CASE STUDY

Digital Diversion Trial (DDT)

M25 J10 / A3 Wisley Interchange RDP Scheme

The background

As an industry, we all understand that nobody likes roadworks. On this project, National Highways aimed to provide customers with a better end-to-end experience of the diversion routes along the M25 J10 / A3 Wisley Interchange, by improving signage and road user information during the works and planned closures. The importance of strategic diversion routes and real-time messaging to the motoring public during the works was further impacted by the complete closures of the M25 / A3 Wisley interchange whilst new bridge infrastructure was installed.

▲ Mobile VMS on the A3 diversion routes off the mainline (M25 Jn 10). The Balfour Beatty control room activated messaging on these VMS remotely, with the option to automate real-time message displays activated by changing road condition information.

Scope & Solution

Mobile VMS Ltd (MVMS) provided Variable Message Signs (VMS), integrated journey time and key diversion route traffic data using both virtual 3rd party sources and roadside traffic sensors. At scheme level we provided digital integration for enhanced provision of road critical information.

Through our collaborative culture and engagement with the wider project teams, innovative approaches to effective monitoring and control of traffic were realised. As a solution provider, in addition to our VMS assets and provision of real-time Journey Time (JTR) deployment, we actively engaged with the Traffic Management (TM) leads and Customer teams to provide valuable baseline data around key diversion routes.

We understood that additional traffic studies were required as part a diversion route trial initiated by National Highways. This detailed traffic study, using a combination of data supplied by MVMS, provided information on the appropriate diversion routes under consideration by National Highways and enabled better planning ahead of the M25 Closures.

MVMS prepared, analysed and assisted with the review of valuable baseline data against specific dates of the carriageway closures. We then assessed the overall impact on journey times and the possible customer perception and experience in conjunction with the digital diversion route working groups.

The working groups consisted of the project team, National Highways representatives and Atkins.

During weekly project review and planning calls, a key element was the updates on stakeholder engagement and public perception in line with TM and planned closures.

During the planned closures of the M25 / A3 Wisley Interchange, the VMS strategy deployed by MVMS also included the adoption of VMS allocated to the Balfour Beatty NEAR South projects, using one platform – JamLogic™ - controlling all 65 assets.

Outcome

The baseline reporting provided by MVMS of traffic studies on the M25 J10 enabled better planning around closure messaging and VMS strategy alongside TM design.

Detailed traffic studies are a vital part of TM integration with other roadworks and key to quicker delivery of projects. The coordinated, interproject collaboration for the VMS strategy, which included training of both projects' teams, using one platform to control messaging ahead of closures, effectively reduced traffic during the closures by 70%, far exceeding the original National Highways target.

In summary, it was agreed that providing the motoring public with advance warning using electronic variable messaging signage, widened local communications by adopting impactful, real-time messaging at strategic decision points.

VMS strategy reduced traffic during the closures by 70%

"MVMS were an integral part of the M25 Junction 10 major project when it came to us being in a position to evidence to our stakeholders, wider industry but more importantly, the customers when it came to the planning and communication of our planned junction to junction weekend closure(s).

This task had never been undertaken on the M25 since its inception, so all eyes were on us at Balfour Beatty to ensure it was a success. MVMS set up the diversion routes we were going to utilise on their digital platform, JamLogic, enabling us to gather effective data when restrictions were not in place.

This detailed data allowed us to agree a base parameter with CPS & Surrey County Council regarding customer journey times and when the closures were implemented, we could monitor the route(s) journey times live, enabling us to intervene and/or implement contingency measures if necessary. MVMS were also crucial when it came to warning the customer, in advance, of these unprecedented closures. We had 27no strategically placed digital units erected in various 'decision' points across the network in the hope it would encourage the customer to utilise other suggested routes. This was proven to be a success when it was identified we had managed to displace approximately 70% of traffic that would normally have transitioned through the junction."

