

CVOR EFFECTIVENESS STUDY
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Background/Context

The Ministry of Transportation (MTO) operates a Commercial Vehicle Operators' Registration (CVOR) program that acts as the platform for the ministry's intervention and sanctioning program. The CVOR system tracks the on-road safety performance of the following vehicles:

- Trucks that have a gross weight or registered gross weight over 4,500 kg (9,920 lb) and
- Buses that have a seating capacity of ten or more passengers.

The goal of the CVOR system is to improve road safety for all users of Ontario highways by having an effective monitoring and intervention system for all carriers. Poor performance may result in ministry interventions and sanctions up to the loss of privileges to operate commercial motor vehicles.

The system monitors a carrier's performance record within Canada over a two year period, similar to the driver demerit point system. Points based on the severity of safety infractions are assigned for Canadian safety-related convictions (driver and carrier), collisions and out of service defects resulting from Commercial Vehicle Safety Alliance (CVSA) inspections.

The CVOR record provides public information on a carrier's safety performance and facilitates MTO carrier interventions.

A CVOR certificate is required for commercial vehicles operating in Ontario that are:

- Plated in Ontario,
- Plated in the USA, or
- Plated in Mexico.

Vehicles that are plated in other Canadian provinces or territories do not need a CVOR certificate. They require a safety fitness certificate from the province or territory in which the vehicle is plated.

Carriers that operate certain types of vehicles do not need a CVOR certificate. These vehicles include:

- A truck or bus that is plated in another Canadian jurisdiction
- A truck with a registered gross weight (RGW) and a gross weight of 4,500 kg or less, whether towing a trailer or not
- A truck or bus leased by an individual for 30 days or less to move their personal goods, or to carry passengers at no fare
- An ambulance, fire apparatus, hearse, casket wagon, mobile crane or tow truck
- A truck or bus operating under the authority of a dealer plate or an in-transit permit

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- A bus used for personal purposes without compensation
- A motor home used for personal purposes
- A pickup truck used for personal purposes

Upon registration in the CVOR system, event data including collisions, convictions, CVSA vehicle inspections and facility audit results, are used to monitor the on-road safety performance of the carrier's commercial motor vehicle fleet as well as the carrier's compliance with highway safety legislation and regulations. This information is matched against key operational elements such as kilometric travel and fleet size to determine the carriers' safety ratings and to determine intervention and sanctioning thresholds at which the ministry should take action to ensure Ontario's roads remain safe.

Changes to the CVOR Program

Since 2008, the ministry has made two significant revisions to the CVOR program to improve its effectiveness and efficiency as an intervention and sanctioning tool.

The first change, introduced in 2008 and fully implemented in 2010, was the CVOR Renewal Program ("renewal"). Prior to 2008, there was legislation in place to require that all carriers report to the ministry when there were material changes in their operational structure (i.e. adjustments to fleet size, change in location, change in corporate officers, changes to kilometric travel), however many carriers simply did not report this information. As a result, the ministry was not able to identify the number of actively operating carriers, nor were they able to equitably assess the safety performance of carriers relative to others within the same operational peer group.

The Ministry and a number of key industry stakeholders felt that the CVOR program is only as effective as its ability to monitor, intervene and sanction commercial carriers in a timely and fair manner and they were concerned that without current operational information such as fleet size and kilometric travel, the monitoring and intervention thresholds may be skewed and the ministry may not be able to fairly assess the safety of carriers operating in the province.

To address these issues and to ensure the effective and efficient use of the ministry's resources in intervention and sanctioning events, the ministry developed an annual renewal program whereby CVOR holders are required to update their operating information on an annual basis.

These changes were introduced on January 1, 2008 and they required that all CVOR certificates be assigned an expiry date. Prior to this, an operator's CVOR certificate never expired. Existing (non-expiring) certificates were assigned an expiry date over a two-year transition period, ending in 2010 to assist in the transition. Once the transition period ended, the ministry began to require that the CVOR be renewed annually by the operator unless the operator has a carrier safety rating of

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"satisfactory" or "excellent". These operators are only required to renew their certificate every two years.

There is a nominal fee associated with the annual renewal (\$50). New entrants to the CVOR program are required to pay a one-time registration fee (\$250). The fees collected are used to offset the costs of the registration and renewal system; previously free for operators. These fees are less than those being charged in many other jurisdictions for the same services and are Eurig compliant.

Operators are sent a notice of expiry 60 days prior to expiry (90 days during the transition period). A carrier that does not renew prior to the expiry date is liable to a fine and possibly to imprisonment, under section 21(2) of the Highway Traffic Act, if one or more of its commercial motor vehicles is found operating on an Ontario highway. In addition, subsection 20(2) authorises a police officer which includes MTO Officers as defined in section 6 (1) to detain the vehicle and seize the permits and number plates of the vehicle until it can be brought into compliance with the Act.

The second significant change to the CVOR program was fully implemented in 2009 and changed the intervention model developed to trigger the various sanctions that the ministry undertakes when there is a cause for concern about a carrier's safety performance.

The intervention model was developed using operational data, such as kilometric travel and collision, conviction and inspection events to identify carriers having poor on road safety performance. The new intervention model is predictive in nature and identifies carriers at high risk of future collision so that MTO can intervene before a collision occurs.

