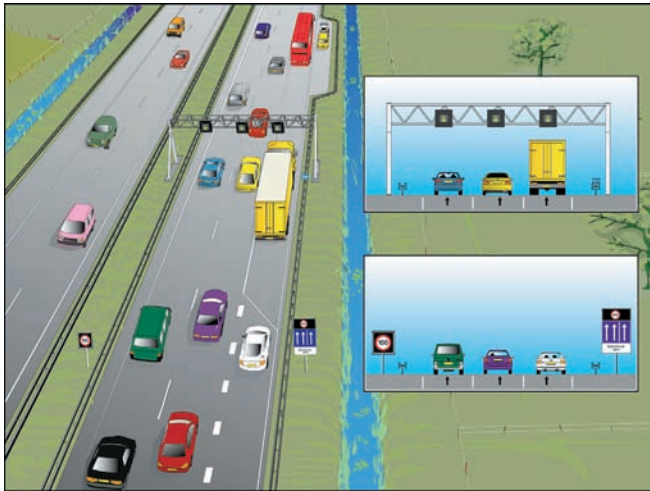


# Centrico BRIEFING NOTE

Using ITS to manage Europe's busiest roads



## Peak Hour Lanes

### SUMMARY

Hard shoulder running during peak hours is an efficient instrument for rapidly achieving a significant improvement of the traffic flow at reasonable financial cost. In this way, road accidents, travel time and pollution can also be reduced. The results of the measures implemented so far are very promising even though these measures do not replace necessary upgrading measures.

### INTRODUCTION

CENTRICO covers the most densely populated area of Europe with a heavily congested road network and critical all-year-round traffic conditions. Congestion can be decreased by smart use of the existing network like peak hour lanes. Over the years road authorities have gained a lot of experience in this area. This briefing note includes the results of projects of Germany, England and the Netherlands.

### GERMANY

In Hessen temporary hard shoulder use is available on several sections at the motorways in the area of Rhein-Main, e.g. on the motorway A3 and A5.



*Example Hessian peak hour lane*

The temporary hard shoulder use is integrated into a lane control system (variable speeds etc. by VMSs)

and uses video monitoring (one camera for each direction every 500 m). The experiences in Hessen are extremely positive. The capacity by using hard shoulder as an additional lane in peak hours was increased by up to 25 %.

### ENGLAND

The M42 near Birmingham is one of Britain's busiest motorways. Over 120,000 vehicles per day utilise the 17 km route between junction's 3a and 7, leading to high congestions level at peak times and higher than national average accident rates.

The Active Traffic Management scheme (ATM) aims to utilise new technologies and infrastructure, alongside improved management techniques to obtain a more efficient traffic management system on the M42.

The key objectives of the project are to:

- Provide more reliable journey times
- Reduce congestion
- Enhance information to drivers
- Provide a quicker response to incidents

The ATM scheme includes the implementation of the following:

- Driver information signs
- Mandatory speed limits during periods of congestion and when approaching incidents
- Use of the hard shoulder during periods of

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congestion

- Incident management control centres
- The provision of emergency refuge areas every 500 metres each with emergency roadside telephones



ATM location M42

The installation started in December 2004 with the majority of the equipment installed by mid 2005. First monitoring results indicate 85 % compliance to the scheme. Driver reaction to the mandatory speed limits was monitored in December 2005 and identified that most drivers knew of ATM and understood the mandatory signals better than the advisory signals. Drivers stated that they felt ATM enabled them to plan their journeys better, increased their confidence and provided better traffic information.

The final phase of the project is to implement a four lane variable speed limit. The hard shoulder will be used as an extra running lane during busy peak periods or incidents, providing additional capacity for vehicles. This is expected to be implemented by March 2007, earlier if it is safe to do so. The impact of the scheme on traffic conditions, environmental factors and safety is being monitored, as well as driver reaction to the scheme. Monitoring results will be made available once the appropriate data has been collected and analysed.

## THE NETHERLANDS

For the Rijkswaterstaat programme ZSM (Dutch abbreviation for Visible, Smart and Measurable) a law was passed. This law enables Rijkswaterstaat to take some quick measures to reduce congestion on several locations on the Dutch road network. It is used to speed up procedures for implementation of peak hour lanes. These quick measures will later on be followed by long term measures like adding lanes at certain links in the network. Since then 21 peak hour lanes have become operational. All of which showed improvements in traffic flow, especially the one on the ring Eindhoven. Despite a 30 percent increase of traffic, congestion has decreased by 70 percent. This means a 5 to 20 percent reduction of travel time for the road user. In 2006 five more will be added.



Example Dutch peak hour lane

The original programme planned 300 kilometres of peak hour lanes operational in 2008. However, due to environmental issues (air quality) this is reduced to 200 kilometres. Currently TNO, Dutch technical research institute, is examining the effect of peak hour lanes on air quality and so far the results have been promising. No significant deterioration of air quality is noted at the peak hour lane locations.

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