

Case Study

Accident reduction through dynamic warnings

Background

Scotland's A701 runs from Dumfries to Edinburgh. The A701 is a rural single carriageway that is predominantly subject to the national speed limit. The road includes an 18-mile route from the M74 junction to the A75 junction. Following a series of accidents on this section, the 2017 Annual Road Safety Report suggested the road should be the focus of further investigation from which Scotland TranServ conducted an accident review over the previous five years.

The report concluded that tailgating and speeding had been highlighted as contributory factors for most accidents along this route, particularly along the section north of Locharbriggs which was subject to the national speed limit.

In 73 percent of accidents, it was found vehicles were travelling above the appropriate speed threshold for the relevant vehicle class*. On average, 89 percent of HGVs travelled above their 40mph threshold; 57 percent of medium-sized vehicles travelled over their 50mph limit whilst 25 percent of cars and motorcycles exceeded the 60mph limit.

When it came to tailgating, cars and motorcycles were found to be the worst offenders with 26 percent travelling within two seconds of the vehicle in front compared with 17 percent of medium sized vehicles and 10 percent of HGVs.

Scotland TranServ, who have worked with Clearview on similar schemes in the past, sought a resolution to both the issue of tailgating and speeding through a single road safety initiative.

"By working closely with our supply chain partners at Clearview Intelligence we have delivered an innovative road safety solution that we are confident will deliver real results and save real lives. This solution hits drivers directly behind the wheel as they engage in this potentially life-threatening behaviour."

Vincent Tait, Road Safety Manager, Scotland TranServ

Solution

Having previously installed a successful combination solution along the A75, Clearview and Scotland TranServ worked collaboratively to replicate the basis of this project along the A701.

Using a detection system to manage VAS (Vehicle Activated Signs), motorists who are tailgating or driving above the appropriate speed threshold will receive a warning that is specific to their driving behaviour via dynamic signs. Clearview's Count and Classify system detects the gap, speed and classification of passing vehicles and transmits the information to the solar-powered VAS which prioritises the message accordingly.

For those tailgating, the VAS will show a "too close, leave 2 second gap" message whilst speeding vehicles will be presented with a "slow down" message and a reminder of the appropriate speed limit for their vehicle class. In incidents where a vehicle is both speeding and tailgating, the latter message will take precedence. The predicted reduction in accidents will see a 106 percent return rate on investment within the first 12 months, based on Transport Scotland's system of valuing the cost of an accident. *In Scotland different vehicle classes are subject to three different national speed limits; for cars and motorbikes it is 60mph; for medium class vehicles it is 50mph and HGVs are restricted to 40mph.

Key Benefits

- Single road safety initiative addresses two types of dangerous driver behaviour, reducing sign clutter
- Warnings are specific to driver behaviour and vehicle class, resulting in a more targeted solution
- Motorists warned of tailgating or speed by dual purpose VAS, which increases the impact of the warnings
- Predicted 106 percent return rate on investment within the first 12 months compared to accident costs
- Solar powered solution is effective in rural locations