Clearview Intelligence
making journeys work

Case Study

Cawood Swing Bridge

Weight Restriction Monitoring System

Background

Cawood Bridge is a swing bridge which spans the River Ouse in North Yorkshire, England. Constructed in 1872, the Cawood Bridge is now a Grade II listed building. In recent years the bridge has undergone major structural repair work. To protect this important structure there is a weight restriction in place and only vehicles weighing less than 7.5t are permitted to cross the bridge.

To deter heavy goods vehicles from using the Cawood Bridge, North Yorkshire County Council had relied on a weight restriction system, coupled with Automatic Number Plate Recognition (ANPR), and this system had been in place for over a decade. Given the age of the technology and its bespoke nature, a decision was made by the Council in 2015 to replace the legacy system completely.

Solution

Clearview Intelligence, who provided the original system, was approached by the Council to design a unique, sustainable replacement, utilising the latest camera and cloud based software, supported by an ongoing maintenance service. 3M were invited to collaborate on the provision of new ANPR cameras and software to integrate with data collected via Clearview's M720 Vehicle Count Classifier.

The new system does not actually weigh vehicles, but instead is based on a 'length of vehicle' trigger threshold, as captured by the M720. Dual ANPR cameras are triggered following length classification, and images of offending vehicles are captured as they cross the bridge.

All image capturing is overlaid with an accurate date and timestamp. The cameras transmit live data via ADSL modem to our cloud servers which run 'portal' software. A timed image folder for each vehicle which triggers the system is then forwarded to an FTP server that can be viewed via a secure web based login.

The client can easily examine each captured event and determine if the vehicle warrants further investigation. Those vehicles considered to be offending are exported to the necessary authority to check against DVLA records. The image system has NAAS certification (Home Office approved National ANPR standards) and ensures reliable prosecution of any offenders.

The complete system can be accessed remotely using the portal and VPN tunnel, enabling the support team to undertake daily health checks and preventative maintenance, and to respond instantly to any faults to ensure continued operation.

As an added benefit to the client, all vehicles crossing the bridge are classified by the M720 and fed live to the hosted instation. This enables the client to access all vehicle data from a personal account where they may view an array of graphical and tabular data reports including traffic flow, total count, class, speed, peak traffic graphs etc. This gives the client the ability to review traffic using the bridge on an hourly/daily/weekly/yearly basis, which provides vital intelligence for decisions relating to the ongoing maintenance and upkeep of this historic structure.

The robustness of the system was put to the test just weeks after installation when the River Ouse flooded the bridge in December 2015. Despite the extensive water damage to infrastructure and buildings around the bridge, the system had been carefully installed even higher than the unprecedented flood level and, once the waters receded and the mains electricity supply was restored, the system was fully operational again.

Key Benefits

- Length based classification coupled with image capture offers a more cost effective option than Weigh In Motion, with less maintenance costs

- Maintains the privacy of non-offending motorists with image capture for enforcement purposes only of vehicles considered offending. This option is not possible with traditional free-running ANPR or CCTV equipment

- The system offers remote access for configuring counters and cameras via a VPN tunnel setup

- Data for all vehicles crossing the bridge is directed to the hosted in-station (Insight platform) and enables the client access to all vehicle data, with an array of graphical and tabular data reports available as required

- The image system has NAAS certification (Home Office approved National ANPR standards) and ensures reliable prosecution of any offenders