Leon Ireland *MCIHT, FIHE*

Regional Traffic Manager, South | Balfour Beatty | Highways

Additional benefit – Queue Detection

The ongoing progress meetings with the project teams not only enabled us to review our VMS deployment and journey time monitoring, they were also an opportunity to gain further insight into issues with traffic flow and highlight concerns. These discussions with Balfour Beatty, during the coordinated NEAR South and M25 Closure planning meetings, highlighted issues with congestion and queuing traffic on M25 J5-7 and M4 J12.

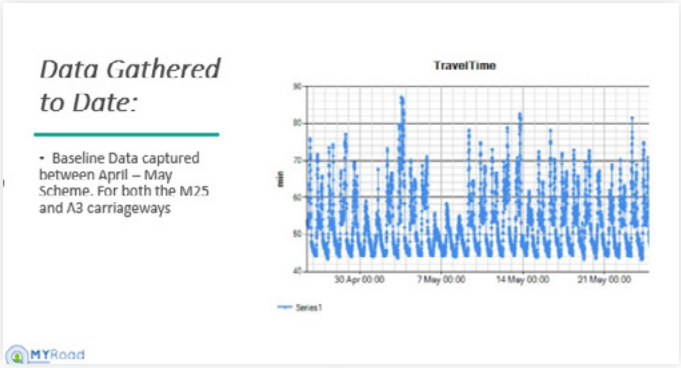
MVMS proposed an innovative trial involving our patented queue detection sensors. These sense queuing traffic and communicate with each other, WAZE, and provide real-time automated advance warning to our upstream VMS. The sensors had previously been utilised by National Highways on the A14 Concrete Roads project, M4 Welford through Chevron, and the A38 Chudleigh. The advance warning ensures an additional layer of safety by alerting high speed traffic to slow / stopped traffic ahead. With Balfour Beatty, engagement and involvement with the wider project and stakeholder teams, enabled MVMS to seamlessly integrate and automate stopped vehicle detection activations on its VMS upstream. This removed the need for manual input within the control room, further enhancing scheme efficiency and safety measures.

> “Mobile VMS continue to provide an industry leading service with regard to electronic display equipment and intelligent traffic monitoring technology. Whilst undertaking the Digital Diversion Trial on the M25 Junction the accuracy of their technology and taking on the role as solution providers has been first class with all reporting driven by their Intelligent software platform JamLogic. Having worked with Mobile VMS on numerous projects they relentlessly collaborative striving for improvements across Safety, Customer Service and optimum Delivery.”
>
> Mark Neville
>
> Head of Traffic Management | Balfour Beatty | Highways

→ Engagement with project teams enables better understanding of the unique issues affecting a scheme and allows a more collaborative approach and innovation to flourish as a result.

▲ Mobile VMS patented queue detection sensors communicate with each other, WAZE, and provide real-time automated advance warning to upstream VMS

▲ Project overview and reporting example via JamLogic.



▲ Example of baseline data analysed and reported through our powerful JamLogic platform. Graphical analysis produced in seconds. Project teams have full access and control with unique user profiles, full project reporting, and post project storage of data.

> “Mobile VMS are a trusted partner of Balfour Beatty Highways, having worked with us on several projects. Most recently they have worked with us on National Highways’ Digital Diversions trial which looks to improve the customer experience for road users travelling on diversion routes associated with our M25 J10 project. They have been an integral part of the project team for the trial, undertaking all of the data reporting and journey time analysis using their intelligent software platform JamLogic in conjunction with their VMS infrastructure along the routes. The accuracy of the JamLogic technology, the useability of the platform and the customer-focussed presentation of the data is excellent and provides a useful tool to inform the project traffic management plans. The Mobile VMS team have a deep understanding of National Highways, their priorities and challenges. As an SME they have developed strong collaborative working relationships, provide a personalised service and bring an innovative perspective, making them truly valued members of our project team.
>
> Nick Fearnhead
>
> Head of Mobilisation and Technology Services | Balfour Beatty

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