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## **TRL RESEARCH ALERT**

### **SUMMARIES OF TRL PUBLICATIONS**

**May 2012**

## Reports Published – May 2012

### **PUBLISHED PROJECT REPORTS**

- PPR519 Cooperative Vehicle Highway Systems: Implications for the Highways Agency by A Gelencser, J Hopkin, D Tindall and J Francsics  
(Price £35, code 3X)
- PPR601 A transport emissions database for Hillingdon by K Turpin, A Savage, P G Boulter  
(Price £35, code 3X)
- PPR599 The role of social networking sites in changing travel behaviours by A Binsted and R Hutchins  
(Price £35, code 3X)
- PPR594 NRA Pavement cost model: Manual by T Buckland  
(Price £30, code 2X)
- PPR597 NRA Pavement Cost Model: Model development and data issues by T Buckland  
(Price £25, code 1X)

*Prices current at May 2012*

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**Summary****May 2012****Published Project Report PPR519**

Cooperative Vehicle Highway Systems: Implications for the Highways Agency

A Gelencser, J Hopkin, D Tindall and J Francsics

Pages: 68, ISBN: 978-1-908855-07-7

The capability to exchange information between vehicles and between vehicles and roadside infrastructure in co-operative vehicle systems creates many opportunities for innovation in the way in which the road network is used and managed. This will not only involve the introduction of new technologies, but also in the way in which road operators, vehicle manufacturers, service suppliers and other stakeholders work together to provide services for travellers using the road network, with mutual benefits for all.

This report was written in 2010 and draws on current projects and recent experiences at that time. An overview of the status of developments in co-operative vehicle systems at that time is provided to assist the Highways Agency in assessing the implications of future deployment of such systems on the road network. The findings are informed by the experience gained while participating in the European CVIS (Co-operative Vehicle Infrastructure Systems) project. The 'state of the art' of co-operative vehicle systems is reviewed, recent projects and developments in Europe, the USA and Japan are summarised and applications are analysed and priorities identified for the Highways Agency. Implementation issues are discussed, and issues for the Highways Agency are summarised. Recommendations are made for further Highways Agency activities to take forward the development of co-operative vehicle systems.

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**Summary****May 2012****Published Project Report PPR601**

A transport emissions database for Hillingdon

K Turpin, A Savage, P G Boulter

Pages: 64, ISBN: 978-1-908855-06-0

The aim of this project was to produce an emissions database (EDB) for the London Borough of Hillingdon to assess changes in emissions and fuel consumption of measures in their Transport Local Implementation Plan (LIP) and Air Quality Action Plan. The EDB includes link-based road transport emissions and a rail module that can be used to determine the contribution of emission sources in the borough and to assess the emissions impact of selected measures from the LIP.

It was found that of the road and rail sources within the EDB that are within the borough, road traffic contributes to over 77 percent NO<sub>x</sub> emissions and 69 percent of PM emissions. Of these road traffic sources, vehicles travelling on the motorways contributed to over 60 percent of each pollutant. For CO<sub>2</sub>, road transport contributed to 95 percent of the total emissions. Emissions from the diesel railway network contributed 23 percent of overall NO<sub>x</sub> emissions, 31 percent to PM emissions and 5 percent of CO<sub>2</sub> emissions in the borough. The EDB was also used to assess the impact of four measures from the LIP on emissions over a given area. These measures assessed were modal shift from cars to trains and buses, introducing a dedicated Uxbridge to Heathrow bus service, improvements to a bus and train transport interchange at Uxbridge and the introduction of Crossrail in 2017.

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**Summary****May 2012****Published Project Report PPR599**

The role of social networking sites in changing travel

A Binstead, R Hutchins

Pages: 92, ISBN: 978-1-908855-05-3

This report provides an overview of research that was conducted to explore the potential for social networking sites to encourage changes in travel behaviours, and to provide recommendations for how any identified potential could be optimised through their design. A scoping review identified that there is not a robust empirical research base from which to draw conclusions about the possible impact of social networking sites on behaviour. The study sought to develop the evidence base by conducting original research, which included: three focus groups, two interviews with developers of social networking sites that could potentially trigger a change in travel behaviours, and an online survey with a sample size of 141 social networking users. This report presents the findings of these research activities, and concludes that they are a good way to communicate messages to a broad demographic. They seem likely to increase awareness of the impact of travel behaviours and of more sustainable alternatives. This may not lead to a direct change in travel behaviours, but it potentially impacts on attitudes and values that could change travel behaviours in the longer term. There are a number of design considerations that, if built into the development (and continued maintenance) of a social networking site, could increase this impact.

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**Summary****May 2012****Published Project Report PPR594**

NRA Pavement cost model: Manual

T Buckland

Pages: 92, ISBN: 978-1-908855-03-9

Road authorities require pavement information and decision support tools to assist them in the management of their asset, particularly in determining the budgets and maintenance that are needed on their network. This report covers the modelling methodology and processes that have been developed and implemented in a pavement cost model for the National Roads Authority, Ireland.

The model has been developed so that the reference data and imported network data link into a workspace, which is then used as the calculation space during an analysis. A user can choose to create a range of different analyses in order to provide answers and associated sensitivity analysis to issues such as how much budget is needed to maintain the network in a steady state.

The modelling process is detailed within this report, along with the rules and algorithms used. This includes the steps of ageing data and identifying treatments through to selecting and costing maintenance schemes in the chosen network.

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**Summary**

**May 2012**

**Published Project Report PPR597**

NRA Pavement Cost Model: Model development and data issues

T Buckland

Pages: 10, ISBN: 978-1-908855-04-6

This report documents a number of issues that were encountered during the development of a pavement cost model for the National Roads Authority, Ireland. These issues were primarily brought about because the data was being used for new purposes in predicting maintenance on the Irish network. The issues are highlighted in this report so that any future development of a pavement cost model on this, or any network, can take them on board at the design stage.

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