Auditor General
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Report to the Legislative Assembly

Automatic Vehicle Location Management Systems

Independent Audit Report

June 2021

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Auditor General
MANITOBA

June 2021

Honourable Myrna Driedger
Speaker of the Legislative Assembly
Room 244, Legislative Building
450 Broadway
Winnipeg, Manitoba R3C 0V8

Dear Madam Speaker:

It is an honour to submit my report, titled *Automatic Vehicle Location Management Systems*, to be laid before Members of the Legislative Assembly in accordance with the provisions of Section 28 of *The Auditor General Act.*

Respectfully submitted,

Original Signed by:
Tyson Shtykalo

Tyson Shtykalo, CPA, CA
Auditor General

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Auditor General's comments

Government assets should be used in a way that maximizes operational and financial efficiency. In 2018, Vehicle and Equipment Management Agency (VEMA) started its Automatic Vehicle Location (AVL) program and installed devices in over 1,700 light duty fleet vehicles used by government departments and special operating agencies (entities). The goal of this program is to decrease costs, increase safety, and in the process, reduce greenhouse gas emissions through decreased fuel consumption and better driving.

When it comes to using government vehicles and the goals of the AVL program, there needs to be a consistent approach to acceptable and unacceptable behaviour. We looked at 2 examples of driver behaviour that we thought would have a significant impact on achieving the results envisioned by the AVL program: speeding and excessive idling. What we found was a surprising amount of variety. While there will always be exceptional circumstances, there should be clear and consistent expectations for drivers regarding speed and how long a vehicle should be left running. As well, for efficient and effective monitoring, driver non-compliance must be clearly defined to identify which incidents to follow-up on. When this is absent, managers are unclear on what is allowed.

Different rules mean different treatment and different outcomes. We found a range of approaches to monitoring, reporting, and correcting unacceptable driver behaviour. When entities are on different schedules and tracking different results, it is difficult to get an overall picture of the progress made against the goals of the program and where adjustments would be helpful.

Central guidance creates a consistent and uniform approach. Some entities told us they were waiting for further direction before putting in place their own procedures to monitor fleet vehicles. During the course of our audit, I was pleased to see that Treasury Board Secretariat created a working group to develop a centralized policy and reporting template as well as a driver education and training framework. Per our recommendation, it will be important to ensure responsibilities around vehicle use, non-compliant behaviour, corrective measures, monitoring, reporting, and follow-up are all clearly outlined in this guidance.

The report contains 8 recommendations for improvements related to monitoring and follow up actions for driver non-compliance, as well as establishing oversight and reporting for the program.

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I would like to thank the management and staff members of the Vehicle and Equipment Management Agency, Treasury Board Secretariat, and the Departments of Conservation and Climate, Families and Infrastructure that we met with during the audit for their cooperation and assistance. I also would like to thank my audit team for their diligence and hard work.

Original Signed by:
Tyson Shtykalo

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Auditor General

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# Automatic Vehicle Location (AVL) Management Systems

The audit examined if Automatic Vehicle Location (AVL) information, from Vehicle and Equipment Management Agency's (VEMA) fleet vehicles is being used to maximize operational and financial efficiencies

Why? Using AVL devices is expected to result in operational and financial efficiencies by improving driver behaviour

By the numbers:

1,785 light-duty fleet vehicles in use by core government (May 2020)
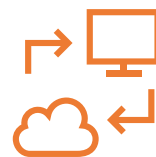
AVL devices transmit vehicle information such as speed and location to a cloud server

What we found:

AVL information is not being used to maximize operational and financial efficiencies

ROLES AND RESPONSIBILITIES

- Expected driver behaviour not consistently defined
- No universal definition for driver non-compliance

MONITORING AND CHANGING BEHAVIOUR

- Many entities indicated regular monitoring of AVL data and identified non-compliant driver behavior
- No clear consequences for non-compliance
- Minimal remedial actions taken and limited follow-up on non-compliance

OVERSIGHT AND REPORTING

- No central authority to ensure program achieves financial and operational efficiencies
- No reporting process to facilitate central monitoring
- No public reporting on results

Report includes 8 recommendations

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Main points

What we examined

We assessed whether Automatic Vehicle Location (AVL) information, from Vehicle and Equipment Management Agency's (VEMA) fleet vehicles, is being used to maximize operational and financial efficiencies.

What we concluded

We concluded that Automatic Vehicle Location information from Vehicle and Equipment Management Agency's fleet vehicles is not being used to maximize operational and financial efficiencies.

What we found

Our report includes 8 recommendations. While our audit focused on core government entities using fleet vehicles, we encourage all government entities with fleet vehicles to assess the applicability of our recommendations and act accordingly. An overview of our major findings follows:

ROLES AND RESPONSIBILITIES

Roles and responsibilities for using vehicles and AVL data were not clearly defined and communicated (Section 1)

To hold drivers accountable for their driving behaviour, the expectations for this behaviour should be clearly defined and communicated. Likewise, if entity staff are expected to monitor AVL data, they need to know what to do with the data, along with what constitutes driver non-compliance.

We reviewed existing policies and conducted a survey of core government entities with AVL devices. We found:

- Policies in use by core government entities with AVL-equipped vehicles do not clearly define driver expected behaviour.
- Driver non-compliance is not consistently defined.
- Many policies define how AVL data is to be used.

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MONITORING AND CHANGING DRIVER BEHAVIOUR

Some monitoring of AVL data occurs, but little is done to change undesirable driver behaviours (Section 2)

Monitoring performance is an important management practice to ensure progress towards goals and the achievement of desired results. Regular monitoring of AVL data is important to detect undesirable driver behaviour early, and ensure the goal of operational and financial efficiency is achieved. Likewise, steps should be taken to change identified undesirable behaviour.

We found some monitoring of AVL data was occurring, and little was done to change undesirable driver behaviours. We found:

- Many entities indicated they have a regular process to monitor AVL data.
- Monitoring identified non-compliant driver behaviour.
- There was minimal evidence of follow-up on driver non-compliance.
- There were no clear consequences for driver non-compliance, with minimal remedial actions taken.

CENTRALIZED OVERSIGHT AND REPORTING

There was no centralized oversight and reporting process of the AVL program (Section 3)

AVL devices were installed in VEMA's fleet vehicles to find operational and financial efficiencies. These efficiencies were expected to be achieved through improving driver behaviour—specifically: reduced idling, speeding, and unapproved after-hours use of vehicles. Given the government-wide scope of this initiative and need for consistency in monitoring, reporting, and remedial actions, we expected to find central guidance and monitoring of the AVL program.

