

Case Study

Robust Vehicle Detection

Enabling MOVA Signal Control

M100 wireless vehicle detection system used to provide a more durable alternative to loops in an area with high heavy goods vehicle (HGV) traffic.

Background

Hanchurch crossroads on Newcastle Road is situated near junction 15 on the M6. The crossroads leads to a depot for one of the UK's largest haulage companies. Given its proximity to the motorway and haulage depot, the junction experiences a high volume of traffic, with a high proportion made up of HGVs.

Traffic light control has been in place for many years, but was upgraded to MOVA to optimise the flow of traffic through the junction. A change to stage order was also made and the signals were upgraded to an Extra Low Voltage (ELV) system.

Traditional inductive loops were used to provide the vehicle detection needed for MOVA control. Unfortunately, due to the large traffic flows, and the weight of many of the vehicles using the junction, the loops failed prematurely. This meant the vehicle detection information needed for the MOVA system wasn't provided and the traffic signals were not able to work optimally. This caused congestion at the crossroads and surrounding area.

"Using wireless vehicle detection instead of inductive loops proved an ideal solution to the complex challenge we were facing. The system has proven to be more reliable and resistant to traffic from heavy goods vehicles. It was also quick to install; causing minimal disruption to road users and residents."

**Darren Sleight Traffic Signals Engineer,
Staffordshire County Council**

Solution

Re-cutting the loops was not an appropriate solution as the traffic management required for this would have caused huge disruption if done during the day or too much noise pollution for residents if carried out at night. Furthermore, it was anticipated that any new loops would fail just as quickly due to the nature of the traffic.

Staffordshire County Council opted to replace the detection on the leg of the junction leading to the depot with the M100 Wireless Vehicle Detection Solution. This solution uses magnetometer sensors to provide vehicle detection for MOVA. The sensors can be installed in just 15 minutes under simple traffic management as they are installed in a small hole in the centre of the carriageway. This meant the installation could take place with minimal disruption on a weekend morning.

The position of the sensors in the centre of the carriageway makes this a much more robust solution than inductive loops, which span the width of the carriageway. Being in the centre means the sensors are much less likely to be driven over and less prone to issues such as potholes and other forms of degradation of the road surface. The solution now operates without fault, helping to keep traffic flowing at this busy junction.

Key Benefits

- Rapid installation reduces road closures, minimising disruption to local residents and risk to roadworker safety
- Superior reliability and longer operational life than loops
- Reduced installation costs versus inductive loops