Clearview Intelligence
making journeys work

Client: Kier / Highways England
Location: A590 Foulshaw Lane Junction, Cumbria
Application: Vehicle Detection

Case Study
Long vehicle detection with VAS warning system

Innovative safety solution for traffic joining the A590.

Background

The A590 is the main trunk road into and out of the southern area of the Lake District. It is a mix of single and dual carriageway with access to surrounding villages being provided off the main road along the route.

Traffic needing to turn right onto the A590 often use a central reservation area as part of the entry process. This typically requires stationary time in the central reservation depending on traffic flows. The junction of the A590 and Foulshaw Lane is one such combination and over the past 5 years has seen a number of fatal and serious incidents where large HGVs pulling out of Foulshaw Lane have put oncoming traffic at risk of side on collisions.

Following a safety report on this stretch of dual carriageway it was recommended that a Vehicle Activated Sign (VAS) be installed on the westbound carriageway. This warning sign would be activated when a large HGV is detected leaving Foulshaw Lane, making both a left turn or using the central reservation area when making a right turn. The system was also configured to activate when large HGVs make a right turn through the central reservation into Foulshaw Lane, as this manoeuvre poses the same potential risks as a movement out of the side road.

Key Benefits

- Innovative solution that allows for safe introduction of HGV traffic onto main carriageway
- Highly visible warning sign solution that is positively affecting speed and behavior of vehicles approaching the junction
- Year round, reliable solar powered solution deployable in a location where access to mains power was not available.

Solution

Clearview Intelligence worked alongside Kier and Carnell to design a long vehicle detection system that would operate across the junction and trigger the VAS further up the road.

As part of the solution Clearview had to overcome a number of technical considerations including no mains power to the junction detection loops, and that the VAS would be positioned some 300 metres away, meaning remote trigging of the sign activation would be required.

The junction vehicle detection loops and the M680 Vehicle Detection System are powered using a Clearview Intelligence MtPole Solar Panel Roadside Cabinet. The 80w solar powered panel overcomes the lack of mains power at the junction and is fitted with a GSM antenna for radio communication with the VAS.

An innovative bespoke solution was also required to enable the M680 to only trigger the VAS when a long wheel base vehicle was at the junction. This was a significant technical achievement given the slow, stop / start nature of the traffic. The programming also included consideration for when multiple long vehicles are detected and the VAS is required to remain on for longer.

Since the solution has been in place there has been a noticeable change in the speed and behaviour of drivers along the A590 on the approach to the Foulshaw Junction. Local residents have also been quick to notice the change, commenting on how well the system is working within early stages of operation.

"From the inception of the A590 Foulshaw Lane VAS scheme design, there were a number of technical difficulties that needed to be overcome, as the geometry of A590 in this location ruled out the use of the more conventional means of sign actuation. Utilising their existing and effective partnership Carnell and Clearview Intelligence came up with an innovative solution to address the unusual challenges associated with this scheme and in collaboration with Kier Highways, executed the works with minimal disruption to the travelling public and to all necessary timescales".

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