

December 2018



## AN INDEPENDENT AUDIT OF COMMERCIAL VEHICLE SAFETY

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of British Columbia

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The Honourable Darryl Plecas  
Speaker of the Legislative Assembly  
Province of British Columbia  
Parliament Buildings  
Victoria, British Columbia  
V8V 1X4

Dear Mr. Speaker:

I have the honour to transmit to the Speaker of the Legislative Assembly of British Columbia the report *An Independent Audit of Commercial Vehicle Safety*.

We conducted this audit under the authority of section 11(8) of the *Auditor General Act* and in accordance with the standards for assurance engagements set out by the Chartered Professional Accountants of Canada (CPA) in the CPA Handbook—Canadian Standard on Assurance Engagements (CSAE) 3001 and Value-for-money Auditing in the Public Sector PS 5400.



Carol Bellringer, FCPA, FCA  
Auditor General  
Victoria, B.C.  
December 2018

# AUDITOR GENERAL'S COMMENTS

**COMMERCIAL VEHICLES IN** British Columbia include a wide range of vehicles from taxis, limousines and buses, to long-haul semi-trailer trucks, emergency vehicles and construction vehicles.

For this audit, we focused primarily on the safety of heavy commercial vehicles such as semi-trailers. Heavy commercial vehicles represent less than 3% of vehicles registered in B.C., yet they're involved in 19% of the fatal collisions. In the majority of those fatal collisions, the commercial driver is not at fault. All road users have a responsibility for safety around commercial vehicles.

In this audit we looked at many aspects of commercial vehicle safety, from driver licensing and safety awareness programs through to vehicle inspection facilities, and the roles of commercial vehicle safety and enforcement officers and all road users.

For licensing, we found government doesn't yet know whether commercial licensing standards in B.C. are adequate but it has recently started to look at this issue. Currently, drivers are not required to take specialized training to get their commercial licence in B.C. In comparison, Europe has had mandatory training for commercial drivers in place for more than 10 years, Ontario brought it in last year, the United States is phasing it in over three years, and Saskatchewan, Manitoba and Alberta all have plans to do so soon.

Education and awareness programs for road users on safe driving in and around commercial vehicles are limited in B.C. This is in large part because multiple organizations are involved in these programs, including the Insurance Corporation of British Columbia (ICBC), the Ministry of



**CAROL BELLRINGER, FCPA, FCA**  
*Auditor General*

## AUDITOR GENERAL'S COMMENTS

Public Safety and Solicitor General and the Ministry of Transportation and Infrastructure, among others. While individually they each work to address safety education and awareness programs within their own mandates, none has the authority or budget for overall responsibility.

In terms of inspecting vehicles for safety on a regular basis, the Ministry of Transportation and Infrastructure has licensed private inspection facilities. These facilities help ensure commercial vehicles are safe to operate. However, when the facilities don't follow the rules, the ministry doesn't have a clear and progressive system to hold the facilities accountable.

With respect to enforcing safety rules when commercial vehicles are on the road, the ministry is challenged to ensure a consistent approach across B.C. This is partly because of the way the Ministry of Transportation and Infrastructure is organized and it's why we're recommending the ministry look at the governance structure for commercial vehicle safety.

When it comes to knowing whether commercial vehicle safety programs are achieving their goals, government collects a lot of data regarding road safety, but doesn't sufficiently analyze it. We wanted to show what was possible with data analysis. As part of our audit work, we used a statistical model to assess the impact of inspection and enforcement activities on commercial vehicle safety. The model we used suggests that over the past three years, roadside inspection and enforcement activities on commercial vehicles in B.C. prevented an estimated 1,100 crashes, including four fatalities and more than 260 injuries. This saved an estimated \$130 million in social costs, which includes lost working days, medical costs and around \$18 million in ICBC insurance costs.

Overall, we found that the Ministry of Transportation and Infrastructure, ICBC and the Ministry of Public Safety & Solicitor General have programs, policies and safety measures in place for commercial vehicle

## AUDITOR GENERAL'S COMMENTS

safety that prevent crashes and save lives, but much more needs to be done to ensure British Columbia's roads are safe. Everyone needs to be more aware when using the roads. As we head into the holiday season in particular, I'd encourage everyone to review the [Be Truck Aware safe driving tips](#).

I'd like to thank the ministries, ICBC and everyone we spoke with, in particular commercial vehicle safety and enforcement staff in the field, for their co-operation and involvement throughout this audit. We were truly impressed with the dedication we saw from staff in the field to such a challenging job.



Carol Bellringer, FCPA, FCA  
Auditor General  
Victoria, B.C.  
December 2018

# REPORT HIGHLIGHTS

Road safety is  
**EVERYONE'S  
RESPONSIBILITY**

**19%** of fatal collisions involve a heavy commercial vehicle. Usually **NOT commercial driver's fault**

**>3%** of registered vehicles in B.C. are **HEAVY COMMERCIAL**

Everyone needs to be **MORE AWARE** OF COMMERCIAL VEHICLES when using the roads

Safety education and awareness programs can

**PREVENT  
CRASHES**



**B.C.'s programs on safe driving** in and around commercial vehicles are **LIMITED**

Driving a commercial vehicle in B.C. **DOESN'T REQUIRE SPECIALIZED TRAINING**

**CVSE**

**CVSE OFFICERS:**

- highly skilled
- extensively trained
- difficult job
- could do more with better supports

Inspection and enforcement activities **SAVE LIVES** — and — **PREVENT INJURIES** by preventing crashes



**Government needs to do much more** to ensure commercial vehicle safety

# SUMMARY

**COMMERCIAL VEHICLE TRANSPORTATION** is key to the Canadian economy, as most goods in Canada travel by road, particularly manufactured goods. Commercial vehicle transportation brings benefits to society, but there are also risks. We all share the road with commercial vehicles, so our safety is affected by their safety. On average, over the past 10 years, about 300 people per year have died in motor vehicle incidents, of which about 60 died in incidents involving a heavy commercial vehicle. The B.C. government's road safety goal is zero fatal collisions.

For this audit, we focused primarily on the safety of heavy commercial vehicles, such as semi-trailers, because when these vehicles are involved in a collision the results can be severe. Heavy commercial vehicles represent only about 3% of vehicles registered in B.C., yet they're involved in 19% of fatal collisions. In the majority of those fatal collisions, the commercial driver is not at fault. Clearly, all road users have a responsibility for safety around commercial vehicles.

Commercial vehicle operations are regulated through driver and vehicle licensing, as well as through the National Safety Code (NSC) system. In B.C., the Ministry of Public Safety and Solicitor General (PSSG) sets driver licensing policy, and the Insurance Corporation of British Columbia (ICBC) administers driver and vehicle licensing.

The Ministry of Transportation and Infrastructure (TRAN) administers the NSC system, oversees the Vehicle Inspection Program, sets regulations for commercial transport and is responsible for the provincial highway system. Local police forces and the RCMP enforce the rules, along with commercial vehicle safety and enforcement officers who are employed by TRAN within its Commercial Vehicle Safety and Enforcement (CVSE) branch.

Transportation crosses provincial and national borders. Therefore, national and international bodies also play a significant role in regulating commercial transport.

Our audit objective was to determine whether TRAN, ICBC and PSSG have effectively managed their respective programs to promote the safe operation of commercial vehicles on B.C. roads. While we concluded that TRAN, ICBC and PSSG have safety programs in place that prevent crashes and save lives, there remains much more that needs to be done to ensure British Columbia's roads are safe.

## **Government doesn't know if commercial driver licensing standards are adequate**

Commercial vehicle drivers in B.C. are not required to take any specialized training before getting their licence. A number of other jurisdictions have brought in mandatory entry-level training for commercial drivers, including the European Union more than 10 years ago, and Ontario in 2017. The United States is phasing in mandatory entry-level training over three years to 2020, and Alberta, Saskatchewan and Manitoba all have plans to do so soon.



## SUMMARY

We found that the provincial government doesn't yet know whether commercial licensing standards in B.C. are adequate. But B.C. has recently begun to review the role of licensing in road safety and is working on recommendations to improve the province's commercial driver licensing system.

### **Education and awareness programs for all road users are limited**

Education and awareness programs to help all road users behave safely in and around commercial vehicles are limited. This is important because driver behaviour is a key factor in vehicle collisions.

In fatal collisions between passenger vehicles and trucks, research has shown that the driver of the passenger vehicle is more often at fault than the truck driver. In non-fatal collisions, research suggests truck drivers are equally at fault. Therefore, drivers of both passenger and commercial vehicles need education on driving safely in and around trucks.

We found that a number of provincial agencies (including ICBC, PSSG and TRAN) have done work on education and awareness related to commercial vehicle safety, but no one agency has the overall responsibility and resources to do so comprehensively. Also, agencies have not done enough to evaluate how well their programs are working to meet safety goals.

### **Regulatory and administrative policy framework doesn't fully support commercial vehicle safety**

Some areas of the regulatory and administrative policy framework have limited TRAN's ability to ensure commercial vehicles are as safe as they could be. For example, the ministry has set requirements for the private facilities that inspect commercial vehicles to ensure they meet provincial safety standards. However, it doesn't have a clear process for dealing with facilities when they have not met the required inspection standards. If facilities don't follow the requirements, there could be vehicles on the road that don't meet minimum mechanical safety standards.

### **TRAN has challenges ensuring a consistent approach to commercial vehicle safety across B.C.**

Consistency is important to provide fairness and predictability to the transportation industry, and to ensure efficient and effective enforcement of safety rules. However, TRAN faces challenges as it tries to ensure a consistent approach to commercial vehicle safety across B.C. This is partly because of the way the ministry is structured. Officers in the field don't report directly to the Commercial Vehicle Safety and Enforcement branch, which makes it harder to ensure they follow headquarters' policy and priorities.

The ministry has worked to improve the relationship between officers and the trucking industry in order to support voluntary compliance. We observed positive

## SUMMARY

relationships between enforcement staff and the trucking industry in our fieldwork throughout the province.

However, we found three key areas where the ministry's structure contributed to program challenges and inconsistency:

- ◆ The ministry has not consistently enforced standards at inspection facilities that are licensed to inspect their own vehicle fleets. This could affect the safety of these vehicles on the road.
- ◆ Officers in certain parts of the province weren't able to meet ministry expectations for completing carrier safety audits in a timely way. This means that carriers with unsafe behaviour on the road have been left without intervention for longer periods of time than the ministry expects.
- ◆ While the ministry has brought in measures to improve consistency in its compliance and enforcement work, we found there is still considerable inconsistency in inspection and enforcement between districts and regions. This can make their safety work less effective.

### **Commercial vehicle safety and enforcement officers have a demanding job, and better supports would improve their effectiveness**

Commercial vehicle safety and enforcement officers are extensively trained to work in a difficult job and are

highly skilled, but they could be more effective with better infrastructure, information, equipment and training. TRAN has opportunities to improve its support of commercial vehicle safety and enforcement officers.

Inspecting commercial vehicles is physically challenging and can involve difficult personal interactions. Better supports for officers would improve their effectiveness and allow them to do thorough inspections in a safe environment.

Infrastructure such as inspection sheds allow officers to inspect vehicles in all weather conditions. Also, timely access to information is important. For example, being able to access the inspection history of a commercial vehicle when it comes through the inspection station allows officers to inspect the vehicles that are the highest risk for safety issues. Finally, timely training would allow new recruits to be on the job sooner.

### **Safety programs prevent crashes and save lives, but government could do more with better data and analysis**

Government collects a lot of data regarding road safety, but there are gaps and quality concerns. Also, it hasn't analyzed the data to know if its commercial vehicle safety programs are effective. Better data analysis would allow government to know how well its safety programs and activities are meeting its safety goals.

## SUMMARY

As part of our audit, we identified a model that assesses the impact of roadside inspection and enforcement activities on commercial vehicle safety. Using this model with B.C. data suggests that over the past three years, roadside inspection and enforcement activities with commercial vehicles in B.C. prevented an estimated 1,100 crashes, including four fatalities and more than 260 injuries.

As well as the devastating impact that occurs when a life is lost in a vehicle collision, crashes have a financial cost. Preventing these crashes saved the province an estimated \$130 million in social costs, which includes lost working days, medical costs and around \$18 million in ICBC insurance costs.

# SUMMARY OF RECOMMENDATIONS

## WE RECOMMEND THAT:

- 1** the Insurance Corporation of British Columbia continue its recent work to evaluate licensing strategies, including the effectiveness of B.C.'s commercial driver licensing standards, to improve road safety, and that it act upon the findings, in coordination with the Ministry of Public Safety and Solicitor General. This should include consideration of mandatory entry-level training.
- 2** government establish clear responsibility for the promotion of commercial vehicle road safety education and awareness.
- 3** the Insurance Corporation of British Columbia and the Ministry of Public Safety and Solicitor General ensure program evaluation is a key component of the design and implementation of future education and awareness campaigns related to commercial vehicles.
- 4** the Ministry of Transportation and Infrastructure consider reviewing and modernizing the regulations and administrative policy to ensure Commercial Vehicle Safety and Enforcement staff can efficiently and effectively:
  - ◆ assess whether designated inspection facilities have done inspections in compliance with program expectations and remove licences from non-compliant facilities where appropriate
  - ◆ address key safety risks not addressed under current policy
  - ◆ ensure only carriers that have demonstrated the knowledge and ability to operate safely are granted a National Safety Code certificate

## SUMMARY OF RECOMMENDATIONS

### WE RECOMMEND THAT:

- 5** the Ministry of Transportation and Infrastructure review the structure of Commercial Vehicle Safety and Enforcement to ensure greater consistency in inspection and enforcement practices.
- 6** the Ministry of Transportation and Infrastructure ensure timely and consistent interventions with carriers.
- 7** the Ministry of Transportation and Infrastructure assess whether commercial vehicle safety and enforcement officers have the equipment, infrastructure, information and training they need to do their jobs safely and effectively, to ensure they can operate at the level necessary to deter non-compliance and meet ministry safety goals.
- 8** the Ministry of Transportation and Infrastructure, the Insurance Corporation of British Columbia, and the Ministry of Public Safety and Solicitor General ensure the sufficiency, reliability and accuracy of commercial vehicle safety data, and consider ways to integrate data sources to allow comprehensive analysis.
- 9** the Ministry of Transportation and Infrastructure collect and analyze data that enables it to develop appropriate targets and to evaluate the effectiveness of its commercial vehicle safety programs.

# RESPONSE FROM THE AUDITEES

**A SAFE AND** reliable transportation network is critical to industry and the provincial economy. Commercial vehicles and their operators are relied upon daily to provide essential services by carrying resources destined for global commerce, materials for the development of communities and necessities for British Columbian families.

The provincial government is committed to road safety and is proud of its relationship with the BC trucking industry, and of its role providing policy, training, technology and program supports to its operators. Commercial vehicle safety is a critical component of a safe and reliable transportation network, and improvements have been made since the last Auditor General report on Trucking Safety in 1996. This is reflected by a 29 percent reduction in heavy truck crashes involving serious injuries or fatalities over the past ten years on British Columbia highways.