However, we found there was no centralized oversight and reporting process of the AVL program. Our conclusion is based on the following findings:

- No central authority for the program had been identified.
- There was no reporting process to enable central monitoring.
- There was no public reporting or reporting on efficiencies obtained through introduction of the AVL devices.

We requested responses from each of the entities we audited. Treasury Board Secretariat provided a summary response, included below. Responses provided specific to recommendations have been included in the SUMMARY OF RECOMMENDATIONS section of the report.

Treasury Board Secretariat (TBS) thanks the Office of the Auditor General for the audit report and is in full agreement with the recommendations as detailed. TBS has been actively engaged in the development of a cross-government monitoring and reporting framework that, we believe, closely aligns with and fulfills the recommendations of this report.

The Manitoba government is committed to ensuring the proper and efficient use of all government vehicles and, more importantly, the safety of employees and the public. To support this, the Automatic Vehicle Location (AVL) Policy was implemented in 2018 and AVL devices were installed in all Vehicle and Equipment Management Agency (VEMA) fleet vehicles to:

- enhance safety for employees working alone;
- identify opportunities to reduce environmental impacts;
- improve operating and financial efficiencies; and
- flag behaviors that place employees and the public at risk.

Building upon the initial policy framework in 2019 that delegated reporting between individual departments and VEMA, Treasury Board Secretariat launched an AVL Working Group in June 2020 to develop a robust centralized policy and framework in the General Manual of Administration (GMA).

The new AVL policy outlines expectations and guidelines for AVL data usage, monitoring, accountabilities, and reporting for all fleet vehicles with installed AVLs. Further details regarding the policy and accompanying monitoring framework, safe driving action plan, reporting templates and training guides have been detailed in our comprehensive response and comments provided in the report.

The AVL policy, framework and reporting process were approved by Treasury Board on May 18, 2021 and have been incorporated into the GMA. TBS is working closely with all client departments to operationalize the policy and reporting processes for the first quarter of the 2021/22. TBS is committed to ensuring that the policy and framework are both responsive to operational business requirements and the safe and efficient use of fleet vehicles.

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Background

Vehicle and Equipment Management Agency (VEMA) is a Special Operating Agency of the Province of Manitoba. Its role is to acquire, manage, and dispose of vehicles and equipment for government entities.

VEMA mainly provides provincial government departments, agencies, and Crown corporations with fleet vehicles. These clients are responsible for ensuring their staff (the drivers of the vehicles) comply with relevant laws and regulations, including *The Drivers and Vehicles Act, The Highway Traffic Act,* and *The Workplace Safety and Health Act.*

VEMA has 2 vehicle and equipment divisions: light-duty and heavy-duty. The light-duty division oversees vehicles such as sedans, SUV/crossovers, and vans, as well as light trucks, prisoner transports, and ambulances. The heavy-duty division oversees equipment such as graders and loaders.

As of March 2020, VEMA had 4,838 vehicles in its fleet (including vehicles awaiting disposal) as follows:

- 2,735 light-duty vehicles and equipment, including:
   – 251 ambulances and primary care buses.
   – 136 miscellaneous (including prisoner containment units, ATVs and truck boxes).
- 2,103 heavy-duty vehicles and equipment.

As of May 2020, **core government entities** were using 1,785 fleet vehicles.

Through *The Climate and Green Plan Act* (the Act), the Province has committed to reducing government greenhouse gas emissions by:

- Increasing use of zero-emission vehicles.
- Reducing the fleet's fuel consumption.

The Act also requires emissions of all government entities to be tracked and recorded on an annual basis.

> **Core government entities include**, for the purposes of this report, 15 Province of Manitoba departments or departmental units, and 3 Special Operating Agencies leasing light-duty fleet vehicles from VEMA.

AUTOMATIC VEHICLE LOCATION (AVL) DEVICES

The Province undertook a review of its light-duty vehicle fleet in 2018. Through this review, the Province identified vehicles with less than 20,000 kilometers travelled during the previous fiscal year, and departments were required to justify vehicles they wanted to retain. This initiative identified 405 vehicles for disposition, and officials estimated this would result in $2.3 million in annual savings.

Building on this review, Treasury Board Secretariat endorsed a cross-government monitoring and reporting system. This included the use of regular reports from departments on vehicle disposition and usage, as well as the installation of Automatic Vehicle Location (AVL) devices on fleet vehicles, and use of the related data.

In 2018, VEMA installed AVL devices on all fleet vehicles, with the goal to:

VEMA installed AVL devices on fleet vehicles in part to find:

- Operational and financial efficiencies.
- Opportunities to reduce environmental impacts.

- Increase the safety of employees working alone.
- Find ways to reduce environmental impacts (i.e. greenhouse gas emissions).
- Find operational and financial efficiencies.
- Issue alerts directly to the department when employees put themselves or the public at risk (for example, when they are speeding).

An AVL device is a piece of hardware that connects to the computer port on the vehicle. It broadcasts information from the vehicle through the cellular network to data storage in "the cloud" (servers accessed over the Internet).

Data captured by AVL devices includes:

- Vehicle location.
- Vehicle speed.
- Idling time.
- Distance driven.
- Activity time.

For reporting, data is accessed through a user portal, called Geotab. Geotab reports can be customized to filter data using rules, which are specific parameters applied to the data set. Geotab identifies an incident every time the parameter set for reporting is exceeded. For example, it is possible to generate multiple incidents in one trip if a driver's speed varies above and below the set threshold.

The amount and type of data accessible to entities depends on the user plan that is chosen. For example, VEMA has the basic plan, which includes access to speeding and idling data. Some departments have taken a higher-level plan, which includes access to data collected on harsh events (dangerous driving such as harsh acceleration, braking, and cornering). The higher-level plan, however, comes at a significantly higher cost.

The Geotab devices and software use a Google Maps Platform. As a result, the speed limit data in Geotab is based on the data recorded in Google Maps. However, there are limitations to the data in Google Maps. Speed limits in less populated areas of the province (for example, rural areas) are often estimated. This can result in incidents of speeding being flagged in error. VEMA officials indicated they are working to improve the data and minimize incorrect reporting.

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Audit objective

The objective of the audit was to determine whether Automatic Vehicle Location (AVL) information, from Vehicle and Equipment Management Agency's (VEMA) fleet vehicles, is being used to maximize operational and financial efficiencies.

