EU ROAD SURFACES:
ECONOMIC AND SAFETY IMPACT OF THE LACK OF REGULAR ROAD MAINTENANCE

EXECUTIVE SUMMARY

Abstract

This study looks at the condition and the quality of road surfaces in the EU and at the trends registered in the national budgets on the road maintenance activities in recent years, with the aim of reviewing the economic and safety consequences of the lack of regular road maintenance. The authors investigate the key causes behind the registered variations identified and the consequent impacts on road safety; they recommend therefore a series of actions and best practices to help preserve the safety and quality of the EU road surfaces.
EXECUTIVE SUMMARY

ROAD SAFETY

Road Safety in Europe has been improving over recent decades. The number of fatalities in the EU-28 in 2010 was almost 31,500, or only 57% of the 54,949 fatalities registered in 2001. A significant step in this trend took place between 2008 and 2010, when road fatalities fell 10% per annum compared to 4% per annum between 2001 and 2007. Notwithstanding the substantial decline, the EU did not achieve the target, set in 2003, of a 50% decrease in road fatalities between 2001 and 2010.

In addition to this general decline in road fatalities it is worth noting that:

- The decline has been achieved despite a general growth in road passenger transport: between 1995 and 2011 road transport demand, measured in passenger-kilometres, grew by an average of 1.1% per annum across the EU.

- The situation varies substantially across the different Member States. Southern and eastern Member States tend to have fatality rates higher than the EU average.

- The decline in fatalities varies according to road users: the number of fatalities has fallen steadily for cars (-45%), goods vehicles (-40%), cyclists (-33%) and pedestrians (-34%), while the number of fatalities in accidents involving motorcycles has remained constant.

- Provisional data for 2013 indicate that road fatalities are still decreasing, as an overall number of 26,000 fatalities has been registered in the EU. Based on preliminary figures, the number of road fatalities has decreased by 8% compared to 2012, following the 9% decrease between 2011 and 2012.

Data on road accidents at European level are collected in CARE, the European centralised database on road accidents, which provides information on deaths or injuries across the EU, collating non-confidential data from EU Member States into one central database.

Since the adoption of the 3rd ERSAP, the EU has recognized that human error is the most recurring cause of road accidents, but the impact of road condition and maintenance is not negligible. As drivers can, and inevitably do, make mistakes, infrastructure conditions should be gradually improved to protect users more effectively against their own shortcomings.

ROAD MAINTENANCE EXPENDITURE IN THE EU

The collection of homogeneous and accurate information on road maintenance and investment expenditure across the different Member States is difficult as the degree of homogeneity of data is minimal. Roads are administered differently in different MS, thus the responsibility for keeping the different sections of the road network at acceptable standards is assigned to numerous bodies, such as national ministries, regional or local authorities. In addition to this the definition of road maintenance and investment activities is not always clear comparing different national contexts, making it problematic to detect exactly what needs to be recorded in each of the two categories, creating discrepancies in the way data is reported across the different MS.
To assess the evolution of maintenance activities on road works in the EU in recent years, this study has brought together the road expenditure dataset produced by the OECD/ITF, the asphalt production data reported by EAPA and specific country information. Data collected shows that road investment levels remained relatively stable in the EU between 2006 and 2011. Road investment was at its highest in 2009, but had fallen by 7.1% by 2011. Regarding the maintenance expenditure levels, the analysis suggests the presence of a significant reduction of maintenance activities in Italy, Ireland, Slovenia and Spain in recent years and a likely downward trend also in Slovakia, Finland, Czech Republic, the UK, Portugal and Hungary. At the same time, an increase in maintenance expenditure seems to have been recorded in a number of EU MS over the same period: this is the case for Austria, Germany, France, Croatia, Lithuania, Luxembourg, and Poland.

The impact of the crisis has been higher where the funding of road infrastructure is highly dependent on government spending rather than from other sources of financing (e.g. toll roads). The status of public finance of different MS and the fiscal and budgetary choices that have been made has led to different outcomes.

**ASSESSMENT OF ROAD SURFACE QUALITY AND PLANNING OF MAINTENANCE ACTIVITIES**

With the approval of Directive 2008/96/EC a common framework for road infrastructure safety management was created for the first time in the EU. This Directive however only applies to the TEN-T corridors, it is subject to different interpretations and implementation across the EU and focuses only on procedural aspects of road safety monitoring.

The EU made an attempt to overcome these limits with the following research projects:

- **Pilot4safety**, developed a manual, complemented by a collection of best practices that could be a starting point to develop a comprehensive tool that standardises the operational prescriptions to be implemented by road operators and national authorities

- **WhiteRoads**, identified the ‘white spots’, that is road sections along the TEN-T where no accidents occurred during the study period, despite high traffic flows, and studied them to identify the key features that allowed these sections to achieve such a high level of road safety.

Results from the **WhiteRoads** project shows that good road design, the presence of adequate maintenance programmes, the installation of reliable and homogenous traffic signage and road markings and appropriate lighting are among the key aspects that determine the success of white spots. The checklist developed within the **WhiteRoads** project should be considered as a new and complementary tool to the safety audits and inspections laid down in the Directive 2008/96/EC and could also be applied to other relevant road sections not belonging to the TEN-T network.

Several Member States have a well-established procedure for the monitoring of road conditions and the prioritisation of interventions. In many cases however, this does not extend to local or urban roads. Where road maintenance activities are carried out according to the outcomes of the monitoring process, prioritisation rules depend on the way outputs are assessed.
SOCIO-ECONOMIC IMPACTS OF ROAD MAINTENANCE

Road maintenance expenditures also yield substantial wider socio-economic impacts. The reduction in journey times associated with timely maintenance is one of the most widely recognised economic benefits of road maintenance. There is also evidence of the social cost of road accidents which has been quantified in studies in France, Lithuania and the Netherlands. Studies that have sought to quantify the wider economic impacts of road maintenance activities indicate that the reduction in road maintenance expenditure can have an impact to the wider economy in the range of 100%-250%.

KEY FINDINGS AND RECOMMENDATIONS

In light of future EP debates on the initiatives to be taken by the EU to help preserve the safety and quality of road surfaces and contrast the possible negative impacts generated by cuts in road maintenance activities due to economic downturns, the following actions should be taken into consideration:

- In the ongoing revision of the Road Infrastructure Safety Directive 2008/96/EC of 19th November 2008, it will be important to support the introduction of changes that allow for a more homogenous application across the EU and expand the technical and geographical scope of the application of the Directive.

- Call on the Commission: to propose the extension of the experiences of the WhiteRoads project to other categories of roads and use the outcomes of the white spot evaluation to improve safety records on the most dangerous sections; to support the dissemination of a checklist similar to those developed in WhiteRoads as a new and complementary tool to the safety audits and inspections laid down in Directive 2008/96/EC; to incentivise their application on road sections off the TEN-T.

- Identify actions and measures that could focus on local and urban roads, which show the highest safety risks and, in some countries, are experiencing the strongest reduction in maintenance activities.

- Help disseminating the good practices that several EU MS have introduced and could help improve the cost-effectiveness of maintenance activities across the EU.