It is recognized that ongoing review and advancement of provincial programs is required to effect further improvements in commercial vehicle safety, and work was already underway at the time this audit was initiated in the following areas:

- ◆ Review of licensing and training programs and strategies with consideration to the advancements of other jurisdictions.
- ◆ Development of a plan focussed on staffing, infrastructure and technology.
- ◆ Review and modernization of the regulations and policies of the Motor Vehicle Act associated with commercial vehicles, particularly Division 25 – Vehicle Inspection and Maintenance.
- ◆ Assessment of training programs to ensure new enforcement officers have the necessary tools

from the outset to conduct their jobs efficiently, while planning refresher/supplemental training opportunities for existing officers.

- ◆ Review of other jurisdictions' quality assurance programs related to vehicle inspections.
- ◆ Creation of a CVSE strategic plan integrating these elements.

The Ministry of Transportation and Infrastructure (TRAN), The Ministry of Public Safety & Solicitor General (PSSG), and the Insurance Corporation of British Columbia (ICBC), would like to thank the Office of the Auditor General (OAG) for conducting an independent audit of commercial vehicle safety in British Columbia. The three organizations accept and appreciate all of the OAG's recommendations as opportunities to further improve the respective policies, practices and programs identified, and respond to the report's published recommendations as follows:

**RECOMMENDATION 1:** *We recommend that ICBC continue its recent work to evaluate licensing strategies, including the effectiveness of B.C.'s commercial driver licensing standards, to improve road safety, and that it act upon the findings, in coordination with PSSG. This should include a consideration of mandatory entry-level training.*

## RESPONSE FROM THE AUDITEES

**RESPONSE 1:** *ICBC continues to actively review licensing strategies and potential program changes to reduce crashes. This includes working with PSSG and TRAN to consider a Mandatory Entry Level Training program for Class 1 commercial drivers.*

**RECOMMENDATION 2:** *We recommend that government establish clear responsibility for the promotion of commercial vehicle road safety education and awareness.*

**RESPONSE 2:** *PSSG, ICBC, and TRAN will work together to identify clear responsibility for the promotion of commercial vehicle road safety education and awareness.*

**RECOMMENDATION 3:** *We recommend that ICBC and PSSG ensure program evaluation is a key component of the design and implementation of future education and awareness campaigns related to commercial vehicles.*

**RESPONSE 3:** *While it is challenging to quantify the effectiveness of educational and awareness campaigns, ICBC and PSSG will evaluate future campaigns to the extent possible and appropriate.*

### **RECOMMENDATION 4:** TRAN

*considers reviewing and modernizing the regulations and administrative policy to ensure CVSE staff can efficiently and effectively:*

- ◆ *Assess whether designated inspection facilities have done inspections in compliance with program expectations and remove licences from non-compliant facilities where appropriate;*
- ◆ *Address key safety risks they encounter on the roads;*
- ◆ *Ensure only carriers that have demonstrated the knowledge and ability to operate safely are granted a National Safety Code certificate.*

**RESPONSE 4:** *TRAN has in progress a review of the Motor Vehicle Act specific to Vehicle Inspections and Maintenance. Further to this review TRAN will also:*

- ◆ *Assess designated inspection facility compliance with program expectations and remove non-compliant facilities, where appropriate;*
- ◆ *Conduct risk assessment with respect to CVSE officer on-road safety;*
- ◆ *Expand and enhance the National Safety Code knowledge testing program.*

## RESPONSE FROM THE AUDITEES

**RECOMMENDATION 5:** *TRAN review the structure of CVSE to ensure greater consistency in inspection and enforcement practices.*

**RESPONSE 5:** *TRAN is actively reviewing consistency in inspection and enforcement practices.*

**RECOMMENDATION 6:** *TRAN address the lack of timely interventions with carriers.*

**RESPONSE 6:** *TRAN will take steps to reduce intervention timelines to ensure potentially unsafe carriers are dealt with expeditiously.*

**RECOMMENDATION 7:** *TRAN assess whether commercial vehicle safety officers have the equipment, infrastructure, information and training they need to do their jobs safely and effectively, to ensure they can operate at the level necessary to deter non-compliance and meet ministry safety goals.*

**RESPONSE 7:** *TRAN has been reviewing the training, resources and equipment used by CVSE officers.*

**RECOMMENDATION 8:** *TRAN, ICBC and PSSG ensure the sufficiency, reliability and accuracy of commercial vehicle safety data and consider ways to integrate data sources to allow comprehensive analysis.*

**RESPONSE 8:** *TRAN, ICBC and PSSG will continue to work together to improve the quality of commercial vehicle safety data and the integration of that data for analysis purposes.*

**RECOMMENDATION 9:** *TRAN collect and analyze data that enables it to develop appropriate targets and to evaluate the effectiveness of its commercial vehicle safety programs.*

**RESPONSE 9:** *TRAN will collect and analyze data that will enable it to develop targets to evaluate the effectiveness of its commercial vehicle safety programs.*

TRAN, ICBC, and PSSG value the recommendations issued by the OAG. Prompt action will be taken to ensure the continued effective management of provincial programs promoting the safe operation of commercial vehicles in British Columbia.



# ABOUT THE AUDIT

## BACKGROUND

### Significance of commercial vehicle transportation and safety

#### COMMERCIAL VEHICLE

**TRANSPORTATION** is key to the Canadian economy. Most goods in Canada travel by road, particularly manufactured goods. In British Columbia, the transportation and warehousing sector is about 6% of gross domestic product (GDP), and truck transportation accounts annually for around \$2.1 billion of GDP, more than forestry/logging and coal mining. Data from the Insurance Corporation of British Columbia (ICBC) show over 105,000 medium and heavy duty trucks (5,000 kilograms and over) and buses in British Columbia in 2017. This was about 3% of the total road motor vehicle registrations. The total number of road motor vehicles registered in the province has been increasing steadily over the past five years, but the number of medium and heavy trucks and buses has increased by more than twice as much as the number of light vehicles (under 5,000 kilograms).

While commercial vehicle transportation brings benefits to society, there are also risks. We all share the road with commercial vehicles, so our safety is affected by their safety. Studies in Canada and the U.S. have shown that, in collisions between cars and large trucks, the occupants of the passenger vehicles are at least four times more likely to be killed than the drivers of the trucks. This doesn't necessarily mean it is the truck

drivers' fault. Research suggests that truck drivers are less likely to be considered at fault for fatal crashes than drivers of other vehicles.

Between 2007 and 2016, ICBC data show that B.C. saw a 4% increase in collisions where at least one heavy commercial vehicle was involved, with an average of 13,000 such collisions each year over the 10-year period. As a result of these collisions, there was an average of 3,200 injured victims each year ([Exhibit 1](#)). Over the same period, overall crashes increased by even more, a growth of 17%.

Heavy commercial vehicles represented less than 3% of vehicles registered in B.C. in 2016 but were involved in 19% of fatal crashes.<sup>1</sup> The total number of fatalities has been decreasing for all vehicles over the past 10 years as technology has changed to better protect people in vehicles, along with changes in other factors that affect fatalities including legislation, policy, enforcement and road design. However, the proportion of fatalities involving heavy commercial vehicles has stayed fairly stable, at an average of 20%. During this 10 year period, the average annual number of fatal victims in collisions involving a heavy commercial vehicle was 61, while the average number of fatal victims not involving a heavy commercial vehicle was 246.

As well as the devastating impact that occurs when a life is lost in a vehicle collision, crashes have a financial cost. The total social cost of commercial vehicle collisions in B.C. is estimated at approximately \$500 million per year on average from 2011 to 2015,

<sup>1</sup> Note that the fatality data include heavy commercial vehicles that could be registered in another jurisdiction. Therefore, caution should be exercised in drawing precise conclusions when comparing 3% heavy commercial vehicle registrations to 19% fatalities.

## ABOUT THE AUDIT

including \$50 million in insurance costs. The social impact of collisions can include lost working days, medical costs and legal costs.

A significant number of factors in heavy commercial vehicle collision deaths are preventable. [Exhibit 2](#) shows analysis by the BC Coroners Service for the

period 2013 – 2015. Weather/road conditions were the most common contributing factor, followed by the various driver behaviours by non-commercial vehicle drivers, and, to a lesser extent, commercial vehicle drivers. Vehicle condition was a contributing factor for 11% of the deaths.

### COMMERCIAL VEHICLES CAN BE DEFINED BY WEIGHT OR USAGE

For insurance purposes, the Insurance Corporation of British Columbia (ICBC) defines a vehicle as commercial based on how it is used: all vehicles insured for commercial use fall into this category. This includes vehicles of any size, from taxis to truck-trailer combinations. ICBC further classifies commercial vehicles by rate class, which combines weight and use criteria: taxi and limousine, light commercial, heavy commercial, long haul, buses and emergency vehicles.

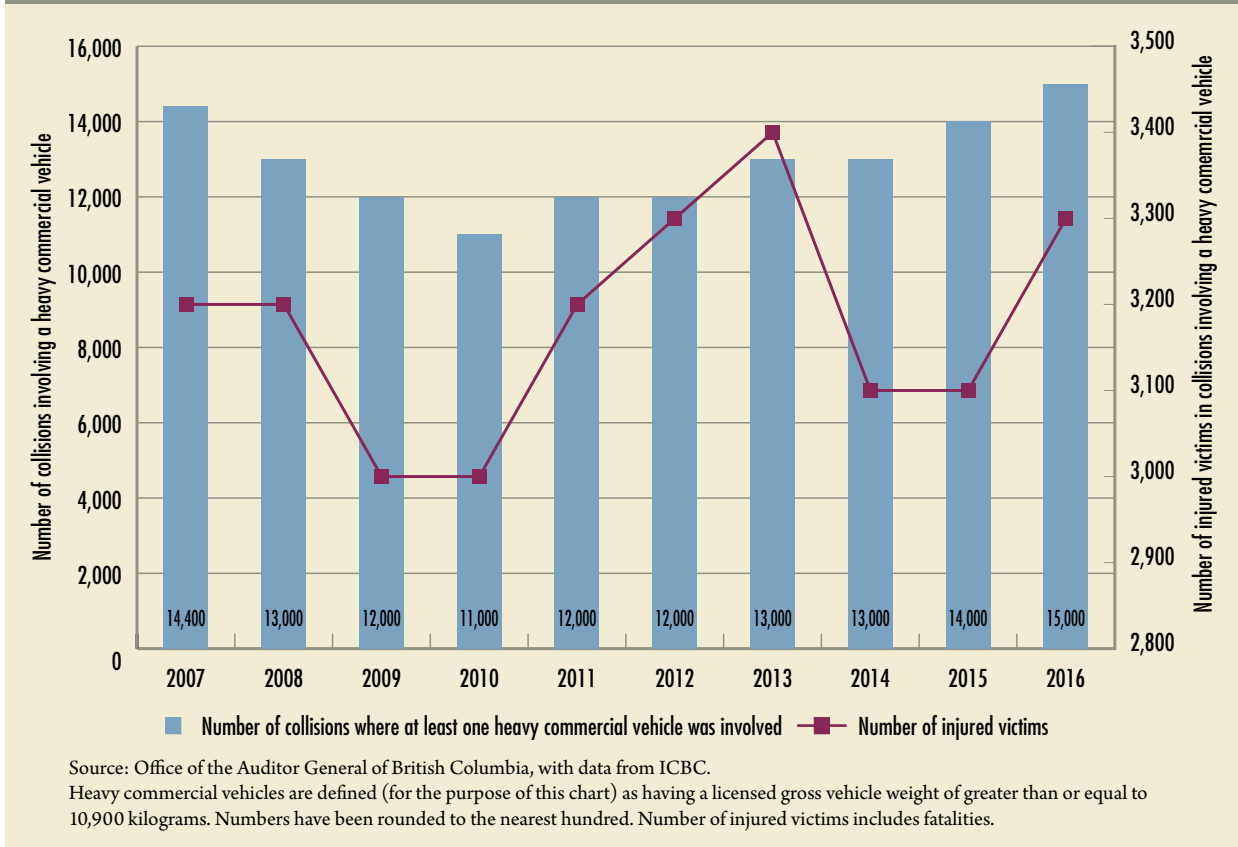
For safety purposes, the rules that apply depend primarily on the weight of a commercial vehicle rather than use. Any vehicle 5,000 kilograms or over falls within the oversight of the Ministry of Transportation and Infrastructure's Commercial Vehicle Safety and Enforcement branch, and the majority require a National Safety Code certificate to operate. *Commercial Transport Act* and Regulations and cargo securement rules also apply to vehicles 5,000 kilograms and over, while the *Motor Vehicle Act* Regulations related to vehicle components apply to vehicles of any weight.

For commercial vehicles used to transport passengers, safety rules are based on both seating capacity and use. For example, taxis require a National Safety Code certificate, even if they weigh less than 5,000 kilograms. In addition, some vehicles that meet the weight requirements are exempt from certain safety rules based on their usage—for example, farm vehicles or construction vehicles.

Definitions of commercial vehicles vary between agencies, depending on their particular focus. Unless otherwise specified, for the purposes of this report we refer to “light” commercial vehicles as being under 5,000 kilograms, “medium” commercial vehicles as being between 5,000 kilograms and 11,794 kilograms, and “heavy” commercial vehicles as being over 11,795 kilograms. Note that these weight definitions may differ slightly in some of the sources we refer to.

# ABOUT THE AUDIT

**Exhibit 1:** Heavy commercial vehicle collisions and injured victims, 2007 – 2016



**Exhibit 2:** Contributing factors in motor vehicle incident deaths involving heavy commercial vehicles, 2013 – 2015

Contributing factor*	% of deaths
Weather/road conditions	44
Driver impairment (non-commercial vehicle)	16
Speed (non-commercial vehicle)	16
Driver error/inexperience (non-commercial vehicle)	12
Other road users	12
Driver inattention (non-commercial vehicle)	11
Speed (commercial vehicle)	11
Vehicle condition (commercial vehicle)	11
Driver error/inexperience (commercial vehicle)	6
Driver inattention (commercial vehicle)	6

Source: Office of the Auditor General of British Columbia, based on data from the BC Coroners Service report, 2017.

\* A case may have multiple contributing factors. For this reason, percentages do not sum to 100. Only factors contributing to five or more deaths are shown. Numbers have been rounded to the nearest digit.

BC Coroners Service defines commercial vehicle in this data as a heavy-duty vehicle used to transport goods. It does not include dump trucks, waste disposal trucks, construction vehicles, cargo vans, vehicles used for passenger transport and commercial vehicles of unspecified type.