Scope and approach

We surveyed the 18 core government entities using light-duty fleet vehicles about their policies and processes for monitoring AVL data. See **APPENDIX 1** for a copy of the survey. We examined the policies and processes for AVL management within the Departments of:

- Conservation and Climate.
- Infrastructure.
- Families.

As of May 2020, these 3 departments had 417, 715, and 76 light fleet vehicles, respectively. We selected the first 2 because they had the largest fleet sizes, and the Department of Families was randomly selected from the departments with medium-sized fleets.

We interviewed departmental staff, examined and analyzed existing central government and departmental policies and practices, information systems, records, reports, minutes, correspondence and practices in other jurisdictions. We sampled 15 speeding and 15 idling incidents for each of the 3 departments recorded between April 1, 2019 and March 31, 2020 (considering the duration of the event), to examine departmental monitoring and follow-up actions. We also obtained from VEMA a listing of all photo radar tickets issued to light-duty vehicles in 2020 and followed up to ensure the driver personally paid the required fine.

We obtained and analyzed AVL data for all 18 core government entities for the period September 2018 to September 2020 to identify trends in speeding and idling behaviours (totalling 2.4 million incidents).

Our audit did not look at light-duty fleet vehicles in use by the Legislative Assembly, or for entities outside of the core government. We also did not look at heavy-duty fleet vehicle use.

Audit criteria

To determine whether AVL information, from VEMA's fleet vehicles, is being used to maximize operational and financial efficiencies, we used the following criteria:

Criteria	Criteria source
Roles and responsibilities for using vehicles with AVL devices and related data should be clearly defined and communicated.	VEMA guide - Light-Duty Division Province of Manitoba Automatic Vehicle Location Policy Procurement Administration Manual
There should be processes to monitor, and attempt to change identified, undesired driver behaviour.	VEMA guide - Light-Duty Division Province of Manitoba Automatic Vehicle Location Policy Procurement Administration Manual
There should be a reporting process to facilitate central monitoring of progress towards achieving efficiencies through the use of AVL data.	Criteria of Control (CICA)

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Automatic Vehicle Location information not being used to maximize operational and financial efficiencies

The Province installed Automatic Vehicle Location (AVL) devices in fleet vehicles to identify and modify driver behaviours, with the ultimate goal of realizing operational efficiencies and financial savings. To achieve this, roles and responsibilities for using vehicles and the related data should be clearly defined and communicated, and proper monitoring, follow-up, and reporting of driver behaviour needs to takes place.

We concluded that AVL information from VEMA's fleet vehicles is not being used to maximize operational and financial efficiencies. We based this conclusion on the following findings:

- Roles and responsibilities for using vehicles and AVL data are not clearly defined and communicated (**SECTION 1**).
- Some monitoring of AVL data occurs, but little is done to change undesirable driver behaviour (**SECTION 2**).
- There is no centralized oversight and reporting process (**SECTION 3**).

1 Roles and responsibilities for using vehicles and AVL data not clearly defined and communicated

To hold drivers accountable, expected driver behaviour should be clearly defined and communicated. Likewise, if entity staff are expected to monitor AVL data, they need to know what to do with the data, along with what constitutes driver non-compliance. We found:

- Policies do not clearly define driver expected behaviour (**SECTION 1.1**).
- Non-compliance is not consistently defined (**SECTION 1.2**).
- Many policies define use of AVL data (**SECTION 1.3**).

1.1 Policies do not clearly define driver expected behaviour

We surveyed the 18 core government entities using light fleet vehicles about their vehicle-use policies (see **APPENDIX 1** for a copy of the survey). We expected government policies to be in place that clearly define expected driver behaviour.

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Although 83% of the entities (15 of the 18) indicated they had policies for the use of light fleet vehicles, none had clearly defined driver expected behaviour for all 3 behaviours – speeding, idling, and after-hours use. Overall, we found:

- 72% (13 entities) had clearly defined expectations for speeding.
- 50% (9 entities) had clearly defined expectations for after-hours use.
- None of the entities had clearly defined expectations for idling.

Fleet vehicles were in use for many years before AVL devices were installed. However, several entities had not updated their policies to include AVL devices. Some policies we examined focused mainly on other matters such as recording personal use of the vehicle for calculating the employee's taxable benefit. VEMA's AVL policy (in use by 11 entities) was prepared after the introduction of the AVL devices in 2018. This policy was clear on expectations related to speeding.

We note the Province had not issued central AVL guidance for all entities to follow. See **SECTION 3.1** for further discussion of this and for recommendations related to central guidance.

1.2   Non-compliance not consistently defined

Core government entities can monitor AVL data by running reports in Geotab. For efficient and effective monitoring, driver non-compliance must be clearly defined to identify which incidents to follow-up on. Additionally, these definitions would serve to guide when remedial action is necessary. Driver non-compliance should therefore be defined for each key AVL variable tracked, including:

- Speeding.
- Idling.
- After-hours use.

To ensure fair and equitable treatment of drivers across core government entities, there should be a consistent definition of driver non-compliance. However, we found there was no central guidance that clearly defined driver non-compliance. Of the 18 entities surveyed, we found as of May 2020:

- 61% (11 entities) had definitions of non-compliance for speeding.
- 50% (9 entities) had definitions of non-compliance for idling.
- None had defined non-compliance for after-hours use, but 5 had defined after-hours.

We also found there was notable differences in the definitions used by the entities for driver non-compliance. VEMA's AVL Policy states entities are responsible for ensuring drivers follow relevant laws and regulations, including those in *The Highway Traffic Act.* However, the AVL policy gives no threshold for how far above the posted speed limit is considered non-compliant (and therefore requires follow-up). Similarly, the Department of Infrastructure communicated to staff that idling should be minimized, but gave no clear definition of how long a vehicle could idle before it was considered unacceptable. Department of Infrastructure officials noted that setting a threshold for idling is difficult due varied operational requirements, which can in some cases require excessive idling.

A lack of clear guidance on what constitutes driver non-compliance has implications for ensuring consistency and comparability between entities. For example, acceptable thresholds in one department may be viewed as unacceptable driving behaviour in another department, therefore creating inconsistent monitoring practices and enforcement. This is discussed further in **SECTION 2.2**. At the same time, these inconsistencies are unlikely to support the overall goal of the AVL program, which is to maximize operational and financial efficiency. This is discussed further in **SECTION 3.2**.

1.3 Many policies define use of AVL data

VEMA is responsible for managing the fleet vehicles with AVL devices, and core government entities are responsible for managing their staff that drive the fleet vehicles. Given the overlap in responsibilities, the roles and responsibilities related to using AVL data for both VEMA and the entities need to be clearly defined.

