be the only one that brings together all tiers of UK Government to consider how such issues affect the roads sector.

One timely report published just last month and of interest to UKRLG members is titled: 'The UK private road transport system: how and why is it changing'. It has been written by Imperial College London's centre for transport studies lecturer Dr Marc Stettler and was commissioned as part of the Government's Foresight Future of Mobility project.

The report says that climate change and air quality are two of the main reasons behind vehicle development. Dr Stettler also notes that recent evidence finds that vehicle emissions of CO<sub>2</sub> and noxious pollutants are significantly higher in real world driving compared to regulatory laboratory testing.

In September 2017 the European Commission introduced more effective emissions testing to address real world emissions and force manufactures to invest in low emissions technologies.

The report notes that 'air quality in cities is improving in general' adding however that 'concentrations of nitrogen dioxide (NO<sub>2</sub>) were higher than European air quality standards at many roadside locations'.

The 2017 Air Quality Plan produced by the Department for Environment, Food & Rural Affairs predicted that 29 out of 43 zones in the UK would remain non



↑ Overcoming air quality issues is a catalyst for vehicle development

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compliant with NO<sub>2</sub> regulation in 2020 and that two out of 43 zones would still be non compliant in 2025 with current policies.

The plan states that Clean Air Zones which impose a financial penalty on older vehicles (prior to Euro 6 diesel and Euro 4 petrol) are likely to be the only way to achieve compliance with limits on NO<sub>2</sub> concentration in the most polluted zones.

Dr Stettler observes that charges incentivise people to switch to cleaner vehicles by increasing the cost of car travel in non compliant vehicles, and potentially make other transport modes more attractive to those who cannot afford to upgrade their vehicle.

The report includes some interesting observations of the future of low emission vehicles for private road transport.

The first is that internal combustion engine vehicles with lower emissions may be more expensive due to higher

costs of emissions control technologies. Until economies of scale reduce costs, alternative fuelled vehicles will also be more expensive in terms of the up front purchase cost.

This could incentivise shared mobility by allowing the higher capital cost to be spread across more trips.

The second is that lower emission vehicles will likely be more fuel efficient and reduce the cost of each vehicle kilometre travelled in a car. A 'rebound effect' can occur when a price drop induces more activity.

High level econometric studies show that a 1% reduction in fuel costs is associated with an approximate 0.2% increase in vehicle kilometres travelled.

Connected and autonomous vehicles (CAVs) are also covered, detailing automation that assists or replaces human control.

But the impact of CAVs on traveller behaviour 'is also highly uncertain and complex' notes Dr Stettler. One scenario

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## Authorities encouraged to better prepare for winter

Updates will shortly be published to the National Winter Service Research Group's range of guidance on salt storage, spreader management and treatment methods and technologies.

The guidance will assist with providing advice to help highway authorities answer key questions for delivering effective winter services (see below) and will be available on the UKRLG website in early 2019. Keep an eye on the website and its Twitter account to find more information. Key questions include:

### Salt storage:

- How is salt moisture being managed to ensure it is being maintained within its optimum range?
- Do current salt storage capacity and mutual aid arrangements provide adequate resilience?



↑ Snow being cleared from a remote section of the A87 on the Isle of Skye BEAR SCOTLAND

### Treatment Methods & Technologies:

- Have you considered alternatives to the de-icing materials you have been using to date? Cost-benefit analyses may indicate efficiency savings and lower spread rates could potentially lead to improve resilience.
- Have you considered the performance of the different spreading technologies in the weather conditions your area experiences?

### Spreader Management:

- Is the spreader manufactured in accordance with current standards?
- Is the calibration up to date?
- Has the distribution been assessed and recorded?
- Is the performance being monitored?

Also see *winter maintenance story*, page 19.

observed could be that increases in road capacity – as a result of CAVs – might induce more car travel; as historically, improvements in road capacity have not improved average vehicle speeds or congestion, as more road space attracts more drivers.

The report also includes a number of significant uncertainties relating to CAVs including the readiness of road infrastructure, training and testing of new drivers, interactions between CAVs and other road users, the safety of vulnerable road users and CAV parking and breakdowns.

Dr Stettler notes that there is little evidence of the impact of different CAV strategies on the condition of road infrastructure, its maintenance, renewal and configuration requirements and requirements for road signage and markings. But he adds: 'Examples from the aviation and rail sectors indicate that more advance infrastructure requires higher costs of maintenance'.

Perhaps unsurprisingly, the report states that the majority of studies conclude that Government's planning decisions will affect the speed at which CAVs are adopted.

**Justin Ward**

## UKRLG supports cycling and walking

Government has an ambition that by 2040 cycling and walking should be the natural choices for shorter journeys, or as part of a longer journey. Or, as it puts it: 'a world in which a 12 year old can cycle and walk safely'.

Local authorities can help to achieve the Government's vision by adopting the UKRLG's 'Well-managed Highway Infrastructure' guidance published two years ago.

In November 2018, as part of its Cycling & Walking Investment Strategy, the Government noted: 'The Code highlights further guidance in respect to street design and links to other guidance with respect to cycling infrastructure'.

It also makes clear that highway authorities, when planning for highway maintenance, should take into account and add value to other elements of local transport policy and strategy wherever possible.

This includes supporting economic growth, regeneration, public health, resilience, emergency services, walking and cycling, bus and freight partnerships, as well as casualty reduction and prevention, travel planning, safer routes to school, and routes to stations and other interchange facilities.

One element, sometimes neglected, is just how vital good asset management is to supporting walking and cycling. Given this, the UKRLG aimed

to address the gap by producing a series of guidance documents last year.

They included the publication of: 'Asset management guidance for footways and cycle routes: Pavement design and maintenance'; 'Asset management guidance for footways and cycle routes: An approach to risk based maintenance management'; and 'Cycle service levels and condition assessment'. (see *Transportation Professional's* May edition).

It was very welcome to hear the Government recently say that it 'will promote the UK Roads Liaison Group's Code of Practice to highway authorities to improve maintenance of highways for cyclists and pedestrians'.



↑ Active travel is championed by the UKRLG

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