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Automated enforcement is a rich store of traffic safety information.

Municipalities and law enforcement agencies across Alberta are sitting on a rich store of traffic safety information. Every day, cameras in our communities record the licence plates of drivers who exceed posted speed limits, run red lights and speed through intersections and school zones.

Automated enforcement (AE) technologies are a relatively new traffic safety tool, several forms of which are now deployed throughout Edmonton, Strathcona County, St. Albert and other Capital Region municipalities. In the Capital Region, two different types are used: Intersection Safety Devices (ISDs), and Photo Radar Cameras (PRCs). The use of these automated safety tools has resulted in large numbers of license plates with associated lists of infractions being stored in police databases. Currently, the sole use of this data is to provide proof of the infractions for the legal proceedings associated with the violations.

The Study

Could this data be put to work in other ways? Could this information be used to identify those drivers who repeatedly break traffic safety laws and put all of us at risk? That's the question the Capital Region Intersection Safety Partnership (CRISP) asked. In 2012, CRISP partners supported a study by Neil Topinka, a researcher from the University of Alberta Criminology program, to explore the potential of AE data and determine how it could be used to improve road safety in the Capital Region. The study used AE data from the City of Edmonton and Strathcona County for 2010-2011. A total of 669,186 violations associated with 378,138 vehicles was used as well as additional collision, driving and criminal records.

The data was used to create 12 groups of drivers, based on the number of AE violations associated with a single vehicle – from 1 violation to 12 or more. The researcher then looked for relationships between the number of AE violations and collision involvement, other traffic violations and criminal history.

“We found there was a connection between AE violations and collisions,” says Sgt. Chris Narbonne of Strathcona RCMP and CRISP Chair. “Drivers with more AE violations had more collisions than other drivers and those with 12 or more violations were involved in more injury collisions. Even more interesting, we found a relationships between high AE violations and those with a criminal history.”

Relationship between AE violations and collision involvement

On average, drivers with more AE violations had more collisions than other drivers. Moreover, those drivers with 12 or more AE violations were involved in the highest proportion of injury collisions: 21% compared to 12-17% among drivers with fewer AE violations.

Relationship between AE violations and other traffic violations

On average, drivers with higher numbers of AE violations committed higher numbers of demerit-earning violations than did other drivers. For example, in this study the registered owners of vehicles with the most AE violations received, on average, three demerits per year of driving, compared to a random population average of less than one demerit per year of driving.

Relationship between traffic violations and criminal history?

Drivers with criminal records were more likely than drivers without criminal records to have higher numbers of AE violations. These drivers were also more likely to commit demerit-earning violations than drivers with the same number of AE violations who do not have criminal records.

AE violations across jurisdictions?

The findings also indicate a case for streamlining data collection between municipalities in the Capital Region. Of the vehicles with at least one AE violation, 5.3% committed AE violations in both the City of Edmonton and Strathcona County. Roughly 10% of drivers with only 2 AE infractions had committed violations in both jurisdictions. In comparison, over 30% of the most prolific offenders had violations in both the City of Edmonton and Strathcona County. Generally speaking, drivers with more AE violations were more likely to offend in both jurisdictions.

“Using AE is not about generating revenue – it’s about saving lives. AE slows down drivers and deters them from running red lights and that makes safer roads for all of us,” says Narbonne. “Now we are looking at taking this one step further to see how we can support law enforcement activities to keep both our roads and our communities in the Capital Region safer for everyone.”

The City of Edmonton currently has 50 ISDs at 28 intersections. St. Albert has 3 and Strathcona County has 7. In addition, both Edmonton and St. Albert use PRCs on a daily basis at multiple locations.