We found 61% of the core government entities using fleet vehicles (11 of the 18) had policies that defined how AVL data should be used (the 11 entities using VEMA's AVL policy, including the Departments of Families and Conservation and Climate, which also have departmental guidance). The departmental guidance indicated management, not VEMA, was responsible for reviewing AVL data.

Implementation of **RECOMMENDATION 4** in **SECTION 3.1** would help ensure clear and consistent guidance for entities using fleet vehicles and the related AVL data.

2 Some monitoring of AVL data occurs, but little done to change undesirable driver behaviour

Monitoring performance is an important management practice to ensure progress towards goals and the achievement of desired results. Regular monitoring of AVL data is important to detect undesirable driver behaviour early, and ensure the goal of operational and financial efficiency is achieved. Likewise, steps should be taken to change identified undesirable behaviour.

We found some monitoring of AVL data was occurring, but little was done to change undesirable driver behaviours. We based this conclusion on the following findings:

- Many entities indicated they have a regular process to monitor AVL data (**SECTION 2.1**).
- Monitoring identified non-compliant driver behaviour (**SECTION 2.2**).
- There was minimal evidence of follow-up on driver non-compliance (**SECTION 2.3**).
- There were no clear consequences for driver non-compliance, with minimal remedial actions taken (**SECTION 2.4**).

2.1 Many entities indicated they had a regular process to monitor AVL data

We expected all core government entities with fleet vehicles to have a regular process to monitor AVL data. In our May 2020 survey, 72% of the core government entities with light fleet vehicles (13 of the 18) responded they had a process to monitor AVL data. We examined the monitoring processes of the Departments of Conservation and Climate, Families, and Infrastructure, which together accounted for 68% of the light vehicles in use by the 18 entities. The Departments of Conservation and Climate and Infrastructure were both monitoring AVL data at the time of our survey in May 2020; Families began monitoring in June 2020.

BEHAVIOURS MONITORED

As seen in **FIGURE 1,** many of the entities we surveyed indicated they monitored AVL data for speeding and idling incidents. Some entities had an enhanced data plan (for which they pay a higher cost), with access to additional data including harsh braking, cornering, and acceleration, and reported monitoring these activities.

Figure 1: Driver behaviours being monitored as indicated by the entities (as of May 2020)	
Behaviour	**Number of entities monitoring behaviour**
Speeding	11
Idling	9
After-hours use	0
Other*	7

*Other behaviours monitored included harsh braking, acceleration, and cornering.

Source: OAG survey of core government entities with light fleet vehicle users

In July 2019, Treasury Board Secretariat (TBS) introduced a requirement for all departments to submit management reports to its respective Deputy Minister that:

- Reported aggregate vehicle use information.
- Certified that monitoring of AVL information has regularly occurred.

All 3 departments provided us with examples of aggregate vehicle use information reported to the

Deputy Minister. Prior to July 2019, TBS had also put in place a requirement for departments to submit quarterly reports to them. This is discussed further in SECTION 3.2.

FREQUENCY OF MONITORING

As FIGURE 2 shows, many of the entities indicated they were monitoring AVL data on a monthly basis, with some monitoring more frequently, and some only monitoring as needed, or not at all.

Figure 2: Monitoring frequency indicated by entities (as of May 2020)*	
Frequency of monitoring	Number of entities
Weekly	2
Biweekly	1
Monthly	6
Quarterly	2
As needed	4
No monitoring occurring	5

*Note: Three entities reported multiple monitoring frequencies.

Source: OAG survey of core government entities with light fleet vehicle users

Recommendation 1

We recommend that all core government entities with fleet vehicles regularly monitor AVL data for internal use, at minimum monthly, including speeding, idling, and after-hours use incidents.

2.2 Monitoring identified non-compliant driver behaviour

As part of monitoring processes, staff in core government entities are expected to regularly review AVL data, noting incidents of driver non-compliance. We examined information in **Geotab** as of October 30, 2020, and found staff from all but one of the 18 core government entities had logged into Geotab within the last 30 days.

Core government entities monitoring AVL data obtain reports from **Geotab**, a user interface that presents AVL data in an understandable format.

To assess detailed entity monitoring for non-compliance, we focused on 3 departments:

- Department of Conservation and Climate.
- Department of Infrastructure.
- Department of Families.

These departments were selected based on their fleet size (and the significant impact on the success of program goals and outcomes). The fleet sizes for the 3 departments as of May 2020 were 417, 715, and 76 respectively—68% of the core government light vehicle fleet.

At the time of our survey in May 2020, 2 of the 3 departments were monitoring AVL data. Families began monitoring data in June 2020. Monitoring by all 3 departments was ongoing as of September 2020. We examined one example of monitoring for each of the 3 departments, and found:

- Climate and Conservation's report included 47 incidents of idling for the same vehicle, in a two-week period.
- Infrastructure's report included 188 speeding incidents for the same vehicle, in a one-month period.
- Families' report included 34 speeding incidents for the same vehicle, in a one-month period.

Geotab has standard reports that users can customize to filter data using rules. Rules are user-defined parameters that set levels for data reporting. For example, rather than a report that identifies all incidents where the speed limit is exceeded, the user can instead create their own rule to only include incidents where the speed exceeded the threshold by at least 15 km/hour for 20 seconds or more. This allows users to focus on monitoring incidents that are more significant.

We noted that the rules entities indicated they used to identify incidents in AVL differed; for example, we found 7 different speeding rules in use by 11 different entities. One entity indicated it had a report rule to capture any speeding incidents. Others reported using rules that flagged speeding over a certain threshold but those rules varied across entities.

When entities set their own rules and thresholds, the inevitable inconsistencies in rules make it difficult to compare data across entities, making central monitoring challenging. It also makes consistent action on non-compliance problematic, as a behaviour may register as acceptable for one entity and unacceptable for another. This is further discussed in SECTION 3.2.

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2.3 Minimal evidence of follow-up on driver non-compliance

Noted incidents of driver non-compliance need to be followed-up. As part of this, managers should determine whether work-related circumstances warranted the non-compliance, and, in the case of speeding, whether the speed limit in Geotab is correct (as it is estimated in some cases). Examples of warranted incidents may include speeding by an employee involved in a pursuit related to enforcement activities, or excessive idling times by an employee doing surveillance.

All 3 of the Departments selected for detailed testing indicated they were not regularly following up on after-hours use of vehicles. Departments indicated that determining after-hours is not easy as work hours can vary. Another challenge with monitoring after-hours use is that personal use of fleet vehicles is permitted (for a fee) for employees assigned a fleet vehicle.

