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July 2011

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I Carswell and R Poe
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vehicles to vision-impaired pedestrians by P A Morgan, L Morris,
M Muirhead, L K Walter and J Martin
(Price £35, Code 3X)

PPR571 Development of complementary indicators for use with the RCI in
Scotland by S McRobbie, D Wright, K Nesnas and M McHale
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Summary**July 2011****TRL Report TRL670**

New surface course specification for Scotland

M J McHale, I Carswell and P Roe

Pages: 48, ISBN: 978-1-84608-965-7

A review of the performance of asphalt surfacing used in Scotland in 2006 revealed examples of very short service lives and, in some instances, an inadequate provision of early-life skid resistance. As a result, Transport Scotland commissioned a programme of research to improve road surfacing to make it safer and more sustainable. The work included annual surfacing inspections, industry workshops, study trips to Germany to view their stone mastic asphalt (SMA) surfacings and full-scale road trials in Scotland. The trials comprised eight SMA materials using nominal aggregate sizes of 14 mm, 10 mm, 8 mm and 6 mm, with four of the trial surfacings being treated with grit to improve early-life skid resistance. This TRL Report describes the research and how the results were used to develop a new performance-based surface course specification for use on Scotland's Trunk Roads. The new specification marks a step change in approach for specifying surfacing material that should provide key benefits in improved durability and value for money.

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Summary**July 2011****Published Project Report PPR525**

Assessing the perceived safety risk from quiet electric and hybrid vehicles to vision-impaired pedestrians

P A Morgan, L Morris, M Muirhead, L K Walter and J Martin

Pages: 86, ISBN: 978-1-84608-903-9

Over 90% of the UK population hears traffic noise at home and approximately 10% regard this exposure as highly annoying. The Environmental Noise Directive 2002/49/EC aims to prevent/reduce environmental noise from sources such as road traffic where necessary and preserve noise quality where it is good. Potential mechanisms for achieving this include the increased use of quieter vehicles (through reduced powertrain and tyre noise) and low-noise road surfaces. One option for quieter vehicles is the use of vehicles powered by electric motors, either fully electric or hybrid vehicles running in electric mode. However, groups representing the vision-impaired, both in the UK and internationally, have raised concerns that, due to their low noise, such vehicles may pose an increased accident risk to vision-impaired pedestrians. The Department for Transport has commissioned TRL to investigate the accident risk posed by such vehicles and compare it with that for equivalent vehicles with traditional internal combustion engines, and to determine whether electric/hybrid vehicles are audibly more difficult to detect.

This report presents the findings from the study, based upon a review of accident statistics, a programme of practical measurements to compare the noise of electric/hybrid and internal combustion engine vehicles, and a small-scale subjective assessment of the noise from these vehicles involving visually impaired participants.

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Summary**July 2011****Published Project Report PPR571**

Development of complementary indicators for use with the RCI in Scotland

S McRobbie, D Wright, K Nesnas and M McHale

Pages: 82, ISBN: 978-1-84608-966-4

The Road Condition Indicator (RCI) was developed as a tool to make it easier for engineers to make sense of the vast quantity of data provided by the machine-based, traffic-speed SCANNER surveys. The development of the RCI was a challenging task, due to the multiple and disparate requirements of those who make use of it – the RCI was to be used as a national indicator of pavement network, a local indicator of pavement network condition to enable comparisons between different authorities, a local indicator to identify areas which are in a generally worse or better condition than others and a way of helping those responsible for maintenance planning decisions actually decide and prioritise their maintenance programmes.

The “one size fits all” approach of the RCI means that it is not ideally suited as a means of actually planning and prioritising maintenance. This has led to a call from engineers to produce a range of complementary indicators which provide more useful guidance about whether a site requires further investigation or maintenance, and what type of maintenance this should be.

A method has been developed which calculates five intermediate indicators for the pavement, using information already collected by the SRMCS. These intermediate indicators have been designed to reflect the key types of deterioration which the SRMCS surveys can detect. The most appropriate parameters for inclusion in each intermediate indicator, and thresholds for use with the parameters, have been proposed. A method for combining these intermediate indicators to produce three Maintenance Condition Indicators has been proposed.

Additionally, the research looked at a number of possible alternative approaches for displaying and visualising the data. Some of the approaches to displaying multiple indicator parameters, notably the symbolic displays, and the combination of symbols and colours, look promising and worthy of further investigation.

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