



Monitor, Inform, Control....

Intelligent Transport Systems

Halcrow has a demonstrated ability to help clients realise their goals of implementing and improving traffic management systems to reduce congestion and improve network efficiency.

Halcrow has a broad range of skills across transport planning and traffic engineering. Intelligent Transport Systems (ITS) offers our clients the potential to improve the efficiency of transport systems through the use of technology. We have partnered with a range of public and private sector clients to deliver real benefits to the travelling public across a broad range of projects.

Our Approach

At Halcrow we seek to help our clients drive innovation through experience we have shared with clients across our global business. We aim to utilise this international expertise by working closely with clients at a local level.

In Australia Halcrow has approximately 50 specialist staff working across a range of transport planning related projects based in Sydney, Melbourne and Brisbane. Our Australian ITS team based in Melbourne and Sydney has a wide range of experience developing the following systems:

- Urban Traffic Management and Control (UTMC) systems
- Freeway Management Systems
- Operational support including strategy development
- Traveller Information Systems (mobile internet, bus stop, kiosk, fixed and mobile VMS)
- Adaptive traffic signal systems including bus priority
- Enforcement Systems
- Real Time Information (RTI) for buses
- Parking Guidance and management systems
- Tolling Systems and road user charging

Traffic Management Systems and Operational Support

Our Australian capabilities include:

- Business case development and economic assessment
- Feasibility studies including detailed traffic modelling
- Functional and technical specification
- Detailed system design
- System testing and implementation
- Traffic Engineering and operational Support including microsimulation modelling with adaptive traffic signal control utilising SCATSIM
- Operational strategy development

Delivering Value – case studies

■ F3 Sydney - Newcastle Freeway Modelling

Halcrow was commissioned by the RTA to develop a model of the F3 Sydney-Newcastle Freeway and alternative routes (Warnervale to Turrumurra).

The purpose of the model was to test the impacts of contra-flow incident management during large-scale incidents in various locations on the freeway at different times of the day. Based on a large data collection program from more than 70 major intersections in the study area, a calibrated and validated 19-hour model of the freeway and associated parallel alternatives was built. Halcrow also provided an analysis of the relative economic benefits of contra-flow under a number of incident conditions.

■ Victoria Road – Inner West Bus Way, Sydney

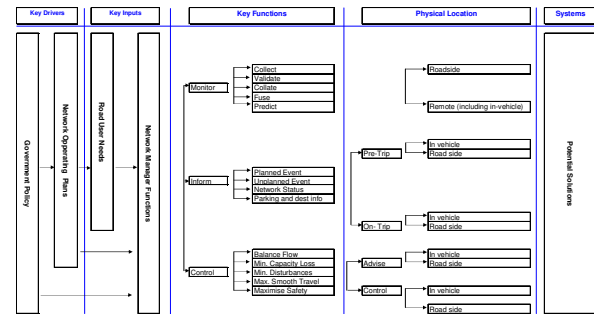
Halcrow experts were part of the alliance team managing the design of the ITS system for the Inner West Busway. This comprised the introduction of tidal flow along the Victoria Road corridor and the use of Variable Message Signs (VMS), Lane Usage Signs (LUS), Changeable Message Signs (CMS), In-pavement Lighting (IPL's) and CCTV's. These measures assisted in the introduction of a Moveable Barrier Machine (below), a first in Australia.



■ Policy Support – Urban Arterial ITS Framework - VicRoads

Whilst on secondment to VicRoads (Network and Asset Planning) Halcrow staff were tasked with developing early phases of an arterial ITS framework to complement work undertaken by VicRoads in recent years to implement managed freeways. It is envisaged that the arterial ITS framework will be used to consider what ITS technologies should be deployed on the urban

arterial network based on the needs of the travelling public and network managers.



Halcrow also recently supported VicRoads to develop costs and benefits to support their submission to Infrastructure Australia for funding of a range of Managed Motorway projects.

■ City of Edinburgh Council (CEC)– Traffic Management and Control Systems

Halcrow assisted CEC to develop and manage the implementation and an UTMC system including a new control centre to provide strategic traffic management control and information to the public via VMS and web interfaces.

Halcrow also developed a travel time information system utilising 120 Automatic Number Plate Recognition cameras and CCTV installed on traffic signals around the city to provide travel time information to the public on 50 VMS. This is the second largest urban ITS system in the UK.

The system has resulted in less congestion around key city centre car parks and greatly improved the council's ability to provide better information during periods of significant disruption resulting from public events or incidents, allowing the travelling public to make more informed decisions.



■ Transport Scotland – Traffic Scotland

Halcrow has provided a range of advice on ITS to Transport Scotland and the operating agency Traffic Scotland over the past three years relating to the implementation and operation of the trunk road network as part of the Performance Audit Group.

We have helped integrate best practice and knowledge sharing to ensure journey time reliability is a key measurable and contractual requirement in the new maintenance contract for Transport Scotland. Halcrow is also managing the following ITS related projects for Transport Scotland:

- Specification and ongoing management of the Scottish Roads Traffic Database contract
- Specification and ongoing management of a trial for fitting of Intelligent Speed Adaptation (ISA) equipment to Transport Scotland's contracting maintenance vehicle fleet

In addition Halcrow staff have also previously assisted Transport Scotland deliver the following:

- The first VMS based travel time information system in the UK (Glasgow)
- Implementation of VMS signs and associated monitoring equipment
- Trialling of a range of incident monitoring and detection systems

■ Highways Agency and National Traffic Control Centre (NTCC) - England

Halcrow participated in the development of the NTCC (2001-2005). Our tasks included:

- Preparing strategies for incident response and information dissemination via VMS, media and automated messaging to agreed parties
- Locating 1,500 new traffic monitoring sites and 600 new ANPR camera sites and providing site drawings and safety audits
- Preparing evaluation methodologies
- Preparing and agreeing operating agreements with every local highway authority and other interested parties such as major shopping centres, airports and ports.

Other recent Halcrow HA projects have included:

- Providing advice on the latest detector technology developments and support to the Highways Agency Steering Group, including management of a trial of Millimetric Radar on the M42.
- Incident Scene Data Capture Provision – investigating how the provision of data to and the

capture of data from traffic officers could improve performance and incident management.

■ RTA Traffic Control Centre, New South Wales

Halcrow staff, as part of the SCATS redevelopment, specified key data models and user interfaces for ITS control systems, namely Transport Management Integration System (TMIS). They also formulated a strategy for the development of a Spatial Data Model for Traffic and Transport Applications.

This project involves the development data model, procedures and programme for the development of a Spatial Data Model for integration of an Incident Management System (CMCS), State Wide Traffic Control System (SCATS), Public Transport Information System (PTIPS) and a Transport Data Management System (TDMS)

Halcrow was subsequently commissioned by the Roads and Traffic Authority (RTA) to prepare a strategy for the TMC redevelopment and a specification of a common network model to allow improved functionality from CMCS.

A Technical Edge

With the opportunity to deliver projects across the globe, Halcrow has developed a technical edge in project delivery.

Our Australian specialists have contributed to the development of key national ITS strategies and technical standards relating to the development of traffic management systems. Halcrow professionals have been on the Urban Traffic Management and Control Development Group since its inception and recently led the formation of the UTMC ANPR Working Group and protocols. They have also contributed to both Australian and ISO ITS standard development on International Standards Organisation Committee ISO TC204/WG3 which published ISO 14825:2004 Intelligent Transport Systems - Geographic Data Files (GDF).

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