We selected a sample of 15 speeding and 15 idling incidents between April 2019 and March 2020 for each of the 3 departments to see the follow-up actions the departments took for the incidents. We expected to see evidence that the departments had followed up on these incidents of non-compliance, but we saw no such evidence. We found:

- Department of Conservation staff informed us of the investigations that were done for 22 of the 30 incidents sampled, but provided no documented support of actions taken.
- Department of Families staff informed us of the investigations that were done for 11 of the 30 incidents sampled, but also provided no documented support of actions taken.
- The Department of Infrastructure provided no evidence of follow-up for the 30 incidents sampled.
  - Officials stated they were only following-up speeding incidents when the speed limit was not estimated. There was no follow-up for 12 of the 15 samples as they were based on an estimated speed limit. We note, however, that in a few of these cases the speed recorded exceeded 125 km/h.
  - Three of the speeding samples were prior to the Department implementing a monitoring process, therefore these incidents were also not followed up.
  - The Department was not following up on idling incidents at the time of our audit.

Without follow-up of non-compliance, it is unlikely the undesired behaviour will improve. In turn, this could result in AVL program goals not being achieved.

Recommendation 2

We recommend that all core government entities with fleet vehicles follow-up on incidents of driver non-compliance identified in their internal monitoring of AVL data, including documenting the reason(s) for the incident and any additional follow-up actions taken.

PHOTO RADAR TICKETS

As part of the VEMA lease agreement, individual drivers are responsible for paying the cost of tickets received for driving infractions, including photo radar tickets issued when vehicles exceed the speed limit. As the registered owner of the fleet vehicles, VEMA receives notification of photo radar tickets, and then informs the entity or the driver directly.

VEMA provided a list of all photo radar tickets issued to light-duty vehicles in 2020. It included 28 photo radar tickets issued to core government vehicles. For all 28 tickets we saw evidence that the driver personally paid the fine.

2.4 No clear consequences for driver non-compliance; minimal remedial actions taken

We expected there to be established consequences for driver non-compliance that escalate for repeat offences. We further expected that these consequences would be used once driver non-compliance was confirmed.

The Civil Service Commission, the agency responsible for leading human resource management in the Province, provided guidance to Deputy Ministers in July 2019 related to use of AVL data. The guidance stated:

> *"AVL data may reveal situations where performance management or disciplinary action may need to be taken as a result of violations of policy, legislation, or regulations. These situations are addressed similar to any other human resource or labour relations matter."*

In examining the 3 departments, we found the departments had not established clear consequences for driver non-compliance, and very limited remedial actions had been taken. Specifically, we found:

- Department policies in both Families and Conservation and Climate only included general references to the ability for supervisors and managers to initiate performance management and/or to take disciplinary action. The guidance did not indicate what consequences were available, when to apply them, nor the steps to take if the undesired behaviour continued.
  - Department of Conservation and Climate actions taken included educating the employee on driving-related policy, email reminders to staff, and having AVL information available on their intranet.
  - Department of Families sent out an all-staff email reminding employees of the need to follow government policy and all laws when operating a vehicle.
- While the Department of Infrastructure's policy did not address specific consequences for driver non-compliance, we saw examples, unrelated to the sample we reviewed, where monitoring identified speeding by staff and they were reprimanded. In one case an employee received an unpaid suspension for 5 days.

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Officials in the 3 departments expressed a need for central direction. This would ensure entities were consistent in their approach for dealing with undesirable driver behaviour. See **SECTION 3.1** for further discussion on centralized guidance.

Recommendation 3

We recommend that all core government entities with fleet vehicles take remedial action as necessary for driver non-compliance, in accordance with policies implemented in **RECOMMENDATION 4** (see **SECTION 3.1**).

3 No centralized oversight and reporting process

AVL devices were installed in VEMA's fleet vehicles to find operational and financial efficiencies. These efficiencies were expected to be achieved through improving driver behaviour—specifically: reduced idling, speeding, and unapproved after-hours use of vehicles. Given the government-wide scope of this initiative and need for consistency in monitoring, reporting, and remedial actions, we expected to find central guidance and monitoring of the AVL program.

We found there was no centralized oversight and reporting process of the AVL program. We based this conclusion on the following findings:

- No central authority for the program had been identified (**SECTION 3.1**).
- There was no reporting process to enable central monitoring (**SECTION 3.2**).
- There was no public reporting or analysis of program results (**SECTION 3.3**).

3.1   No central authority identified

While many core government entities indicated they use AVL data to identify incidents of driver non-compliance, and some entities have policies, the Province had not identified any central authority for the AVL program. As a result, there was no centralized oversight and direction of the AVL program.

In spring 2020, TBS established an inter-departmental working group to develop and implement a centralized policy and reporting template for the entities as well as a driver education and training framework.

We examined the draft policy and noted it:

- Identifies the roles and responsibilities of Deputy Ministers, entities, VEMA, Civil Service Commission, and employees who use fleet vehicles.
- Indicates AVL data should be monitored regularly (but does not define regularly).
- Clarifies that speeding and idling are to be monitored, and sets standards for expected behaviour.

The draft policy did not indicate a threshold entities should use for reporting to central government and for consistent follow-up and remedial action of driver non-compliance. It also did not define escalating remedial actions to be taken intended to correct non-compliant behaviour. We further noted that in a related draft framework guideline, it stated that departments should set their own speeding and idling rules for monitoring and analysis.

This policy was initially submitted to TBS in September 2020 for review and approval. As of March 2021, the policy had not been approved. See **SECTION 3.2** for a discussion of the reporting template. At the time of our audit the driver education and training framework was still under development.

Recommendation 4

We recommend that Treasury Board Secretariat, together with Civil Service Commission on human resource matters, promptly implement policy guidance for core government entities with fleet vehicles that defines:

- Roles and responsibilities for using vehicles with AVL devices and the related data.
- Non-compliant driver behaviour.
- Processes for monitoring and following-up non-compliant driver behaviour, including standardized speeding and idling rules for Geotab reports.
- Escalating remedial actions intended to correct non-compliant behaviour.

Recommendation 5

We recommend that Treasury Board Secretariat ensure all core government entities using fleet vehicles implement the policy guidance referred to in **RECOMMENDATION 4**.

3.2   No reporting process to enable central monitoring

Effective January 2019, TBS required all departments to submit quarterly reporting on vehicle usage. However, no further guidance was given in terms of what AVL related information, if any, should be reported to TBS. Officials we spoke to told us they were unclear on what AVL information should be reported, and were waiting for further instruction from TBS.