# ABOUT THE AUDIT

## Responsibilities for commercial vehicle regulation

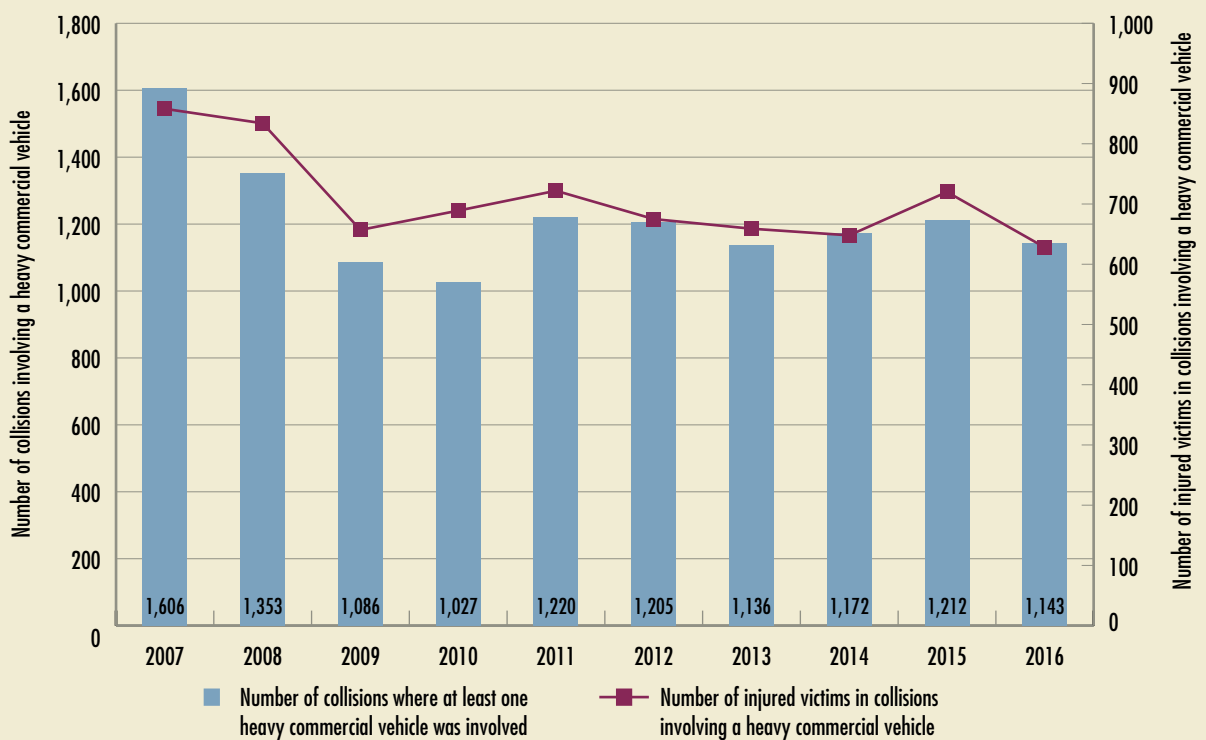
Commercial vehicle operations are controlled through driver and vehicle licensing, as well as through the National Safety Code (NSC) system. In B.C., the Ministry of Public Safety and Solicitor General (PSSG) sets driver licensing policy, and ICBC administers driver and vehicle licensing.

The Ministry of Transportation and Infrastructure (TRAN) administers the NSC system, oversees the Vehicle Inspection Program, sets regulations

for commercial transport and is responsible for the provincial highway system. The relevant regulations are enforced by commercial vehicle safety and enforcement officers, employed within TRAN’s Commercial Vehicle Safety and Enforcement (CVSE) branch, as well as by local police forces and the RCMP.

Municipal roads fall within the jurisdiction of municipalities. Although TRAN’s commercial vehicle safety and enforcement officers can and do operate on municipal roads, the ministry’s primary focus is on provincial highways.

**Exhibit 3:** Heavy commercial vehicle collisions and injured victims—Provincial highways only, 2007 – 2016



Source: Office of the Auditor General, based on TRAN data. TRAN defines heavy commercial vehicles as having a licensed gross vehicle weight of 11,795 kilograms and over.

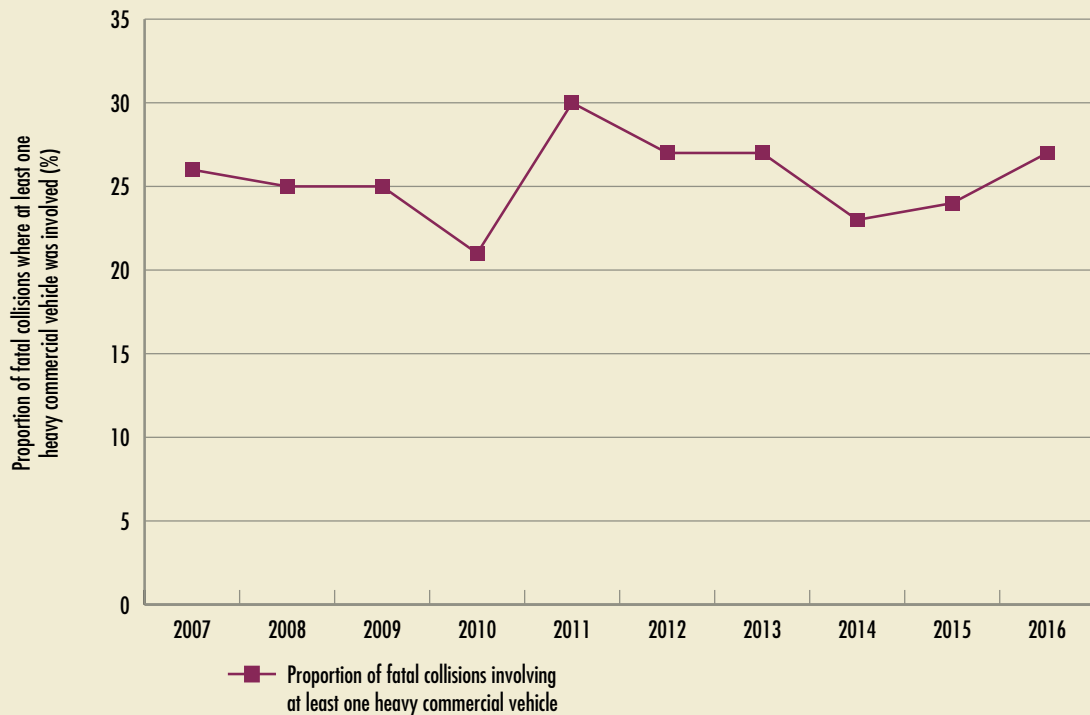
# ABOUT THE AUDIT

Therefore, when the ministry tracks performance measures for safety and other programs, they focus on data from provincial highways, using the data recorded by the police in the Traffic Accident System. [Exhibit 3](#) shows that there has been a downward trend over the last 10 years in the number of total collisions and of injury collisions on provincial highways that involved at least one heavy commercial vehicle. This is similar to the trend for collisions on provincial highways that did not involve a heavy commercial vehicle. However, [Exhibit 4](#) shows that the proportion of fatal collisions on highways involving at least one commercial vehicle has not decreased, but has ranged between 21% and 33%.

Transportation crosses municipal, provincial and national borders. Therefore, national and international bodies also play a significant role in regulating commercial transport. For example, Transport Canada sets the rules for the manufacture and importation of new motor vehicles, as well as for the transportation of dangerous goods. There is a national committee that sets heavy truck weight and dimension limits for interprovincial operations in Canada. This forms the basis for B.C.'s Commercial Transport Regulations.

The Canadian Council of Motor Transport Administrators (CCMTA), which includes

**Exhibit 4:** Proportion of fatal collisions on provincial highways where at least one heavy commercial vehicle was involved, 2007 – 2016



Source: Office of the Auditor General of British Columbia, based on TRAN data. TRAN defines heavy commercial vehicles as having a licensed gross vehicle weight of 11,795 kilograms and over.

## ABOUT THE AUDIT

representatives from provincial, territorial and federal governments, coordinates matters related to motor vehicle transportation and oversees the NSC. The NSC for motor carriers was developed by the member jurisdictions of the CCMTA, based on a Memorandum of Understanding with the Council of Ministers responsible for Transportation and Highway Safety, together with the motor carrier industry. This national system aims to harmonize rules across the country to increase efficiency and commercial motor vehicle safety. There are 16 NSC standards that cover areas such as licensing, vehicle maintenance, hours of service and facility audits. Transport Canada provides federal funding to the provinces for administering the NSC.

### WHAT IS A CARRIER?

The term “carrier” refers to the owner of a commercial vehicle or “anyone who owns, leases or manages and decides how a commercial motor vehicle should be used.” A carrier may also be a driver—for example in the case of owner-operator businesses—but a driver is not necessarily a carrier if he or she is working for someone else who owns or determines how the vehicle is used.

A key international body is the Commercial Vehicle Safety Alliance (CVSA). CVSA is a non-profit association made up of representatives from all provinces, territories and states in Canada, the United States and Mexico. The CVSA has set the standards for roadside commercial motor vehicle inspections

throughout North America to promote consistency across all jurisdictions.

## AUDIT SCOPE

Our audit covered five main areas related to commercial vehicle safety. Three agencies, shown in parentheses, have primary responsibility for these areas:

- ◆ Commercial driver licensing (ICBC and PSSG)
- ◆ Education and awareness programs related to crash causation, including crashes involving commercial vehicles (ICBC and PSSG have primary responsibility, although TRAN also carries out certain campaigns and is involved with RoadSafetyBC initiatives)
- ◆ Oversight of commercial vehicle inspection (TRAN)
- ◆ Monitoring of commercial vehicle safety through the National Safety Code program and roadside inspection and enforcement (TRAN)
- ◆ Data collection and analysis on the effectiveness of commercial vehicle safety programs (TRAN, ICBC and PSSG)

Our audit did not look at road or vehicle design, workplace safety, police traffic enforcement, commercial vehicle insurance or passenger transportation regulations. While these are all relevant aspects of commercial vehicle safety, we defined our audit scope based on risk analysis and on what is within the Auditor General’s mandate. Local police and RCMP carry out the majority of

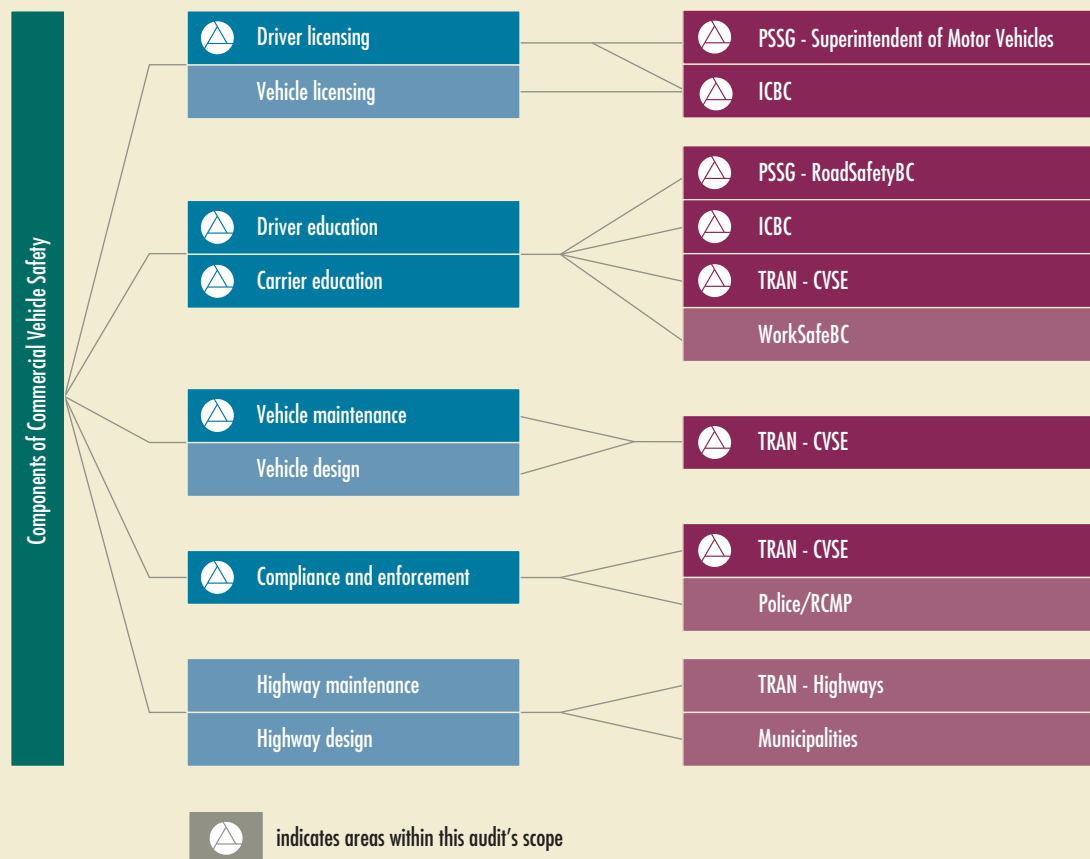
## ABOUT THE AUDIT

traffic enforcement activity for speeding, impairment and distracted driving, which are three of the top contributing factors for motor vehicle collisions, including for commercial vehicles. While we included data on police and RCMP traffic violation tickets in our data analysis, we did not directly audit their

activities. See Exhibit 5 for the components of commercial vehicle safety, agency responsibilities and our audit scope.

This was not the first time our office looked at the topic of truck safety. More than 20 years ago, we

**Exhibit 5:** Components of commercial vehicle safety and responsibilities



### Acronym legend

CVSE - Commercial Vehicle Safety and Enforcement  
 ICBC - Insurance Corporation of British Columbia

PSSG - Ministry of Public Safety and Solicitor General  
 TRAN - Ministry of Transportation and Infrastructure

Source: Office of the Auditor General of British Columbia

## ABOUT THE AUDIT

carried out a performance audit on truck safety that we reported in 1996/97. While our current audit had a broader scope than the previous audit, both audits looked at inspection and enforcement activities, such as the fixed and mobile weigh scales and the carrier safety interventions.

- ◆ consulting with a subject matter expert to adapt a model developed by the U.S. federal government to assess the impact of B.C.'s roadside inspection and enforcement activities in preventing crashes
- ◆ reviewing documents related to our five main scope areas

## AUDIT METHOD

Our work involved:

- ◆ carrying out site visits to commercial vehicle inspection stations in the province's three main transportation regions, supported by external subject matter experts in commercial vehicle safety. This included observing inspection and enforcement activities at roadside, at stations, in licensed inspection facilities and at carrier offices (Exhibit 6)
- ◆ conducting more than 60 interviews with government staff and key stakeholders at provincial and local levels across the province
- ◆ carrying out an Information Technology General Controls assessment of the three key data systems for commercial vehicle safety in TRAN: the Vehicle Inspection Program, the Roadside Inspection Program and the National Safety Code program
- ◆ analyzing data from these three systems to verify compliance and assess outcomes, as well as conducting statistically sampled file reviews for Vehicle Inspection Program audits and for National Safety Code program carrier safety certificates and audits

**Exhibit 6:** Audit team on field work visit to Terrace



Source: Office of the Auditor General of British Columbia

The report is dated November 30, 2018. This is the date the audit team finished obtaining the evidence used to determine the findings and conclusion of the report. We started planning the audit in early 2017. We carried out the main fieldwork from June to October 2017, with a significant change to our schedule as a result of the wildfire emergency in the interior region, because TRAN staff were involved in the emergency response.



## **ABOUT THE AUDIT**

### **AUDIT CRITERIA SUMMARY**

Our audit objective and criteria were based on extensive research and risk analysis. We used National Safety Code standards to inform many of our criteria. We also adapted criteria from audits on the same topic carried out in other Canadian and international jurisdictions. Our criteria followed our five lines of enquiry: licensing, education, vehicle maintenance, monitoring and enforcement, and information and analysis. See Appendix for the detailed criteria.

