

M42 Active Traffic Management



The M42 Active Traffic Management (ATM) project was established as a pilot project to test a number of innovative operational regimes for improving the performance of busy motorways without resorting to road widening. One significant new feature, which went live in September 2006, was the controlled use of the hard shoulder to relieve congestion during busy periods.

Cambridge Consultants played a major role in defining and implementing the safety programme for what was the first major Highways Agency project to require a safety case. After one year of operation, ATM has been shown to deliver substantial improvements in both road performance and safety.

Our contribution

Cambridge Consultants' contribution to the M42 ATM project included the following:

- Devised a methodology for hazard analysis and risk assessment which could be used to predict – in advance of commencing operation – whether the safety target was likely to be achieved.
- Created a web-enabled hazard log which served as the primary tool for capturing safety-related information and for managing safety-related activity throughout the life of the project.
- Conducted the initial hazard identification workshops and populated the hazard log with a structured set of hazards and causes; this was really the first time that a comprehensive hazard analysis of a UK motorway had been carried out to cover operations, telematics and infrastructure.
- Worked closely with the telematics team in devising the system architecture, with particular emphasis on the safety-critical aspects of the design.
- Worked closely with the operations teams in devising operational procedures, with particular emphasis on the hard shoulder opening procedure.
- Carried out a large proportion of the detailed risk assessments for the system.
- Developed plans for monitoring the safety performance and generated a number of safety status reports.
- Produced the framework for the safety case and drafted two of the four volumes.

This work was carried out under sub-contract to the Managing Consultant, Mouchel Parkman, and alongside our sister company, Arthur D Little.

Results

Compared with the baseline period before construction began, the following results have been achieved:

- Safety has been improved by introducing a controlled environment – initial statistics indicate that personal injury accidents have been reduced by more than 50%;
- Traffic congestion has been reduced by opening the hard shoulder – capacity has increased by 7% and journey time variability reduced by 27%;

The M42 ATM project has been widely acknowledged as an outstanding success. In November 2007, the government announced the decision to extend the scheme to other parts of the motorway network.

© 2010 Cambridge Consultants Ltd and Cambridge Consultants Inc

Ref: CaseNote-PROD-007 v1.0