As of March 2021, TBS had updated the quarterly reporting template to be used by departments. This template includes AVL data on incidents of speeding and idling, as well as after-hours use for vehicles not assigned to specific employees. TBS staff indicated the plan was to have an approved template first used by departments in Spring 2021.

Core government entities should have clear direction on the information the central body needs to receive and the frequency. Consistent information from all entities would allow the central body to assess progress in meeting its AVL program goals.

Recommendation 6

We recommend that Treasury Board Secretariat clearly communicate to all core government entities with fleet vehicles a standardized reporting process for AVL data that allows the Secretariat to assess overall progress in achieving AVL program goals and objectives.

3.3   No public reporting or analysis of program results

At the time of our audit, there was no public reporting on the AVL program. We also noted there had been no government–wide analysis on progress towards achieving the program goals to obtain operational and financial efficiencies, and reduce greenhouse gas emissions.

We expected to find tracking and analysis of fuel consumption for vehicles with AVL devices. VEMA officials stated fuel consumption has been tracked since prior to the introduction of AVL devices, but officials could not determine what impact the AVL devices have had on fuel consumption. Officials told us this was because of a number of other factors impacting fuel usage, including a decrease in fleet size, decaling of AVL-equipped vehicles, and reduced vehicle usage due to COVID-19.

Within the 3 departments examined, little analysis had been done of incident data. We found no long-term analysis or analysis of any efficiencies gained since the AVL devices had been installed. The Department of Conservation and Climate had begun analyzing quarterly AVL data on speeding, idling, and after-hours use. They had also initiated analysis of speeding, idling and other data over a longer period to identify trends in departmental driving behaviour.

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OUR ANALYSIS OF AVL DATA

As the Province had not done government-wide analysis of AVL data to assess whether driver behaviour had improved since the installation of AVL devices, we did our own analysis. We examined data for the period September 2018 to September 2020. We note that the COVID-19 pandemic was occurring between March and September 2020, and may have caused changes in driver behaviours.

Speeding

Of all the vehicles in use by the 18 core government entities, there was a median number of speeding incidents per week of 2.03 from September 2018 to September 2020. However, one vehicle with the highest number of speeding incidents had 6,608 incidents recorded during this period, an average of 8.7 incidents per day.

Figure 3: Frequency of speeding incidents in core government entities declined between September 2018 and September 2020 (unaudited)
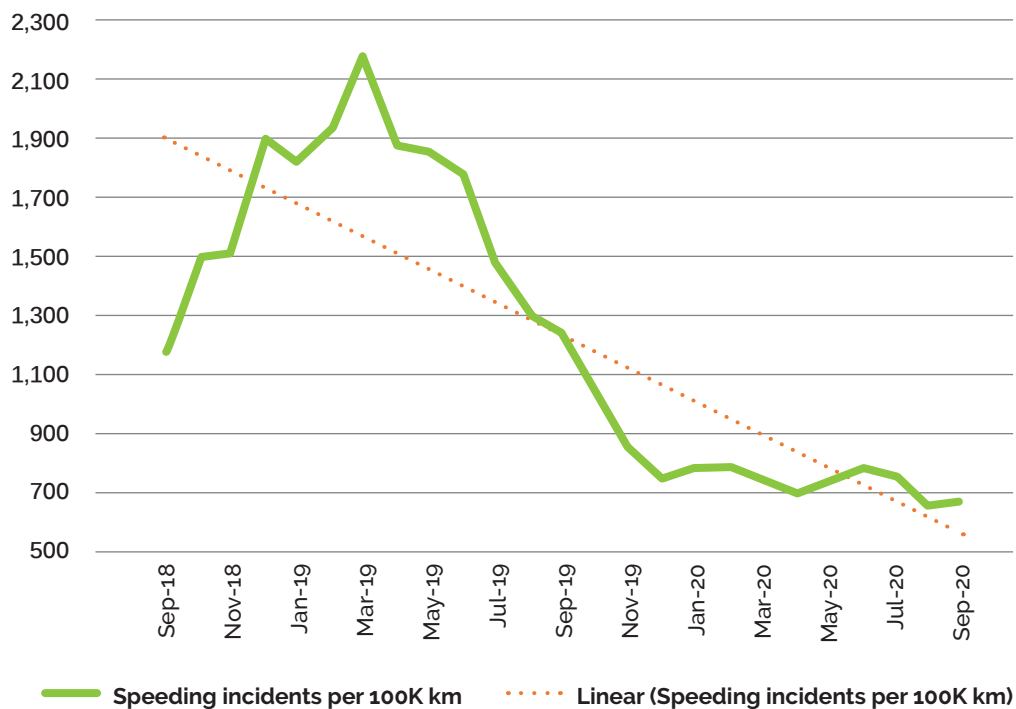
Speeding incidents per 100K km   Linear (Speeding incidents per 100K km)

Note: KMs driven data was provided by VEMA, based on self-reporting from vehicle users. This data may not be complete or accurate.
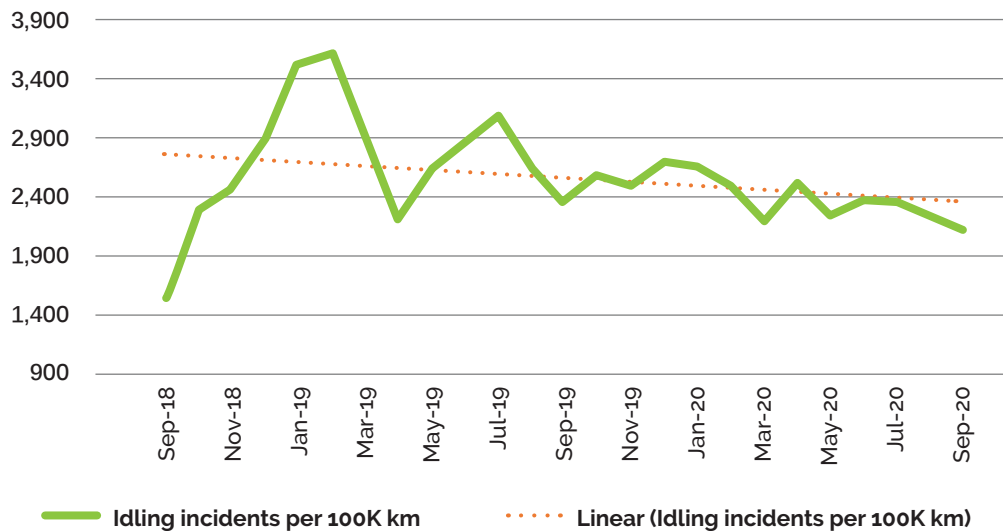
Source: Geotab AVL exception reporting for September 2018 – 2020, and OAG analysis

As shown above in **FIGURE 3**, from September 2018 (at which point AVL devices were installed in most light vehicles used by core government entities) to September 2020, there was a downward trend in the number of speeding incidents per 100,000 kilometers driven. Speeding incidents included in this analysis were those where the speed exceeded the limit by 15 km/h or more for 20 seconds or longer.