# AUDIT OBJECTIVE AND CONCLUSION

## AUDIT OBJECTIVE

The objective of this audit was to determine whether the Ministry of Transportation and Infrastructure, the Insurance Corporation of British Columbia and the Ministry of Public Safety and Solicitor General have effectively managed their respective programs to promote the safe operation of commercial vehicles on B.C. roads.

## AUDIT CONCLUSION

The Ministry of Transportation and Infrastructure, the Insurance Corporation of British Columbia and the Ministry of Public Safety and Solicitor General have taken steps to improve commercial vehicle safety, partly in response to our previous audit on truck safety in 1996, as well as in response to the work of the National Safety Code Task Force and the B.C. Road Safety Strategy. The ministries and ICBC need to do much more to effectively manage their respective programs to promote the safe operation of commercial vehicles on B.C. roads.

# KEY FINDINGS AND RECOMMENDATIONS

## LICENSING

### **Government doesn't know if commercial driver licensing standards are adequate**

Special licences are required to drive certain types of commercial vehicle because of the additional skills and knowledge needed to operate these vehicles safely. B.C. has four classes of commercial driver's licence:<sup>2</sup>

Class 1: Semi-trailers

Class 2: All buses

Class 3: Vehicles with more than two axles

Class 4: Buses up to a maximum seating capacity of 25 passengers, taxis and ambulances

We looked at B.C.'s commercial driver licensing standards to assess whether they met national standards and good practices. We also looked to see whether the Insurance Corporation of British Columbia (ICBC) and the Ministry of Public Safety and Solicitor General (PSSG) have assessed whether their licensing standards are adequate to ensure commercial drivers are prepared to drive safely.

### Licensing standards and good practices

B.C.'s commercial driver licensing standards are consistent with the relevant National Safety Code (NSC) standards. The NSC licensing standards

were developed by the Canadian Council of Motor Transportation Administrators (CCMTA) to ensure consistency across the country. There are six NSC standards related to commercial vehicle driver licensing. These cover the concept of a single driver's licence; driver testing; driver examiner training; a classified driver licensing system; self-certification standards; and medical standards for drivers.

The CCMTA updates the Medical Standards for Drivers (NSC 6) on an annual basis. However, it has not substantively updated the other licensing standards over the past two to three decades, so the standards have not incorporated more recent good practices.

In April 2016, the CCMTA board approved work on updating the standards on driver testing (NSC 2), driver examiner training (NSC 3), and the classified driver licensing system (NSC 4). This was based on the recommendation of jurisdictional members, who recognized a need to incorporate recent practices and language into these standards. This work has involved a review of the three standards, recommendations on areas for update and consultation with stakeholders. Completion of the project and updates to NSC 2, 3 and 4 are expected in the spring of 2019.

In the meantime, ICBC has used the American Association of Motor Vehicle Administrators standards as a guideline for its licensing practices. However, ICBC's commercial driver examination

<sup>2</sup> This is a high level summary of the licence classes. For detail, please see the ICBC website: <https://www.icbc.com/driver-licensing/types-licences/Pages/Licence-classes-and-types.aspx>

## KEY FINDINGS AND RECOMMENDATIONS

locations don't have the space to perform certain road test procedures according to certified commercial examiner standards.

ICBC is also bringing in a new quality assurance and control program to address inconsistency in the marking standards between examiners.

### Licensing safety and effectiveness

We found that neither ICBC nor PSSG has reviewed the effectiveness of B.C.'s driver licensing system for commercial vehicles in the past 20 years. However, both ICBC and PSSG have recently started initiatives that relate to commercial vehicle driver licensing and road safety.

In 2007, the Traffic Injury Research Foundation (TIRF) recommended:

an independent review and assessment/evaluation of [ICBC's] commercial vehicle driver licensing standards and testing procedures to determine the extent to which they are adequately preparing novices to drive safely, and addressing the problem of collisions involving new heavy truck drivers in an effective and efficient manner.

ICBC has recently begun to act on this recommendation. Previously, it had largely focused its attention on other key collision factors, such as speed, impairment and distraction, which are common to both commercial and non-commercial drivers.

In 2017, however, ICBC launched the Crash Reduction Research Initiative as part of its action

plan to address rate affordability. The initiative aims to develop effective driver licensing strategies to reduce crashes. While this research is not a comprehensive evaluation of the current commercial driver licensing system as recommended by the TIRF, ICBC has identified policy options for commercial driver licensing based on its findings.

The first phase of the Crash Reduction Research Initiative is complete and includes recommendations to improve the licensing program and reduce crash rates for commercial as well as non-commercial drivers. The next step will be to assess the business impact of these recommendations, which ICBC expects will take until spring 2019. The final phase will be to consult and gain approval from government to implement the proposals they expect will have the most impact. The timing for ICBC to implement these will depend on the scope of the changes and their prioritization.

Other jurisdictions have a variety of commercial driver licensing practices to improve road safety, such as mandatory entry-level training, commercial graduated licensing and periodic re-testing for commercial drivers. Ontario introduced mandatory entry-level training in 2017, and Saskatchewan has committed to doing the same in the wake of the Humboldt tragedy, while the United States has been phasing it in over three years to 2020.

Alberta announced that it's making driver training for new commercial drivers mandatory, and there are discussions in Canada's four western provinces on standardizing Class 1 driver training. While some of these licensing practices have not yet been evaluated,

## KEY FINDINGS AND RECOMMENDATIONS

there is evidence that mandatory entry-level training introduced in Europe in the mid-2000s led to a decrease in crash rates.

PSSG, for its part, has an initiative that addresses commercial driver licensing. The ministry is studying the possibility of tightening the requirements for getting Class 1 to 4 licences to take into account alcohol-related driving prohibitions. These are not currently covered in the conditions for getting a commercial driver's licence. This potential change would make it more difficult for those who had alcohol-related infractions on their driving record to get a Class 1 to 4 licence. Such a change would require a revision to the regulations.

### Why do driver licensing standards matter?

We heard from a wide range of sources (including commercial vehicle safety and enforcement officers and commercial drivers themselves) that drivers may obtain their commercial licence without being fully prepared to drive safely. Concerns include the fact that commercial drivers are able to get their licence without having to take any specialized training and without having to demonstrate they can drive in mountainous or winter conditions or that they can put tire chains on their trucks. This may create a higher risk of accidents when they drive through B.C.'s interior and northern regions. Those regions have the highest motor vehicle fatality rates in the province.

Another concern is that commercial drivers can test for their licence in a basic semi-trailer and then drive

a larger vehicle without additional preparation. While ICBC requires commercial vehicles to be loaded during the test, they do not require the load to be full. Again, this means that commercial drivers don't have to demonstrate they can drive safely in the same conditions they may face when they drive a truck professionally.

If driver licensing standards are not adequate to prepare drivers, the risk to public safety is significant. As noted above, collisions involving commercial vehicles are at higher risk of causing a fatality. Therefore, it is important for government to know whether its licensing standards set the groundwork for commercial drivers to be safe on the roads.

While there are some constraints on the province because its licensing standards need to be compatible with other jurisdictions, there is room for individual jurisdictions to set the bar higher if needed—as Ontario recently showed when it brought in mandatory entry-level training for new tractor-trailer drivers.

**RECOMMENDATION 1:** *We recommend that the Insurance Corporation of British Columbia continue its recent work to evaluate licensing strategies, including the effectiveness of B.C.'s commercial driver licensing standards, to improve road safety, and that it act upon the findings, in coordination with the Ministry of Public Safety and Solicitor General. This should include consideration of mandatory entry-level training.*

# KEY FINDINGS AND RECOMMENDATIONS

## EDUCATION AND AWARENESS PROGRAMS

### Education and awareness programs for all road users are limited

Driver behaviour is a key factor in vehicle collisions. Research has shown that in fatal collisions between passenger vehicles and trucks, the passenger vehicle driver is more often at fault than the truck driver. This suggests passenger vehicle drivers need to be educated about how to drive safely around trucks. At the same time, in non-fatal collisions between passenger vehicles and trucks, research suggests truck drivers are equally at fault. So truck drivers also need education on safe driving.

Therefore, we looked to see whether ICBC and PSSG had:

- ♦ assessed the need for education and awareness programs related to safe driving in and around large commercial vehicles
- ♦ implemented programs to address needs they had identified
- ♦ evaluated the effectiveness of any programs they implemented

### Needs assessment

We found the responsible agencies had assessed the need for education and awareness in relation to their own specific area of focus, but no agency had done a

comprehensive analysis of the need for education and awareness to address general safety risks related to commercial vehicles.

For example, ICBC focused on education and awareness programs related to the top causal factors in vehicle crashes, such as distracted driving, speeding or impaired driving, rather than a specific vehicle class, such as commercial vehicles. SafetyDriven—Trucking Safety Council of BC—a not-for-profit organization made up of companies in WorkSafeBC trucking and moving and storage classification units, and funded from a portion of WorkSafeBC premiums—focused on education and awareness related to workplace

### THE B.C. ROAD SAFETY STRATEGY

B.C. put forward its first Road Safety Strategy in 2013. The vision is that British Columbia will have the safest roads in North America and will work towards the ultimate goal of zero traffic fatalities and zero serious injuries. RoadSafetyBC, within PSSG, led the development of the strategy. Over 30 stakeholder groups provided input. The strategy is about how all road safety partners will work together to achieve the vision. The steering committee provides leadership and is made up of the Superintendent of Motor Vehicles as well as the assistant deputy ministers from ministries with responsibilities in road safety and representatives from crown agencies with road safety roles. RoadSafetyBC also coordinates five working committees that include governmental and non-governmental stakeholders.

## KEY FINDINGS AND RECOMMENDATIONS

safety risks for commercial drivers. And PSSG supported needs assessment work, such as a stakeholder survey, done by the Safe Vehicles Working Committee as part of the B.C. Road Safety Strategy.

The agencies have had limited ability to do a comprehensive analysis of the need for education and awareness beyond their own specific focus. A key obstacle to comprehensive needs assessment has been the challenge of getting the right information. Data challenges are covered more fully later in this report, but they include:

- ◆ the lack of consistent definitions of commercial vehicles between the different agencies
- ◆ the 2013 system transformation in ICBC that has made it difficult to look at long-term trends because data from before and after the transformation are not easily comparable
- ◆ delays in receiving data from other jurisdictions, and incompleteness of data received
- ◆ the difficulty of bringing together data from different sources to build a comprehensive analysis of needs and risks

### Program implementation

As a result of their needs assessments, agencies have implemented a number of education and awareness programs related to aspects of safe driving in and around commercial vehicles. However, B.C.'s key program to educate drivers on road safety related to commercial vehicles, the “Be Truck Aware” campaign, took seven years to implement after it was first proposed and was significantly scaled down from the original intention.

In 2010, ICBC proposed a campaign modelled on the Ticketing Aggressive Cars and Trucks (TACT) program developed in Washington State in 2005. After B.C. road safety stakeholders discussed the idea for a number of years, first within the Trucking Safety Council of British Columbia Task Force and later within the Safe Vehicles Working Committee of the B.C. Road Safety Strategy, it turned into a project plan, and in October 2017 a coalition implemented the “Be Truck Aware” campaign.

The stakeholders, who came together under the umbrella of the Safe Vehicles Working Committee of the Road Safety Strategy, included the BC Trucking Association, TRAN, ICBC, the Justice Institute of British Columbia, RoadSafetyBC, the RCMP, SafetyDriven—Trucking Safety Council of B.C., Teamsters Local 31 and WorkSafeBC.

The Washington State TACT program used enforcement, education, media and evaluation to reduce fatalities and injuries resulting from cutting off, tailgating and speeding around trucks. Public awareness activities were designed to increase motorists’ awareness of the need to leave enough room when merging in front of trucks.

By contrast, the B.C. “Be Truck Aware” campaign focused primarily on education. The B.C. campaign was also smaller scale, with a media budget of approximately \$30,000 compared with the Washington TACT media budget of \$194,000. The enforcement aspect of “Be Truck Aware” was left to the pre-existing Operation Safe Driver campaign, which took place at the same time. Operation Safe Driver is an annual continent-wide initiative where

## KEY FINDINGS AND RECOMMENDATIONS

police and commercial vehicle safety and enforcement officers issue warnings and/or tickets to drivers of both cars and trucks who demonstrate unsafe driving behaviours, such as failing to share the road.

Another example of a commercial vehicle education and awareness program was ICBC's taxi pilot project. The project aimed to assess the collision-reducing benefits of new vehicle technologies, and to educate taxi companies on these benefits. Other examples include educational resources on truck and workplace safety, such as videos, posters, podcasts, online courses, a mentorship program, a helpline etc., that were created by WorkSafeBC and SafetyDriven—Trucking Safety Council of BC. The Commercial Vehicle Safety and Enforcement branch developed online training on National Safety Code obligations in October 2014.

### Program evaluation

We found that ICBC and PSSG have sometimes evaluated their programs to determine if they're effective, but not always. A program evaluation is a systematic study that collects and analyzes data to assess how well a program is working and why. Evaluations allow decision-makers to assess a program's effectiveness, identify how to improve performance, and guide resource allocation.

The initial proposal for the "Be Truck Aware" campaign did include plans to evaluate the components of the program. This was intended to provide "proof of concept" to gain commitment from partners to continue the program beyond the initial year. The evaluation plan included pre- and post-campaign passenger vehicle driver surveys and a commercial driver survey.

However, as noted above, the coalition reduced the project scope to fit within the available resources, and therefore also cut back the research component. The coalition's research ended up including a pre-campaign survey but no post-campaign survey. Instead, the coalition focused on tracking outputs in the short term, such as earned social media volumes, number of campaign materials handed out, number of warnings or tickets issued, etc.

By contrast, the TACT campaign pilot project included a comparison of two intervention corridors with two non-intervention corridors at multiple time periods before, during and after the project. Importantly, the TACT evaluation looked at whether drivers effectively received the campaign's safety messages but also measured changes in actual driving behaviour. Statistical analysis of the intervention and comparison sites showed a highly significant positive effect, with a 23% reduction in violations for the intervention sites.

### Why were education and awareness programs limited?

We were told that a key reason the "Be Truck Aware" campaign was delayed and scaled down was that B.C. does not have a main agency with the authority and resources to provide education programs for road safety related to commercial vehicles.

RoadSafetyBC has brought key stakeholders together to coordinate their plans and programs through the Road Safety Strategy working committees. However, each of these stakeholders has its own focus and priorities. It can be difficult for agencies to get the resources required for joint initiatives that are not directly within the mandate of any one individual



## KEY FINDINGS AND RECOMMENDATIONS

agency. These initiatives tend to be carried out “off the side of the desk.”

Given the limited scope of the “Be Truck Aware” campaign, it would have been difficult to do a robust analysis of its effectiveness the way the TACT program did. It is hard to assess the impact of media messages alone on driver behaviour, without an enforcement component. Even assessing whether people recall the messages they receive in a media campaign requires a large enough media campaign for recall surveys to be statistically valid.

