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Why are we planning to spend so much on new roads when we live in an information age?

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The Government has published its long heralded Road Investment Strategy (RIS) - £15 billion expenditure to 2021 on 127 major schemes to improve and enlarge the Strategic Road Network (SRN). One aspiration of the Vision is a 'free-flow core network, with mile a minute speeds increasingly typical'. Nice idea, but how realistic is this? The supporting analysis is decidedly thin.

The National Travel Survey shows that per capita travel by all surface modes has changed little over the past twenty years, with no upward trend in average distance travelled, 80 per cent of which is by car. It is hard to see what changes in economic or other factors would set such a trend in motion.

The cessation of growth of per capita car use in Britain and many other developed countries is the phenomenon known as 'Peak Car' – a term studiously avoided in the RIS document. The influences on car use are, however, discussed, leading to the conclusion that 'the factors which have traditionally been seen as important determinants for national traffic levels, particularly income and costs, continue to be so.' Not a surprising conclusion when you're announcing a major roads expenditure programme.

What will drive traffic growth in the future is population growth. The population of England is expected to increase by 10 million by 2040. These extra people will need homes and jobs, and investment in the transport system will be required to make the connections. In London, the Mayor has a duty to prepare a Plan for population and employment growth. The latest supporting document is the London Infrastructure Plan 2050 which considers how an extra 3 million people could be housed, where they would work, and what investment in transport and other infrastructure would be needed.

This joint planning of transport investment with development is the right way to go. In line with this, the Government have announced that a new garden city is to be built at Bicester, Oxfordshire, with 13,000 new homes and £44 million to be spent on connecting roads. But this initiative is very much the exception. There are no plans for how to accommodate the rest of the 7 million extra people expected outside London by 2040. The National Planning Policy Framework issued in 2012 is silent on population growth. So the Department for Transport has to plan for transport investment in the absence of a national spatial plan that would indicate where development would be expected, whether on greenfield sites for which road investment would be required, or on urban sites, as in London, where public transport would be the priority.

In the absence of a national plan, the Department's road investment programme is justified by road traffic forecasts, the details of which have yet to be

announced. But it is welcome that DfT has adopted a scenario approach to projecting future demand, an advance over the traditional central projection plus sensitivities.

One such scenario removes the customary link between income and car ownership and car travel, and results in 10 per cent less traffic on the SRN in 2040 than on the base case. But this scenario still projects 34 per cent more traffic than in 2013, a rate of growth twice that of population growth. What drives this traffic growth is unclear.

How credible are these traffic forecasts? They are outputs of the Department's National Transport Model, which is getting long in the tooth and needs to be rebuilt in a form that can be made publicly available – now standard practice for Government macro models. There are questions about whether the Model adequately recognises both road capacity constraints in cities and travel time constraints – average travel time has not changed for forty years. So I regard as questionable a scenario projection that, by 2040, around 25 per cent of the entire SRN, and 35 per cent of the motorway network will experience severe congestion at peak times and suffer poor conditions at other times of the day.

Congestion is self-limiting on account of the travel time constraint. As congestion increases, speeds reduce, and some road users change their plans. Congestion on the SRN largely occurs near population centres where locally generated traffic impedes long-distance traffic. If carriageway is added, at considerable expense, the locals take advantage of initially higher speeds to increase trip length, most importantly when they change jobs or move house. These longer trips restore congestion to what it was, and long-distance users are no better off. This is the basis for the maxim 'You can't build your way out of congestion' – something that past Transport Ministers would say when no major road construction was planned, and which remains true.

When road users are asked why traffic congestion is a problem, their main concern is the uncertainty of journey time. This can be tackled by providing predictive information about journey times before drivers set out. Those who need to arrive at a particular time can set their departure accordingly. Those who are flexible can use the same information to avoid the worst congestion. This is win-win since the more that flexible drivers avoid peak hour congestion, the less congestion experienced by those who have to be on the roads at that time.

The RIS recognises that data from moving vehicles can be used to give better real time management of traffic, enabling predictive and personalised traffic information for road users. The Highways Agency is conducting a pilot on a 50-mile section of the A14 to become Britain's first internet-connected road. And there is to be a £150 million Innovation Fund to allow the HA's successor company, Highways England, to place a greater emphasis on future technologies that will positively impact users and the network.

This recognition of the importance of digital technologies is welcome since they are likely to be far more cost-effective in tackling congestion than civil engineering technologies. The question is why so much money is being committed to civil engineering as we increasingly live in a digital age. The answer, I fear, is that traditional thinking is insufficiently challenged by incisive analysis.

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