Idling

Vehicles in use by the 18 core government entities had a median number of idling incidents per week of 4.63 in the period examined. The vehicle with the highest number of idling incidents had 15,752 incidents recorded in the period, an average of 20.7 incidents a day.

Figure 4: Frequency of idling incidents in core government entities trended downward between September 2018 and September 2020 (unaudited)

Note: KMs driven data was provided by VEMA, based on self-reporting from vehicle users. This data may not be complete or accurate.

Source: Geotab AVL exception reporting for September 2018 – 2020, and OAG analysis

As shown above in **FIGURE 4**, between September 2018 and 2020, the data showed a downward trend (the dotted line) in idling incidents. Idling was defined as 5 minutes or more with no vehicle speed recorded as this is the standard report in Geotab.

Without completing a similar analysis regularly, the Province would not know whether the incidents were trending upward or downward, and therefore whether it was meeting its AVL program goals.

Recommendation 7

We recommend that Treasury Board Secretariat collect departmental AVL information (referred to in **RECOMMENDATION 6**) and periodically perform a government-wide analysis of changes in driver behaviour.

Recommendation 8

We recommend that the Province periodically publicly report on its progress towards achieving the intended impacts of the installation of AVL devices:

- Finding operational and financial efficiencies.
- Reducing environmental impacts.

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This independent assurance report was prepared by the Office of the Auditor General of Manitoba on the AVL Management Systems. Our responsibility was to provide objective information, advice and assurance to assist the Legislature in its scrutiny of the government's management of resources and programs, and to conclude on whether AVL Management Systems complies in all significant respects with the applicable criteria.

All work in this audit was performed to a reasonable level of assurance in accordance with the Canadian Standard for Assurance Engagements (CSAE) 3001—Direct Engagements set out by the Chartered Professional Accountants of Canada (CPA Canada) in the CPA Canada Handbook —Assurance.

The Office applies Canadian Standard on Quality Control 1 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 conducting the audit work, we have complied with the independence and other ethical requirements of the Rules of Professional Conduct of Chartered Professional Accountants of Manitoba and the Code of Values, Ethics and Professional Conduct of the Office of the Auditor General of Manitoba. Both the Rules of Professional Conduct and the Code are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour.

In accordance with our regular audit process, we obtained the following from management:

1. Confirmation of management's responsibility for the subject under audit.
2. Acknowledgement of the suitability of the criteria used in the audit.
3. Confirmation that all known information that has been requested, or that could affect the findings or audit conclusion, has been provided.

Period covered by the audit

The audit covered the period from April 1, 2019 to September 30, 2020, and this is the period to which the audit conclusion applies. However, to gain a more complete understanding of the subject matter of the audit, we also examined certain matters preceding and subsequent to this audit coverage period.

Date of the audit report

We obtained sufficient and appropriate audit evidence on which to base our conclusion on April 20, 2021 in Winnipeg, Manitoba.

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In this section we provide the responses from Treasury Board Secretariat and the Departments of Families and Infrastructure, which chose to provide responses by recommendation. The Department of Conservation and Climate indicated it is supportive of the corporate approach of the recommendations. The Department of Central Services had no further comments.

RECOMMENDATION 1

We recommend that all core government entities with fleet vehicles regularly monitor AVL data for internal use, at minimum monthly, including speeding, idling, and after-hours use incidents.

Responses of officials:

Treasury Board Secretariat agrees with the recommendation.

Treasury Board (TB) has approved the AVL Policy and Framework, which has been incorporated into the General Manual of Administration. Per the Framework, all departments are required to collect Fleet Vehicle and AVL Data monthly and submit it to Treasury Board Secretariat quarterly on the centralized reporting template that has been developed for this purpose. The scope of the data includes all fleet vehicles owned by VEMA with AVL devices and include speeding and idling data as well as after-hours incidents.

Manitoba Infrastructure and Families agree with this recommendation and will continue to monitor the fleet vehicle usage on a monthly basis. Both departments will ensure that monitoring is consistent with central polices that Treasury Board implemented.

RECOMMENDATION 2

We recommend that all core government entities with fleet vehicles follow-up on incidents of driver non-compliance identified in their internal monitoring of AVL data, including documenting the reason(s) for the incident and any additional follow-up actions taken.

Responses of officials:

Treasury Board Secretariat is in agreement with the recommendation.

An AVL Monitoring Framework which includes a Safety Driving Action Plan has been developed and is incorporated into the General Manual of Administration.

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The Action Plan consists of four (4) levels of incidents with definition and action to take by management. The levels consist of:

1. Minor Occurrence – Employee exceed the speed limit longer than one minute or allows the vehicle to idle longer than five minutes on three separate occasions.
2. Minor Occurrence Continuously Repeated- Employee has continuously repeated minor occurrence and has met with the supervisor at least once.
3. Harmful Occurrence – Employee continues to speed or idle vehicles greater than the guideline after corrective action.
4. Dangerous Occurrence – Employee exhibits dangerous or reckless behaviour. This may be detected by AVL technology or the employee may have an at fault vehicle collision.

Departments will be required to set up email notifications through the AVL system to be sent to managers/supervisors who are required to monitor and investigate driving behaviours.

Each level of the action plan requires the manager/supervisor to act immediately with progressive action with the employee. All incidents are documented and all follow-up action from the manager/supervisor is documented.

Manitoba Infrastructure and Families agree with this recommendation and will continue to follow-up on incidents of driver non-compliance identified in the internal monitoring of AVL data, including documenting the reason (s) for the incident and other follow-up actions taken.

RECOMMENDATION 3

We recommend that all core government entities with fleet vehicles take remedial actions as necessary for driver non-compliance, in accordance with policies implemented in **RECOMMENDATION 4**.

Responses of officials:

Treasury Board Secretariat is in agreement with the recommendation.

An AVL Monitoring Framework which includes a Safety Driving Action Plan has been developed and is incorporated into the General Manual of Administration.