### Why do education and awareness programs matter?

Without adequate education, there’s a risk that road users are not prepared to operate safely in and around large commercial vehicles. Road users could make bad decisions that are life threatening. As noted above, one in five traffic fatalities in B.C. occurs in crashes involving a large commercial vehicle. In car-truck crashes, occupants of the passenger vehicle are at far greater risk of being killed than the driver of the truck.

In the “Be Truck Aware” campaign, important messages for passenger vehicle drivers included:

- ◆ leaving enough room for trucks to stop and to turn
- ◆ not merging too soon (Exhibit 7)
- ◆ being visible around trucks
- ◆ anticipating wide turns

For truck drivers, messages included:

- ◆ ensuring brakes and tires are in top condition to minimize stopping distances
- ◆ adjusting speed and driving for poor weather and road conditions
- ◆ staying alert by getting enough rest and avoiding distractions
- ◆ making sure loads are well balanced and secure

If they lack good information on needs, risks and program effectiveness, agencies may not be making the best use of limited resources. While there is strong evidence that the TACT program from Washington State is effective, this type of program needs to be



Source: [Government of British Columbia website](#)

## KEY FINDINGS AND RECOMMENDATIONS

adapted to local conditions and then tested to see whether it works. As the external environment changes over time, such campaigns also need to be regularly evaluated and updated to address emerging needs and risks.

**RECOMMENDATION 2:** *We recommend that government establish clear responsibility for the promotion of commercial vehicle road safety education and awareness.*

**RECOMMENDATION 3:** *We recommend that ICBC and the Ministry of Public Safety and Solicitor General ensure program evaluation is a key component of the design and implementation of future education and awareness campaigns related to commercial vehicles.*

## INSPECTION AND ENFORCEMENT

### Regulatory and administrative policy framework doesn't fully support commercial vehicle safety

The *Motor Vehicle Act* and its associated regulations govern key aspects of commercial vehicle safety. During our audit, we found three areas where the regulations or administrative policy framework have limited the ability of the Ministry of Transportation and Infrastructure (TRAN) to ensure the safe operation of commercial vehicles. These areas were:

- ♦ standards for the Vehicle Inspection Program
- ♦ addressing certain safety risks on the road
- ♦ commercial vehicle safety certificates

### Compliance with Vehicle Inspection Program standards

Operators of certain types of commercial vehicle are required to have their vehicles inspected at a licensed facility annually or semi-annually to ensure they meet provincial safety standards. This applies to taxis, buses, trucks or truck tractors weighing over 8,200 kilograms, and commercial trailers or semi-trailers, among others. In the past, the ministry had its own inspectors do these vehicle inspections, but government privatized the inspection system in 1983.

In the current system, if a private company wants to do vehicle safety inspections, it has to apply to TRAN for a facility licence. The ministry's area vehicle inspectors,

## KEY FINDINGS AND RECOMMENDATIONS

located around the province, review applications for licences and audit facilities before they recommend licence approval or renewal to the ministry. The ministry's Vehicle Inspection Program has the final decision on licensing and is responsible for overseeing compliance with the regulations.

The ministry issues licences for two types of facility: designated inspection facilities (DIFs) and preventative maintenance facilities (PMFs). The DIF licence is for facilities to inspect vehicles that do not belong to them. The PMF licence is for facilities to inspect their own vehicles, usually because they have a large fleet and therefore have their own mechanics and equipment. In B.C. in 2016, there were approximately 1,500 DIFs and 350 PMFs. There are significant differences in the regulations that apply to the two types of facility. In this section, we will focus on the DIFs. We address the PMFs later in this report.

To get a DIF licence to inspect commercial vehicles, a company must have:

- ◆ the appropriate business licence and insurance
- ◆ adequate space and tools to perform inspections
- ◆ current copies of the Vehicle Inspection Manual and Motor Vehicle Act Regulations that their inspectors must follow

A facility must also have staff with authorized inspector licences to conduct inspections and a B.C. electronic identification (BCeID) account. New applicants must have completed the DIF operator training course. When an authorized inspector completes an inspection and passes the vehicle, he or

she will provide a decal for the vehicle so the vehicle owner can demonstrate it has been inspected when it is being driven.

If a ministry officer inspects a vehicle on the road and finds that it fails one or more of the inspection criteria, the officer will check when the vehicle was last inspected by a licensed facility. If a vehicle got its decal recently but has a defect the officer thinks is not likely to have occurred in the window of time between the facility inspection and the roadside inspection, this raises concerns about whether the facility has done adequate inspections.

In deciding what to do in such a case, TRAN's Commercial Vehicle Safety and Enforcement (CVSE) branch staff consider factors such as tenure of the facility, previous inspection results and feedback from industry. However, CVSE does not have a quantifiable process to follow with a facility it suspects has not met the required inspection standards. The regulations state that a violation by the facility operator is reason to cancel or suspend the facility licence. But to prove the facility did not meet the standards, an area vehicle inspector has to gather enough evidence to prove the vehicle had the defect when it left the facility and did not develop the defect afterwards. The facility operator has the right to show cause why their licence should not be cancelled. Program staff reported that this is a challenging and resource-intensive process.

In addition, there are no standards for a progressive discipline system. Therefore, there are no quantifiable criteria the ministry can use to decide whether to issue violation tickets for infractions or to suspend or cancel a facility licence. By contrast, the Motor Vehicle Act

## KEY FINDINGS AND RECOMMENDATIONS

Regulations enable the ministry to track carrier safety records and carry out interventions when the carrier's safety points cross a set threshold. Area vehicle inspectors reported that some facilities don't appear to see the cost of a violation ticket as a deterrent when that cost is compared to the profits they can make from inspections.

The ministry has only pursued one cancellation and two suspensions since December 2015. Ministry staff advised that they were aware of a number of other facilities where compliance with inspection standards is a problem, although they did not identify the specific facilities. The area vehicle inspectors found a number of deficiencies and violations with the three facilities they recommended for cancellation or suspension, including, for example:

- ♦ vehicles with recently issued inspection decals having significant defects that could not be justified by normal wear and tear
- ♦ inspection reports being signed by an authorized inspector who was on medical leave
- ♦ a vehicle being given a decal when it had never been at the facility's premises
- ♦ a facility operator conducting inspections on vehicles he was not authorized to inspect, and submitting inspection reports using another inspector's credentials

The ministry informed us it has been working for a number of years to change the regulations and introduce a more clearly defined system for disciplining non-compliant facilities. It will still take many years to go through the full process of revising

the regulations. In the meantime, the ministry can explore alternative ways to implement a clear and progressive discipline system for non-compliant facilities.

We note a coroner's inquest also recommended this issue be addressed in the mid-1990s after a runaway tractor-trailer caused two deaths, but it has not yet been addressed: "develop meaningful performance standards for certified CVIP [Commercial Vehicle Inspection Program] facilities to either comply or lose the privilege of conducting CVIP inspection on heavy trucks/trailers."

### Safety risks on the road

Commercial vehicle safety and enforcement officers rely on the standards in the legislation and regulations to judge whether a vehicle is safe to operate and what action they can take to address unsafe vehicles. We heard from commercial vehicle safety and enforcement staff at all levels across the province that there are gaps and concerns with the Motor Vehicle Act Regulations. This can hamper officers' ability to address safety risks they encounter on the road, or can make their work more cumbersome.

Two key areas of concern identified by CVSE staff and by our subject matter experts were the lack of regulations on automatic slack adjusters and anti-lock brake systems, which have been mandated on Canadian commercial vehicles since 1996 and 2000, respectively; and vague wording on the requirement for brake checks.

## KEY FINDINGS AND RECOMMENDATIONS

Other concerns included lack of clarity related to certain regulations on brakes and lighting equipment. In addition, there is concern that the regulations are out of date. For example, much of the section on brakes was most recently revised in the early and mid-1990s, but some parts date back to the 1950s, and the brake system diagram is from 1980. Given the pace of change in vehicle technology, this could lead to problems.

The CVSE executive advised that officers can largely address these concerns and risks through inspection criteria. However, officers would not be able to use enforcement tools, such as issuing violation tickets, and this may not be the most efficient or effective way of addressing these risks.

### Commercial vehicle safety certificates

The Motor Vehicle Act Regulations require commercial vehicle carriers (owners) to have a valid NSC safety certificate from the Director of Commercial Vehicle Safety before operating or allowing a driver to operate a vehicle. To get a safety certificate, a carrier has to apply, pay a fee and meet various criteria. CVSE is responsible for reviewing applications, granting certificates and overseeing carrier compliance. The Director of Commercial Vehicle Safety can suspend or cancel a carrier's safety certificate if he or she thinks it necessary for road safety reasons.

Safety certificates do not expire under the regulations, which led to a situation where carriers who had their safety certificate cancelled for non-compliance could move their operations to an unused safety certificate that may have been sitting dormant. Between 2011 and 2015, the ministry cancelled 57,000 safety certificates

it found were “inactive”—i.e., had not had a vehicle registered under the certificate for 12 or more months.

That was a significant effort, requiring the ministry to contact all carriers whose certificates were to be cancelled and deal with individual appeals. TRAN carried out this mass cancellation in order to close the loophole by which carriers who had kept a “spare” certificate under another name could continue to operate if their own certificate were cancelled.

However, in 2015 the ministry's web system changed, and with the new system it cannot easily identify and cancel inactive certificates on a large scale. Ministry staff have had to manually investigate and cancel certificates since that time, which has been time consuming and slow. As a result, there were over 7,000 inactive certificates as of January 2018. This leaves the possibility open for non-compliant carriers to shift operations.

To address this issue, the ministry brought in a system that allows it to track vehicles from carriers with cancelled safety certificates, which helps to detect this type of move. With this system, ICBC will not register and insure the vehicle to a new owner without confirmation from CVSE. However, it still takes time and resources for staff to follow up and address the issue.

Other jurisdictions have legislation that includes an expiry date for certificates, which deters carriers from applying for a certificate and leaving it dormant. CVSE would like to amend the regulations to include expiry dates on NSC certificates. An alternative way to address the problem would be to allow the ministry to automatically cancel certificates that haven't had a vehicle registered under them for a certain length of time.

## KEY FINDINGS AND RECOMMENDATIONS

Another concern with the safety certificates is that the knowledge test to assess whether carriers understand their safety obligations is not in place uniformly across the province. The ministry brought in the test in 2009 and saw a significant decrease in the approval rate for safety certificates. It hasn't yet assessed whether the test is effective at improving carriers' safety behaviour, and therefore it hasn't extended the test across the province.

When we reviewed a statistical sample of applications, we found a number of applicants misunderstood the safety rules but were still qualified for a certificate. We note that when B.C. reviewed the application process in several other Canadian jurisdictions, it found its own process was the most stringent. However, there is still room for improvement here to ensure carriers understand their safety obligations.

### Why do these problems with the regulatory and policy framework matter?

The potential impact of these problems with the regulatory and policy framework is that commercial vehicles on the road might not be as safe as they could be. If the ministry doesn't effectively assess whether licensed facilities are doing inspections according to standards, and doesn't suspend or cancel licences for significant non-compliance, there could be vehicles on the roads that do not meet minimum mechanical safety standards.

If the ministry's officers cannot enforce certain safety concerns because of gaps in regulations, operators

may not be deterred from driving unsafe vehicles. If non-compliant carriers can shift their operations to an inactive certificate, these carriers could continue to have vehicles on the road without meeting their safety obligations until the ministry can go through the process to assess the evidence and suspend or cancel the certificate if appropriate. The ministry advised us that this process is a high priority and is carried out within a very short window of time.

Finally, if the ministry's safety certificate application process doesn't fully assess whether all carriers know their safety obligations, some carriers may not be prepared to operate safely and may thereby put the public at risk.

**RECOMMENDATION 4:** *We recommend that the Ministry of Transportation and Infrastructure consider reviewing and modernizing the regulations and administrative policy to ensure Commercial Vehicle Safety and Enforcement staff can efficiently and effectively:*

- ◆ *assess whether designated inspection facilities have done inspections in compliance with program expectations and remove licences from non-compliant facilities where appropriate*
- ◆ *address key safety risks not addressed under current policy*
- ◆ *ensure only carriers that have demonstrated the knowledge and ability to operate safely are granted a National Safety Code certificate*

## KEY FINDINGS AND RECOMMENDATIONS

### **TRAN has challenges ensuring a consistent approach to commercial vehicle safety across B.C.**

The CVSE branch has a decentralized governance model. The Director of Commercial Vehicle Safety and the managers of the various safety programs set policy and oversee operations. The CVSE officers in the field have an indirect reporting relationship to the CVSE director and managers. They report directly either to local managers who report to a district transportation manager, or to a regional director. There are 11 ministry districts.

We noted three key areas where the current governance model contributed to program challenges and inconsistency:

- ◆ enforcement of standards with preventative maintenance facilities
- ◆ consistency in roadside inspection and enforcement
- ◆ consistency in carrier safety interventions

Consistency in CVSE practice is important to ensure predictable and fair treatment for industry, as well as to deter non-compliance, thereby increasing public safety.

### **Enforcement of minimum standards with preventative maintenance facilities**

The standards for preventative maintenance facilities (PMFs) are clearer than those for the designated inspection facilities (DIFs), discussed above. The PMF

licence allows a company to inspect its own vehicles, which means it is exempt from certain conditions of the Motor Vehicle Act Regulations. To qualify for a PMF licence, a carrier should have a fleet of 15 or more power units registered in B.C., and the fleet should have been under a B.C. National Safety Code certificate for at least 12 months. The carrier also has to have a vehicle maintenance plan approved by CVSE.

The key measure for compliance is whether the carrier's fleet has passed roadside inspections to meet the program's minimum standards. The area vehicle inspectors assess licence applications and carry out audits to ensure the facility has met the program's standards.

We reviewed a statistical sample of PMFs and DIFs to assess whether the program had granted initial licences according to policy, and also whether it had renewed licences according to policy. For the three initial PMF licences in the sample, we found the ministry inspectors had not assessed any of the facilities' track records of maintenance practices prior to licensing.

We also found the ministry did not consistently follow its policy and guidelines setting out when to discipline a PMF that failed to meet program expectations. Ministry guidelines direct inspectors to inspect 10% of the fleet to Commercial Vehicle Safety Alliance standards, either at roadside or in the facility. According to ministry standards, the PMF should have no more than 5% of the inspected vehicles out-of-service and no more than 15% with violations present.

We found that 5 of 13 PMFs audited had not met the minimum standards, yet the ministry had not

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disciplined them or cancelled their licences. There was no evidence on file the inspector had taken action to ensure the facility addressed the deficiency.

We also reviewed historical files for a facility that did not meet the minimum standards consistently for a period of 10 years. This was a company contracted by the ministry to do maintenance on the provincial highways in one of the districts. We noted more generally that there appeared to be challenges for the ministry to address non-compliance with PMFs that held contracts for road maintenance. We were told these challenges were a result of the ministry's role in ensuring road maintenance activities take place. The ministry has introduced wording in new maintenance contracts that aims to address this concern.

### Consistency in roadside inspection and enforcement

The trucking industry has identified inconsistent enforcement as a key area of concern, and has requested the ministry ensure enforcement is predictable and fair across the industry. The CVSE branch developed a Standards and Best Practices Manual in 2009 to provide direction to staff and improve consistency, and it has updated that manual to include industry relationship building. It also implemented an initiative to improve the quality assurance process for issuing violation tickets to ensure the tickets are processed on time and are not rejected for errors.

