Contributing towards sustainable development of the core road network

Project Brief: Controlled Motorways and Motorway Incident Detection and Automatic Signalling (MIDAS)

The aims of the Highways Agency's Controlled Motorways Pilot were reduced stop/start driving conditions, smoother traffic flows, improved journey times and reduced accident levels.



BACKGROUND

A major priority for the Highways Agency is to make the most effective use of the existing road network, to reduce congestion and pollution problems wherever possible and to reduce accident levels.

Controlled Motorways refers to the application of mandatory variable speed limits during busy periods to smooth traffic flows so avoiding flow breakdown and achieving greater traffic throughput. The MIDAS aspect of the scheme concerns the detection of traffic queues and the application of advisory speed limits to protect stationary/slow-moving vehicles at the back of the queues. Induction loops installed below the road surface at regular intervals continuously detect traffic volumes and speeds for each lane and this information is used in real-time to determine speed limit settings for both Controlled Motorways and MIDAS.

The Controlled Motorways scheme has now been in operation since August 1995 on a four lane section of the south-western sector of the M25 between junctions 10 and 15, an area which includes Britain's most heavily loaded stretches of motorway, carrying up to 200,000 vehicles per day.



IPL'S CONSULTING SUPPORT

IPL was selected to provide a variety of consultancy support activities on this complex project based on an established track record on motorway traffic control systems.

IPL staff provided a wide range of skills in supporting the development of Controlled Motorways and MIDAS through their lifecycles as follows:

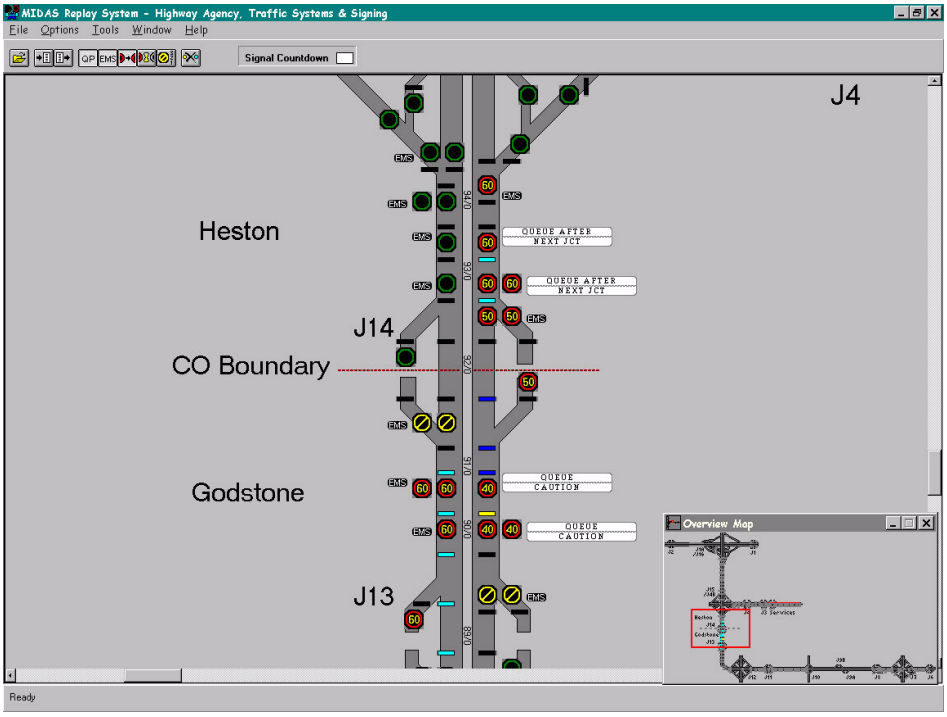
- Reviewing system requirements
- Designing the overall systems solution
- Defining communication protocols, inter office requirements and roadside system components
- Preparing Invitation to Tender documentation, including the full suite of requirement specifications and acceptance test specifications, evaluation procedures and supplier selection
- Providing managerial and technical support throughout both the software and the hardware development
- Supervising the acceptance testing and system commissioning
- Post operational involvement associated with automating data collection, audits, development of modelling tools and assistance in national roll-out.

MANAGING THE PROCESS

IPL provided managerial, technical and contractual support during the project lifecycle in accordance with the IPL's Consultancy Standards and Procedures, part of IPL's ISO9001-certificated Quality Management System. Key milestones were:

- 1993 Contract Award
- 1995 M25 MIDAS Pilot Scheme
- 1997 MIDAS Operational
- 1998 National roll-out starts
- 2000 Data provision for the Midland Driver Information Systems (MDIS).

Deployment on all motorways and selected non-motorway critical roads is planned for the future.



THE OUTCOME

The 1995 M25 MIDAS pilot scheme has made a major contribution to fulfilling the Highways Agency traffic/travel policy of increasing vehicle throughput and reducing accidents.

The usefulness of MIDAS has resulted in the system being rolled out nationally around major conurbations such as Manchester. MIDAS and Controlled Motorways are a major platform for the Government's 10-year transport plan.

Such has been the project's success that IPL's involvement in the project was recognised by the Institution of Civil Engineers with the presentation of a Merit Award in 1996.

FURTHER INFORMATION

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