Actions are set out and correspond to the four levels as part of the AVL Action Plan (referenced above in the comments pertaining to Recommendation 2) in which for any of the occurrences, supervisors and managers are responsible for taking immediate action by assessing the risk that the employee's behaviour creates to government or the public and take appropriate action in consultation with Human Resources, Workplace Safety and Health, or others as required.

Appropriate actions could include coaching, direction, or disciplinary action up to and including dismissal.

The Framework requires Managers/Supervisors to review the monitoring reports and email notifications regularly and act immediately when alerted to unsafe driving behaviours, investigate the infractions and proceed with necessary corrective actions. If required Managers/Supervisors may take added disciplinary action under *The Civil Service Act.*

Manitoba Infrastructure and Families agree with this recommendation and will continue to take remedial actions, as necessary for driver non- compliance, in accordance with central policies that Treasury Board Secretariat implemented.

RECOMMENDATION 4

We recommend that Treasury Board Secretariat, together with Civil Service Commission on human resource matters, promptly implement policy guidance for core government entities with fleet vehicles that defines:

- Roles and responsibilities for using vehicles with AVL devices and the related data.
- Non-compliant driver behaviour.
- Processes for monitoring and following-up non-compliant driver behaviour, including standardized speeding and idling rules for Geotab reports.
- Escalating remedial actions intended to correct non-compliant behaviour.

Responses of officials:

Treasury Board Secretariat is in agreement with the recommendation.

Policy has been developed and is incorporated into the General Manual of Administration that establishes expectations for AVL data usage and monitoring of all fleet vehicles with installed AVLs by VEMA. This includes roles and responsibilities for using vehicles with AVL devices, non- compliance, and an AVL Monitoring Framework.

The Civil Service Commission has reviewed and approved the AVL Policy and Monitoring Framework that is incorporated into the General Manual of Administration.

The Framework requires Managers/Supervisors to review the monitoring reports and email notifications regularly and act immediately when alerted to unsafe driving behaviours, investigate the infractions and proceed with necessary corrective actions. If required Managers/Supervisors may take added disciplinary action under *The Civil Service Act.*

RECOMMENDATION 5

We recommend that Treasury Board Secretariat ensure all core government entities using fleet vehicles implement the policy guidance referred to in **RECOMMENDATION 4**.

Responses of officials:

Treasury Board Secretariat agrees with the recommendation.

Treasury Board approved the AVL Policy and Monitoring Framework. The new policy is being communicated to departments in two ways:

- Incorporation into the General Manual of Administration (GMA). All revisions and additions to the GMA are recorded in section 1.1 Record of Revision at the front of the GMA.
- A memo from Treasury Board Secretariat to all Deputy Ministers and EFOS advising them of the new policy and reporting requirements.

Any future updates will be communicated in a similar manner.

RECOMMENDATION 6

We recommend that Treasury Board Secretariat clearly communicate to all core government entities using fleet vehicles a standardized reporting process for AVL data that allows the Secretariat to assess overall progress in achieving AVL program goals and objectives.

Responses of officials:

Treasury Board Secretariat is in agreement with the recommendation.

The AVL Policy conveys the goals of AVL usage to promote compliance with Manitoba policies and laws, including *The Manitoba Highway Traffic Act*, *The Workplace Safety and Health Act* and the *Climate and Green Plan Act*.

Treasury Board Secretariat has developed a centralized reporting template for use by each department to report their quarterly AVL information. The requirement to report their standard AVL data to Treasury Board Secretariat is communicated to Departments both through the General Manual of Administration and through a memo from the Secretary to Treasury Board.

The use of AVL is also expected to achieve operational and financial efficiencies. Treasury Board Secretariat will use the data obtained through the quarterly reporting to determine if the goals of the AVL program are being met. Treasury Board Secretariat will report to Treasury Board on achievement of these goals through the AVL Quarterly Data Report, which

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departments review monthly and Treasury Board Secretariat receives quarterly. Measures in the report include:

a. reduction in greenhouse gas emissions
b. reduction in air pollution from vehicles and equipment exhaust
c. promotion of energy conservation
d. reduction of fuel costs
e. reduction of wear and service needs of vehicles

RECOMMENDATION 7

We recommend that Treasury Board Secretariat collect departmental AVL information (referred in RECOMMENDATION 6) and periodically perform a government-wide analysis of changes in driver behaviour.

Responses of officials:

Treasury Board Secretariat agrees with the recommendation.

Treasury Board Secretariat has developed the centralized reporting template that departments will use to report their quarterly data. This template will allow for the analysis of:

• Driver behaviours incidents of speeding and excessive idling.
• Actions taken by managers/supervisors under the Safe Driving Action Plan.
• Exceptions Report for speeding and idling.

Treasury Board Secretariat will use the analysis from the report to propose amendments to Treasury Board that may be required under the Policy.

There is currently an Organizations and Staff Development course being developed for safety driving that will be mandatory for all new employees who are assigned to fleet vehicles. The course will not be included in the Policy when it is taken to Treasury Board in May for approval and subsequently integrated into the General Manual of Administration but will form part of a later version of the Policy.

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RECOMMENDATION 8

We recommend that the Province periodically publicly report on its progress towards achieving the intended impacts in the installation of the AVL devices:

- Finding operational and financial efficiencies.
- Reducing environmental impacts.

Responses of officials:

TBS agrees with the recommendation.

Previously noted centralized reporting template will be collecting data that will provide financial and environmental efficiencies.

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Office of the Auditor General – Survey of core government entities with light-duty vehicles

1. Please describe (at a high-level) your responsibilities with respect to your department's fleet vehicles.

2. Who runs reports related to your fleet vehicles in the department?

3. What are the parameters, if any, used in running reports to monitor vehicle usage, in relation to:

   - Speeding (For example, how many km over the speed limit? How long at the higher speed? How far travelled?)
   - Idling (How long?)
   - After hours usage (What time is used as the basis for identifying after hours usage?)

4. What other data, if any, does the department monitor?

5. Does the department have any policies or procedures in place for governing the use of fleet vehicles by its staff?

6. How often are reports obtained from Geotab?

7. What is done with the reports after they are run?

8. Does anybody else see the reports other than you? If so, who?

9. Do you or anybody else in your department ever follow-up with staff as a result of information found in the AVL data?

   - If so, when would there be follow-up?
   - Who does this follow up?
   - What procedures or process do they perform to follow-up?
   - How often does this happen?
   - Would we be able to see documentation showing this taking place?

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