We observed positive relationships between enforcement staff and industry throughout our fieldwork in all three of the province's transportation

regions. We were particularly impressed to see multiple occasions where truck drivers shook hands with the officer who had just given them a ticket for a violation.

### CVSA INSPECTIONS

The Commercial Vehicle Safety Alliance aims to achieve uniformity, compatibility and reciprocity of commercial motor vehicle inspections and enforcement. Its inspection procedures and criteria are known as the North American Standard Inspection Program.

There are eight levels of inspection, ranging from the most comprehensive, Level 1, to inspections with a more specific area of focus, such as Level 6 for radioactive materials. The most common inspections done in B.C. are Level 1 (complete vehicle and driver inspection), Level 2 (vehicle only), and Level 3 (driver only). Only certified officers can carry out CVSA inspections. B.C. currently has approximately 180 CVSA-certified officers.

Each inspection level has criteria that set out when a component passes or fails. For the most critical violations, a failure requires the vehicle or driver to be placed out-of-service until the defect is fixed. If a vehicle passes a Level 1 inspection, it qualifies for a CVSA decal. The decal is colour coded and has an indicator to show in which month and year the inspection was performed.



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We also note that the CVSE branch achieved a higher rating for customer satisfaction than the ministry's average rating for two of the last three years for which survey data are available.

However, we observed there is still considerable inconsistency in inspection and enforcement between districts and regions. For example, we found that pass and out-of-service rates for Commercial Vehicle Safety Alliance (CVSA) inspections vary widely between officers and between inspection stations. Between officers, pass rates ranged from 0% to 58%, while out-of-service rates ranged from 5% to 69%. Inspection station pass rates ranged from 1% to 37%, and out-of-service rates ranged from 17% to 44%.

We also found notable variation between districts in their approaches to inspection and enforcement. In some districts, officers are more likely to write violation tickets, while in others they write more Notice and Orders. A violation ticket carries a financial penalty and applies points against a carrier's safety profile. A Notice and Order requires a carrier to fix a particular defect within a specified time frame but does not affect a carrier's safety profile.

For example, the number of violation tickets written per officer varied from 25 to 153 across the ministry's districts in fiscal 2016–17, and the range for Notice and Orders was similar. With CVSA inspections, districts vary widely in the proportion of inspections of each type their staff carry out. For example, the proportion of CVSA Level 1 inspections in the districts was between 22% and 65%; for Level 2 it was between 2% and 30%; and for Level 3 it was between 5% and 33%.

There are differences between the districts that can explain some variation in approach to inspection and enforcement, such as the type and level of commercial vehicle traffic flows, as well as the number and type of carriers and inspection facilities, and variation in inspection campaigns. In terms of the type and level of commercial vehicle traffic flows, we observed that:

- ◆ some stations see more long-haul traffic (which means that hours of service are a key safety focus)
- ◆ some see more cross-border travel (which means insurance and permits are a focus)
- ◆ some have a high proportion of logging trucks (which means vehicle condition, load security and load weights and dimensions are higher risks)

However, some of the variation relates to differences in inspection practices and other factors that are not safety related. The challenge is to strike a balance between allowing district staff to exercise judgment to meet local needs while ensuring standards are being applied uniformly and fairly. This may require more oversight and control from central CVSE authorities than is currently in place with the district governance model.

### Consistency in carrier safety interventions

The ministry monitors carrier safety performance through a carrier profile. Within the ministry, staff in the National Safety Code (NSC) program are responsible for setting policy and overseeing

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carrier profiles. In the field, carrier safety inspectors (CSI) carry out interventions with carriers such as compliance reviews and audits.

When a carrier has behaved unsafely (whether through contraventions, at-fault crashes or out-of-service inspections), this results in points on the carrier's safety profile. The ministry has set thresholds for points on the carrier profiles, based on the size of the carrier's fleet and the median points levels across the province for each size grouping of carriers.

If a carrier's total points exceed the threshold, it triggers an intervention by the ministry to bring the carrier back into compliance. Alternatively, an intervention can be requested by CVSE officers if they observe unsafe and non-compliant carrier actions before that carrier's points have gone over the threshold.

The first intervention triggered by points exceeding the threshold is a warning letter to notify the carrier there is a safety concern. This is followed by a safety plan self-assessment if the points go over the next threshold. Interventions escalate to a compliance review if the unsafe behaviour continues. Compliance reviews are intended to be educational. A CSI meets with the carrier to review records and safety plans, and develops an action plan to help the carrier comply with rules and requirements.

Audits are the last level of intervention before a safety certificate may be cancelled. During an audit, the CSI reviews the carrier's records and assigns points for non-compliance with NSC regulations. Audits cover the carrier's safety records in relation to driver

qualifications and records, hours of service, vehicle maintenance and safety practices. The inspector provides a report at the end of the audit, showing the audit result, which can be either excellent, satisfactory or unsatisfactory. A compliance score of 70% is required to pass the audit.

If a carrier has an unsatisfactory audit, the report includes an action plan the carrier must sign, with a deadline by which to implement it. The ministry will then conduct a follow-up audit to assess whether the carrier has improved its safety practices.

The ministry has expectations for the time frame within which it would like to have safety interventions carried out, although there are no formal, documented targets. The ministry's expectations for how quickly its inspectors should do safety interventions differ depending on the type of intervention.

- ◆ **Compliance reviews for new carriers:** The ministry aims for its CSIs to do a compliance review with all new carriers within 12 to 18 months of issuing a certificate.
- ◆ **Audits for non-compliant carriers:** The expected time frame is for audits to be done within 3 to 6 months of being triggered by carrier non-compliance.
- ◆ **Follow-up audits for non-compliant carriers:** If a carrier has an unsatisfactory audit, the ministry aims to do a follow-up audit within 8 to 12 months.

We found the ministry has largely been able to meet its expectations for timely follow-up audits, with just 14%

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not scheduled or started eight or more months after they were scheduled to be started. However, we found 46% of the audits for non-compliant carriers triggered or requested in the first half of 2016 had not yet been started 12 to 18 months later.

In the South Coast region, 75% of the audits for non-compliant carriers triggered or requested in the first half of 2016 had not been started 12 to 18 months later. This means that carriers with unsafe behaviour on the road have been left without intervention for long periods of time, longer than the ministry's expected time frame. The ministry advised that it has a manual process that aims to prioritize carrier interventions in the South Coast region, although we were unable to verify this taking place during our audit period due to CVSE staffing shortages.

In addition to finding time frames for audit completion in parts of the province that were different than policy expectations, we found that some CSIs had variations in their approach to carrier audits. We also found audits in our statistical sample where CSIs had not followed the audit scoring guidelines, resulting in an audit score higher than it should have been.

### Why are practices inconsistent between districts?

One reason we identified for inconsistency between districts is the district-based governance model. The current governance model was introduced to integrate CVSE staff with TRAN highway operations staff in the districts and regions to help them work together to ensure safe and efficient transportation.

However, the model also brings challenges. District highway operations' priorities may be different from CVSE priorities. The model can also lead to inconsistency in how districts interpret and enforce the CVSE mandate. The indirect reporting lines to CVSE headquarters make it more difficult for central management to ensure officers are following its policies.

As noted above, CVSE officers are hired and supervised within the districts. Districts determine how to allocate their resources and organize their staff, and these decisions may be made by district transportation management, whose main focus is highway operations.

District-based training also contributes to inconsistency. While all CVSE officers receive centralized training, they also rely on district-based on-the-job training. This is particularly the case for the CSIs and area vehicle inspectors (AVIs), who do carrier and facility audits without central training. In areas where there is only one AVI or CSI, on-the-job training is more challenging and requires officers to travel to other districts.

The training manual for AVIs is out of date. There has not been a training manual for CSIs, although the ministry is in the process of developing one. Central ministry CVSE staff aim to review CSI audits but were not able to do so consistently during the period of our audit because of limited staffing resources.

We reported that the ministry was "actively considering" using third parties to conduct carrier safety audits to address the issue of insufficient

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audit interventions back in the mid-1990s, when we published our first OAG audit on trucking safety. The concern at the time was that with fewer than 15 CSIs and over 26,000 carriers, the ministry could not audit all carriers on a random basis within a reasonable time frame but would have to focus only on the carriers with the worst safety records.

However, if non-compliant carriers are able to avoid inspection, the worst carriers may not even make it onto the list for triggered audits or compliance reviews. The ability to do random compliance reviews and audits, and to cover all carriers on a regular basis, would allow the ministry to develop an accurate picture of the industry's compliance overall. That, in turn, would support its ability to assess the efficiency and effectiveness of its safety interventions and improve safety compliance.

The concern is still valid today, with a similar number of CSIs as in the 1990s but now over 32,000 carriers. CVSE put forward the option of third party audits again in recent years, but the ministry has not implemented it.

### Why does consistency matter?

While the ministry expects officers to use professional judgment when deciding whether a violation ticket is warranted, the high level of variation between officers and inspection stations when it comes to issuing violation tickets suggests that officers are applying the regulations inconsistently. If tickets are not always issued when the situation warrants, it reduces the deterrent effect of enforcement and increases the risk to public safety. Tickets are also an important factor in the carrier's safety profile, which determines whether

the carrier will be subject to a safety intervention such as a compliance review or audit.

Another impact of the variation in district approaches to inspection and enforcement is that it could lead to frustration for truck drivers and the industry if they feel they are not being treated fairly. It is important for CVSE officers to have a positive professional relationship with the transportation industry, to encourage voluntary compliance with regulations.

If safety interventions are not timely, non-compliant carriers can continue to operate on B.C.'s roads, which puts the rest of the road-user population at risk. For example, one carrier in our sample had a compliance review done in mid-2015. The CSI found the carrier had a very low level of compliance and poor understanding of the safety requirements. The carrier created an action plan and the CSI followed up several times but saw no improvement. They carried out an audit six months later.

The audit found significant non-compliance, including poor vehicle maintenance, drivers being allowed to drive without the right licence, and no records to track whether drivers were complying with the rules about how long they can drive and when they must rest. The action plan stated a follow-up audit would be completed within 12 months.

The follow-up audit had still not been scheduled as of January 2018, almost two years after the original unsatisfactory audit. This carrier had a large fleet of vehicles, and its drivers had had more than 20 traffic violations in the last 12 months. The carrier had also had numerous vehicles placed out-of-service for a significant defect, and inspections that found

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violations with vehicle maintenance related to a wide range of defects, such as lighting, brakes, suspension, tires, exhaust and load security.

**RECOMMENDATION 5:** *We recommend that the Ministry of Transportation and Infrastructure review the structure of Commercial Vehicle Safety and Enforcement to ensure greater consistency in inspection and enforcement practices.*

**RECOMMENDATION 6:** *We recommend that the Ministry of Transportation and Infrastructure ensure timely and consistent interventions with carriers.*

### **CVSE officers have a demanding job, and better supports would improve their effectiveness**

Commercial vehicle safety and enforcement officers are extensively trained to work in a difficult job and are highly skilled, but they could be more effective with better infrastructure, information, equipment and training.

Inspecting commercial vehicles is physically and personally challenging. Officers work outdoors in all types of conditions, from rain and snow to stifling heat, underneath trucks that can be dirty and dangerous. When they go on mobile duty, they have to manoeuvre heavy portable scales in tight roadside situations.

Officers also have to deal with challenging personal interactions with truck drivers and commercial vehicle carriers. They have to defuse tense situations and face the frustration of commercial vehicle operators whose trip is delayed by an inspection or who have been told they need to fix their vehicle or take a rest before they can continue their journey. Commercial vehicle safety and enforcement officers also assist with police accident investigations and highway emergencies, and sometimes find themselves inadvertently involved in the discovery of drug crimes or other criminal activity.

We looked to see whether officers had the infrastructure, information, equipment and training they needed to do their work effectively, and whether the ministry has assurance that its inspection coverage is adequate to achieve its safety goals.

### Infrastructure

Infrastructure can affect officers' ability to carry out inspections in various ways. For mobile inspection and enforcement, it is important for officers to have safe places to pull commercial vehicles over at the side of the road. We learned of various locations in the province where highway infrastructure has not been designed to accommodate commercial vehicle inspection and enforcement activity, which can make it difficult for officers to address safety needs. In other locations, CVSE officers reported that, in response to their requests, the ministry has built pullouts to improve their ability to do enforcement at key locations.

For fixed inspection stations, the location and layout of the sites does not always allow safe movement

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through and around the station, nor does it provide room for vehicles to be pulled over for inspection. For example, the Terrace inspection station is known to be a problematic location for safety reasons. The route that trucks must use to access the scale creates accident risk, and there is limited space for trucks to park in order to be inspected. We were told that plans are underway to address this issue. Many other stations have to close down and allow trucks to bypass if the traffic is busy, because keeping the station open creates a backlog onto the main road.

Infrastructure also makes a difference to how well officers can do their work in challenging weather conditions. When it is snowy, cold, rainy or very hot and/or smoky, it can become difficult to carry out

thorough commercial vehicle inspections because officers may not be able to get under the vehicles or see the vehicle components. B.C. has just one covered inspection shed, in the southern interior at Golden (Exhibit 8). Thus, weather can affect officers' ability to carry out their work effectively.

### Information

Since we last audited, the ministry has improved its information systems and technology to allow for more targeted inspections and increased efficiency. However, there remain limitations as a result of low industry participation in voluntary pre-screening programs, partial coverage of new technology, and systems that are not always reliable. There are opportunities to adopt additional information technology to improve the efficiency and effectiveness of inspections.

Officers select which vehicles to pull over for in-depth inspection based on various factors, using their judgment and experience as well as any data available to them through station technology. CVSE branch policy is to focus inspections on carriers, vehicles or drivers that pose the highest safety risk, unless they are running a specific campaign that selects vehicles randomly to assess overall compliance.

An officer looks for visible problems with vehicles as they go over the weigh scales, and uses their experience to detect less visible problems. For example, officers can see if a load is insecure as a vehicle travels past, or their experience and judgment can help them anticipate which companies or industry sectors might have potential hours-of-service

**Exhibit 8:** Inspection shed at Golden inspection station



Source: Office of the Auditor General of British Columbia

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violations. They also act on tips from the public, other government workers or other law enforcement officers to follow up on known violations.

Over the years, government has brought in new technology to help officers do more pre-screening so they can focus on higher-risk carriers, vehicles or drivers. For example, carriers who travel in B.C. can opt to participate in the Weigh2Go system, which was introduced in 2009. They get a transponder for their vehicles, which communicates with stations equipped with Weigh-in-Motion technology as the vehicle approaches.

The system identifies the vehicle and checks for height, weight and safety credentials while the vehicle is still travelling at highway speeds. If the vehicle is in compliance with the regulations, the driver gets a green light on the transponder and can bypass without stopping at the station. Vehicles not in compliance, or selected for a random check, are given a red light and must report to the station.

Currently, 10 of the 23 inspection stations in B.C. are equipped with Weigh2Go technology. Participation in the program has increased in the last four years, and there are now around 6,000 vehicles, belonging to just under 400 carriers.

