Automatic Enforcement

Nottingham City Council's fully automated ZenGrab LaneWatch enforcement solution has increased compliance and improved road safety in and around Nottingham City Centre.

Unattended camera enforcement is increasingly proving to be the most cost effective way of improving road safety as well as improving the speed and reliability of public transport. Take the example of the once treacherous tram gate Goldsmith Street in Nottingham. High numbers of vehicles used to take a shortcut through the tram gate, posing a real threat to those getting on and off trams.

As the main stop for the Nottingham Trent University Library, the gate is used by thousands of students and shoppers every day, explains Ian Nash, team leader, traffic management at Nottingham City Council. "Students and members of the public alike do not expect cars and vans to be driving through that junction, and can subsequently be less wary when crossing the road," he says.

"We had been approached by Nottingham Express Transit, the operators of the Nottingham tram network. They had safety concerns over the amount of vehicular traffic illegally using the tram gate on Goldsmith Street in the city. They needed a solution that would stop the illegal use of the tram gate as a shortcut while still allowing the tram to move freely through the station."

Enter LaneWatch

The council decided that CCTV enforcement offered the best way of reducing the number of vehicles using the tram gate, while still maintaining an efficient tram service. They turned to Zenco Systems Ltd to provide two automated, digital, LaneWatch cameras, initially for a trial period.

Steve O'Sullivan, the council's technical officer, traffic & safety, says: "Initial trials proved a great success and confirmed that the tram gate was being used as a short cut by 200 to 300 vehicles a day. Drivers seem to be unaware of the danger that they are putting themselves, the trams and members of the public in".

After a successful trial, LaneWatch cameras were installed to provide 24-hour coverage of the tram gate for inbound and outbound city traffic.

Nash says: "As a result of the installation of the first two of these LaneWatch cameras, the authority has seen an improvement in road safety; by reducing both pedestrian and vehicular conflicts around one of the busiest tram stops in Nottingham". After the installation, the initial contravention rates were very high at around 250 a day. However, over the first eight weeks of operation we saw a change in driver behaviour and the contravention rates gradually dropped to around 25% of the initial figure."

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The LaneWatch cameras at Goldsmith Street proved so effective that additional cameras have now been installed at 20 other locations to monitor bus lanes across the city. "The cameras are extremely effective at capturing bus lane contraventions. The initial cost of employing LaneWatch is quickly repaid, both financially and more importantly by reduced contravention rates and an improved public transport system," Nash points out.

A pioneering approach

In 2007 Nottingham City Council was among the first local authorities outside London to install and operate a fully digital bus lane enforcement system. Since its installation, the council has reported that the system has helped reduce bus lane contraventions by 61%, improving bus reliability and journey times and subsequently improving the numbers of people traveling on public transport in the city.

The council was keen to extend the system to other bus lanes in the city, but was restricted by the cost of fibre optic transmission cable and staff to monitor new cameras, says Nash.

Zenco's unattended LaneWatch system presented a cost effective solution.

The cameras, which are approved for use by the Vehicle Certification Agency (VCA), provide bus lane enforcement without the ongoing cost overheads associated with attended enforcement, says Zenco's sales director Adrian Ford. "The process of detection, identification and recoding of the evidence are now carried out automatically. This, combined with wireless cellular data transmission, makes the LaneWatch cameras both highly efficient and cost effective.

"It is no longer necessary for operators to sit in front of CCTV screens, viewing bus lanes and waiting for potential contraventions to take place. The cameras can monitor bus lanes and bus gates 24 hours of the day without the need for operator intervention. Contravention evidence is captured and transmitted for review automatically, increasing accuracy, efficiency and lowering costs."

Automated solution

The LaneWatch cameras use digital technology to perform many of the tasks traditionally carried out by a CCTV operator. The in-built close-up camera captures images of vehicles using the bus lane, which are then processed by automatic number plate recognition (ANPR) software. A second camera captures images both before and after a potential contravention has taken place to provide a contextual overview of the circumstance of the offence.

This, together with the GPS synchronized time, date and location, are formed into an encrypted evidence pack before being wirelessly transmitted back to the control system for review, explains Ford. "Furthermore, the wireless transmission is performed over the GPRS/3G cellular network, keeping communications costs down"

LaneWatch requires very little on street maintenance, keeping the operating overheads to a minimum, explains Ford. "When combined with the ZenGrab Digital Enforcement Suite, the LaneWatch cameras create the most efficient, effective and sustainable enforcement system available today. The original ZenGrab Suite revolutionized attended parking and traffic contravention enforcement. LaneWatch continues that revolution for the unattended enforcement market."

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