

## Case Study

### Incident prevention

### at Coulter Bridge



#### Background

The A702 runs from Edinburgh to St. John's Town of Dalry in Dumfries and Galloway with the village of Coulter roughly halfway between the two. Travelling through Coulter on the A702 involves crossing a bridge with a narrow carriageway. There is a sharp bend at the bridge with a side road joining the A702 shortly after.

This layout means there is a risk of collisions and there have been several incidents. Strikes to the parapets on the bridge were a regular occurrence, leading to risk to road users.

Amey, on behalf of Transport Scotland, sought a road safety solution to heighten awareness of the risk to road users and increase safety at the bridge.

#### Solution

Clearview Intelligence has worked in partnership with Transport Scotland and Amey on many innovative road safety schemes and was once again able to develop a bespoke solution to the issues faced on Coulter Bridge.

Using our established vehicle count and classification system we developed a solution that detects and classifies vehicles as they approach the bridge as well as determining their speed. Dynamic warning signs were deployed ahead of the bridge to provide drivers with specific warnings.

"Transport Scotland and Amey have worked with Clearview on many safety schemes and value their innovative solution design. However complex the issue, we can be confident that Clearview will develop a solution for it. The Coulter Bridge road safety scheme is another example of an innovative solution to multiple hazards, which we expect will be highly effective in encouraging drivers to change their behaviour."

**Pat Shields, Principal Civil Engineer, Scotland, Amey Consulting**

Using vehicle classification in combination with dynamic signage allows warning messages to be tailored to the specific issue on the bridge at that time.

If a large vehicle is detected on the approach to the bridge, traffic on the opposite side of the bridge will see a warning that there are oncoming vehicles in the middle of the road. This raises awareness allowing drivers to drive with due care and attention.

A driver approaching the bridge too fast will receive a message warning them to slow down. The threshold at which this warning is presented varies depending on the vehicle type, so a large vehicle will be warned to slow down at lower speeds than a car. This level of personalisation increases the effectiveness of the warnings as drivers only see a warning when necessary, meaning they do not become blind to it.

A further warning was developed to be used only when the school day at the village primary school starts and ends. This warns drivers of the part time speed limit and to slow down and be aware of children leaving or arriving at the school.

Unlike static signs or vehicle activated signs that are presented to any passing vehicle, drivers do not become complacent to these dynamic warning signs. Because they accurately reflect the situation on the road and do not alert drivers unnecessarily, the behaviour change that they encourage is far greater.

#### Key Benefits ▼

- Single solution to multiple hazards, thus minimising road clutter and providing value for money
- Effective driver behaviour change due to the relevance of the warnings presented
- Solar powered solution, negating the need for expensive ducting of cables
- Reduced expense and disruption to road users by reducing the likelihood of the bridge being struck