In addition to the safety screening benefits for the ministry, the technology benefits industry by allowing carriers to save time and fuel by not having to stop at inspection stations. The ministry estimates over \$33 million in savings to carriers from 2009 to November 2018, and over 2.1 million kilograms of greenhouse gas emissions avoided. However, the limitations on this system are that a minority of vehicles are currently participating, and the technology only exists at certain stations.

Inspection stations are also equipped with computer systems that show information about the vehicles coming through. When officers type in the licence plate number, they can see when the vehicle was last inspected, any permits it may have, whether its

**Exhibit 9:** Truck missing wheel while driving on provincial highway



Source: Office of the Auditor General, taken October 2017, Highway 5 south of Kamloops

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insurance and registration information is up to date, and any information about previous inspections, violations or Notice and Orders.

While this system is very useful, a key limitation is speed of information flow. Sometimes the information is not available until after the vehicle has passed by. When the system is down for technical reasons, which happens on a regular basis, it makes inspection work more difficult.

Other jurisdictions have brought in new technologies, such as remote sensing equipment for faulty brakes and wheels, to improve their ability to screen and target high-risk vehicles. During our fieldwork, we observed a vehicle that had successfully passed an inspection station, which an officer later stopped on the road because it was missing a wheel assembly and posed a significant safety risk (see [Exhibit 9](#)). The ministry could consider assessing new technologies that could improve its efficiency and effectiveness at identifying vehicles with safety defects.

### Equipment

We found that officers perceived communication systems equipment as an obstacle to their ability to carry out inspections as and when they considered necessary. Some officers advised us that they did not have confidence that the communication system would allow them to cover all areas of their districts or carry out inspections when they were alone.

There is no centralized dispatch for CVSE. Instead, each area has its own system for officers to call in when they stop a commercial vehicle while on mobile patrol. Some have contracted with a private company that

can raise an alert if the officer is not back in contact when expected.

One region has officers call in to a designated inspection station, which has a staff member within reach of the telephone at all times to keep track of officers on mobile patrol. This limits the station staff's ability to do inspections, because if an officer is alone at the station or the second officer is busy, the first officer can't go outside the building to inspect a vehicle. The ministry could look at whether this is the most efficient use of resources, as these highly trained officers are not able to exercise their commercial vehicle inspection skills fully when they are tied to monitoring the telephone.

In more remote locations of the province, officers were concerned they had limited ability to connect via radio or cell phone in some of their patrol areas. CVSE's working-alone policy requires officers to connect if they pull over a vehicle to intervene. Therefore, officers felt constrained in their ability to do their work adequately when they couldn't pull over a vehicle in a location without communication service.

While CVSE's radio system should allow all officers to connect, in practice some officers advised us that they did not have confidence in the system or their ability to use it as needed. By contrast, the Ministry of Forests, Lands, Natural Resource Operations and Rural Development is moving to augment its FM radio system, centralizing its approach to employees working alone or in isolation, and looking at alternative communication options, such as SafetyLine or InReach, along with some GPS tracking of equipment.



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Some officers were also concerned they didn't have access to police information that would allow them to find out whether a driver they stopped had a record of violent interactions. While they should follow the same safety practices whether or not a driver has a record of violence, it could be helpful for them to have more information about the situation. Our subject matter experts informed us that officers in Ontario and Saskatchewan have access to police information via the radio communication system.

### Training

CVSE provides extensive training for its officers. It takes 18 to 24 months of training to become a commercial vehicle safety and enforcement officer. Training covers a wide range of technical material and practical skills. Officers must also gain certification to carry out CVSA inspections and fulfill requirements every year to maintain the certification.

CVSE organizes core courses centrally and expects districts to deliver on-the-job training for new recruits. Recruits are also required to get the Investigation and Enforcement Skills certificate from the Justice Institute.

While we found the training system functions well overall, it can be challenging for CVSE to ensure officers receive training in a timely way to allow them to do their job effectively as soon as possible. This is related to the district-based hiring model, as CVSE doesn't have the final decision over when officers are hired in the districts. Another difficulty for CVSE related to the training schedule is that it relies on internal trainers who are volunteers and have to be released by their district management.

It can be hard to find an appropriate location for training with access to commercial vehicles, but the ministry is in the process of building a dedicated training facility for CVSE that should address this. We also noted above the challenges arising from district-level on-the-job training, which can result in inconsistent district practices being passed on between officers.

### Inspection coverage

Inspection stations no longer operate 24 hours a day, seven days a week, as some did in the past, although the trucking industry operates throughout the day, night and week. In order to deter trucks from being non-compliant and avoiding inspection, the ministry's approach is to open the stations on a random schedule so that trucks cannot predict when they might be inspected.

In addition, officers do mobile patrols in areas or on routes where trucks may try to bypass the inspection stations. District managers and officers use their local knowledge to plan their inspection schedules, and one manager we met with also used ministry traffic counter data to plan the schedule. We heard of various ways officers worked to prevent deliberate non-compliance, including coming out to stations in the middle of the night or collaborating with border security officers to detect persistent offenders.

However, we found CVSE lacks the systems and resources to implement random scheduling effectively. Although 18 of the 23 inspection stations are expected to run random shift patterns, our data analysis showed that almost half the stations regularly did no inspections on Fridays and Saturdays. Inspection

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numbers were lowest on weekends across the province and at certain times of the day.

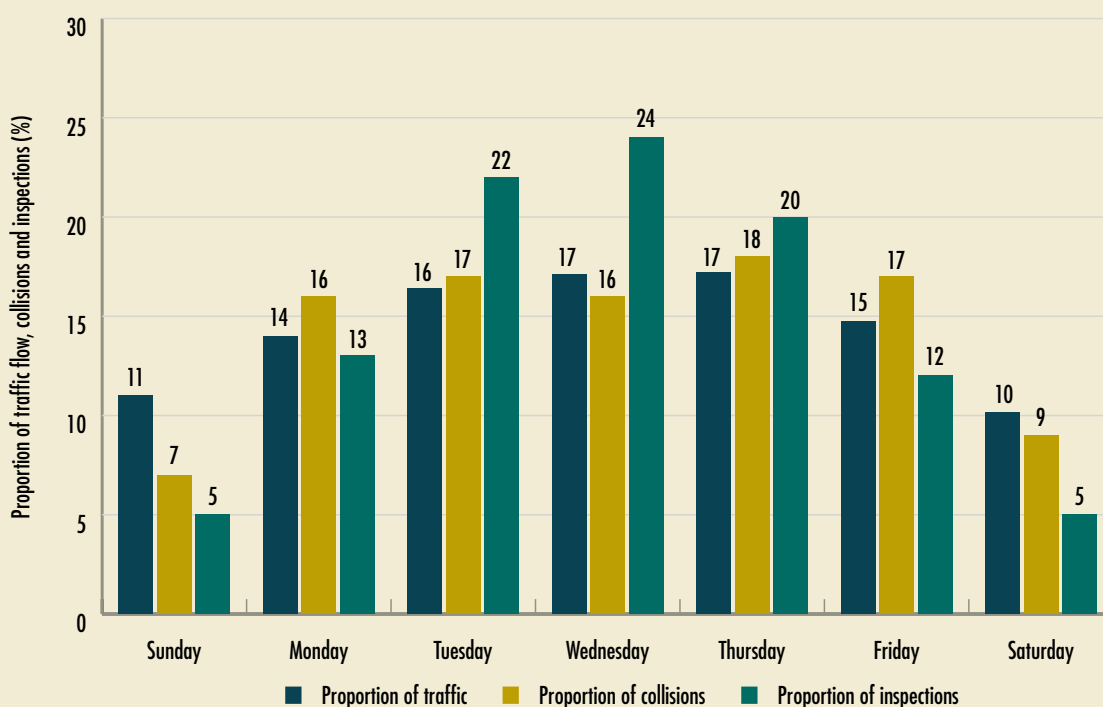
We compared the difference between commercial vehicle traffic levels, collision rates and inspection rates by days of the week (see Exhibit 10). We found that while both traffic levels and collision numbers are lower on Saturdays and Sundays, the difference is not as significant as it is with inspection numbers.

As Exhibit 10 shows, 10% of traffic flow and 9% of collisions occur on Saturdays but only 5% of inspections.

These collisions may not generally be caused by mechanical failure, but commercial vehicle officers also address key human causes of accidents such as fatigue and impaired driving. If they suspect impairment, CVSE policy is that officers should call in the police to carry out testing and enforcement. Officers also verify that commercial vehicle drivers have the appropriate licence to operate.

We also found a mismatch between the monthly patterns for commercial vehicle collisions and inspections. As [Exhibit 11](#) shows, the proportion

**Exhibit 10:** Proportion of commercial vehicle inspections compared with commercial vehicle traffic and collisions, by day of the week



Source: Office of the Auditor General of British Columbia calculations based on ICBC/police data (collisions) and TRAN data (traffic flow and inspections). Includes all levels of CVSA inspection, as well as Notice and Order inspections. Does not include school bus inspections. Collision data uses police definition of heavy commercial vehicle. Traffic flow data came from two counter locations, near Golden and Hope inspection stations. Traffic flow data includes vehicles 12.5 metres and longer, plus 20% of vehicles between 6 and 12.5 metres in length.

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of collisions is highest in the winter months, while inspection rates are lowest, particularly in December. Inspections peak in March, in part because officers are required to have completed their 32 annual Level 1 CVSA inspections by the end of March to maintain their accreditation.

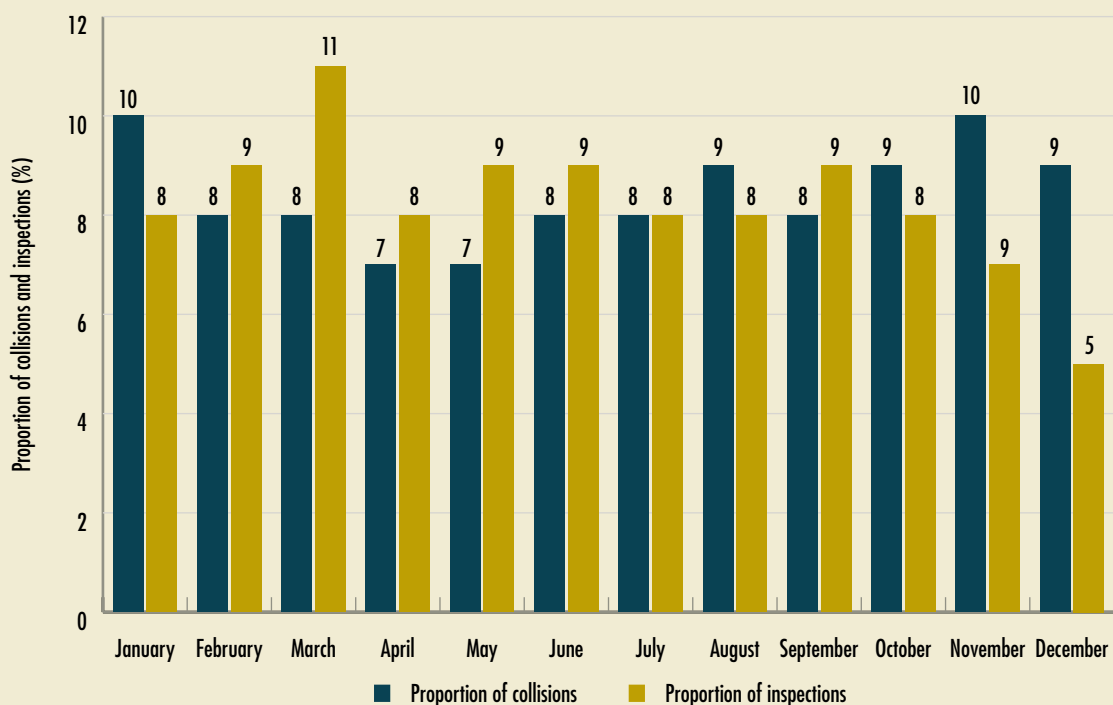
The pattern of inspections compared with collisions is also mismatched when it comes to the time of day. Around 19% of collisions involving a commercial vehicle take place between 10 p.m. and 6 a.m., whereas only 2% of commercial vehicle inspections take place during that time. The majority of inspection stations

schedule staff from 6 a.m. to 10 p.m. CVSE has found that scheduling staff to work at night has not been productive, and it is more difficult to do Level 1 CVSA inspections at night because of the lighting conditions.

However, this means commercial operators who want to avoid inspection could travel through B.C. from border to border and not encounter an open inspection station once if they chose to travel at night.

We were informed of the existence of apps that commercial vehicle drivers can use to find out when the inspection stations are open or closed. This

**Exhibit 11:** Proportion of commercial vehicle inspections compared with commercial vehicle collisions, by month



Source: Office of the Auditor General of British Columbia calculations based on ICBC/police data (collisions) and TRAN data (inspections). Includes all levels of CVSA inspection, as well as Notice and Order inspections. Does not include school bus inspections. Collision data uses police definition of heavy commercial vehicle.

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heightens the risk that those who want to avoid inspection are able to do so.

The challenge for the ministry is that it does not have the data or analysis to determine the level of non-compliance or the effectiveness of its current system, and therefore it does not know whether the level of inspection coverage around the province is sufficient to meet ministry safety goals. Data and analysis are discussed further in the next section of this report.

**RECOMMENDATION 7:** *We recommend that the Ministry of Transportation and Infrastructure assess whether commercial vehicle safety and enforcement officers have the equipment, infrastructure, information and training they need to do their jobs safely and effectively, to ensure they can operate at the level necessary to deter non-compliance and meet ministry safety goals.*

## DATA AND ANALYSIS

### **Safety programs prevent crashes and save lives, but government could do more with better data and analysis**

When government puts resources into programs, it needs to track whether these programs are helping to meet its goals. We expected government agencies to be collecting sufficient, accurate and reliable data on commercial vehicle safety activities, and to be analyzing the data to see how well their safety

programs are working. Because several ministries have responsibility for different data sets that are relevant for commercial vehicle safety, government has to ensure the various agencies work together to share data and analysis.

### Data sufficiency

In order to assess how well government's safety programs and activities are working, three types of data are important:

- ◆ outcomes
- ◆ determinants
- ◆ exposure

We expected the key agencies (ICBC, PSSG and TRAN) to be collecting these three types of data to assess how well their programs are working.

We found that key agencies have some data on outcomes and determinants, but there are important limitations. We also found agencies have very little exposure data. Note that while our focus in this audit is on commercial vehicle data, many of these deficiencies also apply to non-commercial vehicle safety data.

ICBC, TRAN, the BC Coroners Service, the health system and the police collect a range of outcome data that can be useful for analyzing commercial vehicle safety. These data cover such outcomes as collisions and fatalities involving commercial vehicles, injuries and hospitalizations, costs of collisions, roadside inspection and enforcement results, vehicle inspection results and results of interventions under the National Safety Code program.