The new intervention model was the result of predictive analysis undertaken by the ministry using 5 years of randomly selected data and involved key industry stakeholders. The results of the predictive analysis were consistent with a much larger study conducted in the United States by the American Transportation Research Institute (ATRI). The predictive model is made up of a number of variable factors likely to influence future behaviour or results. The output is a linear equation showing how the predictors can be combined to derive the odds or the probability of a specific outcome.

Based on the predictive model, points are assigned based on the severity of infractions and the likelihood these infractions would contribute to a future collision. The analysis identified a high correlation between rate of travel and collisions; therefore kilometric travel is used by the ministry as a measure of risk exposure.

Recently some stakeholders have complained they are disadvantaged by the use of kilometric travel as a measure of risk.

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Objective

The objective of the 'CVOR Effectiveness Study' is to measure, from a business perspective, the performance of the CVOR Renewal Program and Intervention Model changes to determine whether or not they are meeting their stated objectives and their stated impact on overall road safety.

The CVOR Renewal Program evaluation should be able to determine:

- how well the program is functioning; and
- how congruous services are with the goal of the program.

The CVOR Intervention Model evaluation should be able to determine:

- how the new baseline has affected the new model;
- whether the rules in place are effective, relevant and fair for the industry as a whole when measuring levels of compliance/non-compliance;
- the effectiveness of each intervention level on carrier behaviour (i.e. warning letter, facility audit, interview and sanction); and
- whether the intervention model is a true representation of predicting risk and effective in achieving greater road safety in Ontario

Deliverables

Perform and document a CVOR Effectiveness Study as follows:

- Deliverable 1: Recommendations, options (analysis), and implementation strategies for CVOR Renewal Program
- Deliverable 2: Recommendations, options (analysis), and implementation strategies for CVOR Intervention Model
- Deliverable 3: Recommendations, options (analysis), and implementation strategies for the effectiveness of each intervention on carrier behaviour (i.e. warning letter, facility audit, interview and sanction)
- Deliverable 4: Documentation of process flow, processes used and steps taken to conduct the analysis of the CVOR Intervention Model
- Deliverable 5: Analysis of joint impact on the province's goal of having the safest roads in North America and recommendations
- Deliverable 6: Final Summary Report including clear options (analysis) based on visible evidence with explanations. Preferred options should be identified and each option should clearly explain why it was chosen as an option and should be presented with risks and SWOT analysis. Each option should also include implementation strategies and next steps.
- Deliverable 7: Closing presentation for Ministry representatives (including senior management) to present the options in the Final Summary Report

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and address follow up questions and concerns by Ministry staff.
Further analysis may be required to address concerns.

Work Description

The 'CVOR Effectiveness Study' is to study the independent and cumulative impact that these two changes (CVOR Renewal Program and Intervention Model) have had on the province's goal of having the safest roads in North America and on the on-going administrative efficiencies to the program resulting from model. As part of the effectiveness study significant stakeholders are to be consulted, particularly those who participated in the development of the new intervention model. Collaboration is also required with MTO to ensure communications with internal/external stakeholders are planned, approved, and executed in a timely manner. At a minimum bi-weekly status reports should be provided and at a minimum monthly status meetings should be held. A hotel station will be provided in St. Catharines (301 St. Paul Street, St. Catharines, ON) and the majority of the consultant(s) work and time is to be conducted on site.

The analysis required will address the effectiveness of these measures to improve road safety in Ontario and the administrative efficiencies of each program. The final report should contain detailed recommendations, options and preferred options based on visible evidence with explanations and analysis, explanations for why each option was chosen along with risks and SWOT analysis, and the implementation strategies and next steps for the recommendations and options provided.

The CVOR Renewal Program study should include, but is not limited to:

- identifying and documenting the extent to which the renewal program was designed and implemented as planned;
- identifying and documenting the significant or key components of the renewal program from both the program and the stakeholder perspectives;
- identifying and documenting areas/opportunities for modification to better meet program goals and/or facilitate continuous improvement.
- Identifying and documenting administrative and operational strengths, weaknesses, opportunities and threats to operate the current or future Renewal Program

The CVOR Intervention Model study should include, but is not limited to:

- determining if the current model accurately identifies the risk of a carrier's likelihood to be involved in a collision;
- determining if specific carriers, types or groups of carriers are treated fairly by the new intervention model, for example is the use of kilometric data as a measure of risk disadvantaging some carriers;
- determining whether or not the perceived outcomes are the result of the model itself (i.e. attributable) or if there are other factors external to the model that may be having an impact (e.g. economic conditions, demographics, organizational context, resources);

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- determining, analyzing and providing solutions for gaps that may appear in the intervention model's ability to identify risk and the results achieved from the triggered actions (i.e. if a carrier is triggered for a facility audit did the result of the audit reflect the need for an audit to be conducted?) Are threshold triggers appropriate for each type of intervention?;
- reviewing and analyzing performance information and measure actual outcomes with intended outcomes and performance standards as well as compare the outcomes with other programs that have similar goals;
- identifying and documenting its benefits, positive and negative impacts to the program and its intended and unintended outcomes;
- identifying and documenting effective and ineffective practices and activities; and
- determining any confounding factors that may obscure or enhance the apparent effects of the model change
- documenting the process flow, processes and steps taken to conduct the analysis of the CVOR Intervention Model