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### KEY DATA THAT GOVERNMENT NEEDS TO UNDERSTAND COMMERCIAL VEHICLE SAFETY

**Outcome data:** For example, the number and severity of collisions involving commercial vehicles, the location and time of collisions, or the results of commercial vehicle roadside inspections and enforcement activity

**Determinant data:** For example, factors that contribute to collisions such as distraction, fatigue, driver training and experience, speeding, impairment, road conditions and vehicle safety data such as age of the fleet, safety maintenance, use of technology that limits the maximum speed of a truck, etc.

**Exposure data:** For example, the number of commercial vehicles, number of drivers, distances driven and indication of where travel occurs

Some of these data sets also include information about determinants (or factors) that could contribute to outcomes. Both the police data in the Traffic Accident System (TAS), which is maintained by ICBC, and the BC Coroners Service record contributing factors, such as impairment, fatigue, speeding and weather/road conditions. The TRAN data contains other information on factors that could contribute to outcomes, such as which vehicle items failed roadside inspection, the age of the commercial fleet and drivers' history.

However, there are limitations in both outcome and determinant data that affect agencies' ability to do comprehensive analysis on commercial vehicle safety.

With respect to outcomes, there are limits to what the data sources cover. The police data does not include motor vehicle incidents on forestry roads, private roads and private property, nor do the regulations regarding the safety of commercial vehicles apply in these areas, although they are locations likely to be frequented by commercial vehicles. The police data was also reduced after the law changed in 2008 and people were no longer required to report motor vehicle incidents to the police, but could instead report to ICBC.

The Coroners Service data is limited to fatal incidents, so its analysis doesn't cover injury or property damage incidents. ICBC claims data doesn't cover non-B.C. vehicles involved in accidents (around 10% of accidents reported to police involve non-B.C. drivers or vehicles).<sup>3</sup> B.C. receives crash and inspection report data from the United States but gets little information from the U.S. on commercial vehicle violation tickets, even though some B.C. commercial vehicles travel extensively in the U.S. The information B.C. receives from other Canadian and U.S. jurisdictions on commercial vehicle inspections does not contain the level of detail that B.C. officers would find useful.

With respect to determinants of collisions, in ICBC claims data this information is not always reliable because claims are self-reported by the people involved in the incidents. Another limitation is that agencies rarely bring together data from different sources, which would allow more powerful analysis.

<sup>3</sup> ICBC claims data does account for crashes occurring in B.C. by non-B.C. vehicles in cases where there is damage to a B.C. licensed vehicle or property damage to the road or infrastructure.

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For example, if hospitalization data were integrated with police data, it would provide greater understanding of collision outcomes and potentially of determinants (such as evidence of intoxicants or medications consumed by people involved in collisions). Agencies don't always share data, because their data systems are often incompatible and they have concerns that sharing information would bring them into non-compliance with legislation for protecting personal information.

Lack of exposure data is a significant challenge for analyzing trends in commercial vehicle safety in B.C. Exposure data makes it possible to analyze collision trends more accurately. For example, collision numbers may increase, but unless we know whether the number of vehicles or the amount of travel has also increased, we don't know if this means safety trends are getting better or worse.

Or there may be a particular highway where there is a high number of collisions compared to other highways, but unless we know how the traffic volume on that highway compares to other highways, we can't determine whether its relative rate of collisions is high, normal or low.

In B.C., there are very few sources of exposure data for commercial vehicles. TRAN's Traffic Data Program and Weigh2Go databases provide information on commercial vehicle exposure, but there are significant limits.

The Traffic Data Program monitors traffic at various locations throughout B.C. The ministry uses the data to determine current traffic patterns and help predict future trends. However, the majority of traffic counters

are not able to distinguish commercial vehicles from other types of vehicles and can only provide information on general traffic volume at specific locations. Weigh2Go only provides exposure data for commercial vehicles that participate in the program, which is approximately 8% of vehicles passing through the inspection stations.

Prior to 2015, the Canadian Vehicle Use Survey had data on vehicle kilometres travelled, which helped to determine the relative collision rates across Canada. However, the survey was discontinued, and B.C. was one of the provinces that did not participate in a subsequent Transport Canada Vehicle Use Study that electronically tracked vehicle kilometres travelled (P.E.I., Quebec, Ontario, Manitoba and Saskatchewan participated).

We were informed that this was because of privacy legislation in B.C. that constrained ICBC from providing customer contact information to Transport Canada for the purposes of recruiting volunteers. We understand the Canadian Vehicle Use Study has since been discontinued. ICBC continues to explore options for collecting exposure data, as the agency recognizes the importance of this data for analyzing safety outcomes.

### Data reliability

We found two key concerns with respect to the reliability of the data collected and used for commercial vehicle safety. One is the significant difference between how data sources define and classify commercial vehicles. The other is the difference in the factors they identify as contributing to collisions.

# KEY FINDINGS AND RECOMMENDATIONS

## Definitions

There are significant differences in how agencies define “commercial,” “heavy” or “heavy commercial” vehicles. What is classified as a commercial vehicle can vary considerably between data sources based on the look, weight and use of the vehicle in question. This means it can be difficult to make reliable comparisons between data sources.

For example, in the statistics ICBC publishes for commercial vehicle collisions, it uses one definition of “heavy vehicle” for incident and injured victim counts (i.e., having a licensed gross vehicle weight of greater than or equal to 10,900 kilograms) and a different definition for fatal victim counts (i.e., police categories of vehicle type).

The CVSE branch, for its part, defines heavy commercial vehicles as weighing more than 11,795 kilograms. The Coroners Service has referred to a commercial vehicle as “a heavy-duty vehicle used to transport goods,” and it has excluded a number of the vehicle types that the police include in their definition.

## Contributing factors

The factors the police identify in the Traffic Accident System data as contributing to collisions differ from those the coroner identifies, because the two agencies have very different processes for assessing contributing factors.

The police submit their report on a collision within a very short space of time, so the factors they identify are based on an initial assessment. They don’t change the contributing factors included in their Traffic Accident System database, even if they uncover new information during a later investigation. This is because the initial

report is treated as potential evidence in a court of law, and therefore it can’t be changed.

The coroner, by contrast, determines the factors contributing to a fatal collision only after lengthy investigation. Decision-makers often rely on the police data reported by ICBC because it is available more quickly than the coroner’s data.

## Data analysis

While a number of agencies have data that is relevant to assessing commercial vehicle safety, for this audit we focused on the CVSE branch’s data analysis work. We looked to see whether the branch has set targets and analyzed data to evaluate the effectiveness of its programs. We found it has tracked a number of measurable targets, and has improved how it uses data since our previous audit of 1996. However, it has not used data to evaluate the effectiveness of its programs.

CVSE uses several measures to track commercial vehicle safety performance. It looks at:

- ◆ collision and fatality rates on provincial highways
- ◆ the rate of vehicles that are found out-of-service at the annual CVSA 72-hour Roadcheck
- ◆ customer satisfaction levels on the Ministry of Transportation and Infrastructure’s annual survey
- ◆ data from Focused Inspection Team campaigns

We did not identify other Canadian jurisdictions that have more specific measures than CVSE’s to assess their performance on commercial vehicle safety or road safety more broadly, although we did find that Ontario’s equivalent of CVSE publishes a detailed

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annual report that shows a wide range of useful data about its programs. We did identify Australian jurisdictions that had set clear and measurable short- and long-term targets for road safety, compared with the targets in B.C. that aim to achieve a general “decrease” or “declining trend” in crash and fatality rates.

The best example we found of data analysis for commercial vehicle safety was the work of the Federal Motor Carrier Safety Administration (FMCSA) in the United States. The FMCSA has developed models for measuring the impact of two key commercial vehicle safety programs: roadside inspection and enforcement, and carrier safety interventions. These models are empirically tested, and the federal agency has used them for over 20 years for performance management in all U.S. states. Individual states have also used these models to assess effectiveness at the local level and to help them decide how to allocate their resources most efficiently.

Although TRAN had not done its own analysis, we worked with a subject matter expert to use ministry data to assess the safety impact of one of the main commercial vehicle safety programs: roadside inspection and enforcement. We worked with the ministry to adapt the FMCSA model to fit the B.C. context.

Using this model, the analysis showed that B.C. roadside inspection and enforcement activities between 2014 and 2016 prevented an estimated total of 1,100 commercial vehicle crashes, including 4+ fatalities and 260+ injuries.<sup>4</sup> These data include enforcement actions with commercial vehicle drivers

and carriers carried out by both CVSE officers and police/RCMP.

Using TRAN’s estimate of the social cost of crashes and ICBC insurance data, we calculated that this prevention activity resulted in a savings of \$130 million, including \$18.8 million in insurance costs for ICBC.

The analysis also showed that the number of roadside inspections and enforcement activities decreased during the 2014 – 16 period, which resulted in a decrease in the number of crashes prevented. However, the number of crashes prevented did not decrease by as much as the number of inspection and enforcement activities decreased. Inspection activities became more productive, as it took fewer inspections to prevent each crash.

Productivity of roadside inspections can be improved by pre-screening vehicles as they approach the inspection stations. As noted in the previous section, the Weigh2Go (W2G) program offers commercial carriers the opportunity to bypass inspection stations through pre-screening. The number of vehicles in W2G increased in B.C. each year over the three-year period we examined, as did the number of encounters and bypasses per vehicle. This may be a factor in why the productivity of CVSE roadside inspections improved.

The Carrier Intervention Effectiveness Model for the United States has also demonstrated that carrier interventions, such as audits, make a significant impact in terms of preventing crashes and injuries and saving lives. We did not run the analysis for B.C.,

<sup>4</sup> As with all models, there are limitations to the roadside inspection and enforcement model. The FMCSA reviews and updates the model on a regular basis, to take into account new empirical information as well as revisions to the theory that supports the model. The revisions the FMCSA is currently working on will likely result in lower estimates for crashes prevented by inspection and enforcement activities. For further information, contact the FMCSA at [www.fmcsa.dot.gov](http://www.fmcsa.dot.gov).



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but extrapolating the U.S. data suggested a strongly positive cost-benefit result.

### Why do data and analysis matter?

Government's resources are finite, so it needs to know that resources are being put to the best use. Decision-makers will be able to make better policy decisions if they know how to achieve their goals most effectively. This type of data analysis allows them to make cost-benefit comparisons of policy alternatives. Gathering sufficient, reliable data is the first step in being able to use data to understand how well programs are working. But data does not always speak for itself; therefore, analysis is often needed to interpret the data.

There are various policy options available for decision-makers when they are considering how to achieve their goals. The example of the FMCSA models for commercial vehicle safety shows how good data analysis gives the ability to assess the potential impact of different policy options, such as:

- ◆ investing in technology to improve inspection productivity
- ◆ allocating additional resources to ensure violations are corrected
- ◆ changing the penalty structure for violations to increase the impact of interventions

Data analysis results could also be used to evaluate how commercial vehicle safety and enforcement officers' time should be split between the different aspects of their work, such as inspection activities versus enforcement of moving violations.

We understand TRAN has been considering ways to increase the number of carrier audits and compliance reviews since at least the time of our first audit in 1996. If it did this type of detailed analysis using the FMCSA models, it would have better information to determine how to achieve that goal.

**RECOMMENDATION 8:** *We recommend the Ministry of Transportation and Infrastructure, ICBC and the Ministry of Public Safety and Solicitor General ensure the sufficiency, reliability and accuracy of commercial vehicle safety data, and consider ways to integrate data sources to allow comprehensive analysis.*

**RECOMMENDATION 9:** *We recommend the Ministry of Transportation and Infrastructure collect and analyze data that enables it to develop appropriate targets and to evaluate the effectiveness of its commercial vehicle safety programs.*

# AUDIT QUALITY ASSURANCE

**WE CONDUCTED THIS** audit under the authority of section 11 (8) of the *Auditor General Act* and in accordance with the standards for assurance engagements set out by the Chartered Professional

Accountants of Canada (CPA) in the CPA Handbook –Canadian Standard on Assurance Engagements (CSAE) 3001 and Value-for-money Auditing in the Public Sector PS 5400. These standards require that we comply with ethical requirements, and conduct the audit to independently express a conclusion on whether or not the subject matter complies in all significant respects to the applicable criteria.

The Office applies the CPA Canadian Standard on Quality Control 1 (CSQC) and, accordingly, maintains a comprehensive system of quality control,

including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements. In this respect, we have complied with the independence and other requirements of the code of ethics applicable to the practice of public accounting issued by the Chartered Professional Accountants of BC, which are founded on the principles of integrity, objectivity and professional competence, as well as due care, confidentiality and professional behaviour.

# APPENDIX: COMPLETE AUDIT CRITERIA

## LICENSING

**1.1** The Ministry of Public Safety and Solicitor General and ICBC have set appropriate standards for driver licensing to ensure commercial vehicle drivers have the skills and experience required to operate safely

## EDUCATION

**2.1** ICBC and RoadSafetyBC have developed and implemented education and awareness programs designed to address commercial vehicle safety risks

Note: RoadSafetyBC does not have legislative responsibility in this area, but does coordinate education work on road safety through the Road Safety Strategy Committee and sub-committees. Other key partners are the Commercial Vehicle Safety and Enforcement branch, WorkSafeBC and SafetyDriven—Trucking Safety Council of B.C.

## VEHICLE MAINTENANCE

**3.1** Commercial Vehicle Safety and Enforcement branch (CVSE) has set standards for vehicle inspection and maintenance that conform to national standards and good practices

**3.2** CVSE has granted Designated Inspection Facility (DIF) and Preventative Maintenance Facility (PMF) licences only to facilities that meet the standards

**3.3** CVSE has assurance that DIFs and PMFs are operating in compliance with standards

**3.4** CVSE has taken action to address non-compliance by DIFs and PMFs

## MONITORING AND ENFORCEMENT

**4.1** CVSE has approved National Safety Code (NSC) certificates only for carriers who demonstrate readiness to operate in compliance with regulations

**4.2** CVSE has implemented the NSC safety rating system effectively to promote carrier compliance with safety requirements

**4.3** Mobile and fixed enforcement are carried out effectively to address key safety risks by carriers and drivers, and from their vehicles

## INFORMATION AND ANALYSIS

**5.1** RoadSafetyBC, ICBC and CVSE have sufficient, reliable information to assess effectiveness of commercial vehicle safety programs

**5.2:** CVSE has used the information to evaluate effectiveness of programs

**5.3:** Data demonstrate CVSE program activities have prevented crashes



OFFICE OF THE  
**Auditor General**  
of British Columbia

### Location

623 Fort Street  
Victoria, British Columbia  
Canada V8W 1G1

### Office Hours

Monday to Friday  
8:30 am – 4:30 pm

**Telephone:** 250-419-6100

Toll free through Enquiry BC at: 1-800-663-7867

In Vancouver dial: 604-660-2421

**Fax:** 250-387-1230

**Email:** [bcauditor@bcauditor.com](mailto:bcauditor@bcauditor.com)

**Website:** [www.bcauditor.com](http://www.bcauditor.com)

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## AUDIT TEAM

Malcolm Gaston,  
*Deputy Auditor General*

Jane Bryant,  
*Director*

Jessica Schafer,  
*Manager*

Alexander Gunn,  
*Performance Auditor*

Pam Hamilton,  
*Director*

## SUBJECT MATTER EXPERTS

Alex Bugeya

John Meed

Dr. Garland Chow



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**Auditor General**  
of British Columbia