Manitoba
Transportation and Infrastructure

Final Report - Prolaser 4 Lidar Speed Timing Devices for Commercial Vehicle Safety in Manitoba

Manitoba Motor Carrier Enforcement (MMCE)

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Executive Summary

Manitoba continues to experience ongoing challenges in reducing fatalities and serious injuries associated with commercial vehicle operations. Although many carriers consistently demonstrate a strong commitment to safety and responsible fleet management, there is a growing subset of operators whose practices do not align with established safety expectations. Contributing factors such as distracted driving, aggressive driving, speeding, and impaired driving remain among the most significant behaviours elevating collision risk across the province.

The project focused on commercial vehicle drivers and vehicles operating above the posted speed limit in restricted speed areas (⩽ 50 km/h), modified speed zones (50–90 km/h), maximum permitted speed zones (> 90 km/h), and designated construction zones and school zones with a goal of enhancing public safety.

The Prolaser 4 Light Detection and Ranging (LIDAR) speed timing device project equipped Manitoba Motor Carrier Enforcement (MMCE) officers with 24 speed timing devices deployed across the province to conduct speed enforcement on commercial vehicles. The acquisition of the devices assisted MMCE in addressing the increasing public concern of speeding commercial vehicles in Manitoba. Through the acquisition of the devices, MMCE was able to improve its speed enforcement program and improve capacity to detect other non-speed-related motor carrier safety infractions.

From April 2025 to December 2025, enforcement officers utilized the Prolaser 4 speed timing devices to detect commercial vehicles exceeding the speed limit. Aggregated data shows that 1,009 vehicles were stopped during the project for speeding. Analysis of the data reveals that, of the vehicles stopped for speeding, subsequent data collected revealed a significant increase in the number of fatigued drivers as well as the addition of mechanical defects on vehicles.

Key Findings:

1. Speed severity increased in designated construction zones
2. Fatigue related driving in commercial vehicle drivers was detected more often by the use of the speed timing device.
3. Vehicle safety defects were common on vehicles found exceeding reduced speed zones.
4. Stationary use of LIDAR speed timing devices limits enforcement capabilities for on-road enforcement officers.

Background

According to a recent Manitoba Public Insurance (MPI) province-wide study, speeding on Manitoba roads continues to be one of the top contributing factors in serious – and often deadly – collisions, with 40 per cent of vehicles found travelling above the posted speed limit. In fact, seven per cent of vehicles were travelling more than 10 kilometres above the posted speed limit. Excessive speed is the primary contributing factor in approximately 30 per cent of the highway fatalities that have occurred on Manitoba roads to date.

Manitoba continues to face challenges in reducing serious injuries and fatalities on its roadways. Among the most concerning behaviours contributing to collision risk are distracted driving, aggressive driving, and speeding.

Manitoba Motor Carrier Enforcement Officers (MCEOs) enforce commercial vehicle safety across 17 Highway Patrol areas and 8 highway traffic inspection stations. The specialized government law enforcement agency is the lead agency responsible for the enforcement of national safety code standards including Commercial Vehicle Safety Alliance (CVSA) mechanical and driver fitness inspections across the province.

Project Overview

The intended design of the project was to build enforcement capacity by applying safe and effective technologies to reduce collisions, injuries, and fatalities on Manitoba highways. The projectobjective included implementing a safe and effective LIDAR speed measuring device program to strengthen enforcement capacity against speeding and promote road safety.

MMCE acquired 24 fully equipped Prolaser 4 LIDAR speed timing devices that were deployed throughout the province to detect and take enforcement actions against commercial vehicles involved in high-risk driving behaviour. Through the acquisition of these devices, MMCE enhanced its speed enforcement program and improved its capacity to detect other non-speed-related motor carrier safety infractions.

Procured Prolaser 4 LIDAR speed timing devices were deployed and utilized throughout Manitoba on national trade corridors, strategic trade and commerce grids and locations that were identified as areas with high incidents of collisions. Thirty-seven MCEOs from different regions of the province were certified to operate the devices. MMCE developed and trained officers on the project parameters and related commercial vehicle speed policy. The devices were utilized by certified operators in restricted speed areas ($\leqslant$ 50 km/h), modified speed zones (50–90 km/h), maximum permitted speed zones (> 90 km/h), and designated construction zones and school zones with a goal of enhancing public safety. Certified operators recorded data and presented reports regarding the operational use of the devices, including number of vehicles tracked, warnings and tickets issued. Additional elements captured also included CVSA inspection results that would indirectly impact the agency's enforcement capacity for other carrier safety infractions.

The project collected commercial vehicle speed data from targeted vehicles in support of the safe system approach, Safe Roads, Safe Speeds, Safe Road Users and Safe Vehicles. Achievement of the project objectives was to evaluate the impact traditional speed enforcement and determine if enforcement actions, specifically convictions would be used to correct driver and motor carrier behaviour.

Methodology

Achievement of identified project objectives was assessed through two methods – quarterly reviews of enforcement statistics data collected by certified operators combined with the agency's existing record management and incident reporting framework. As part of its highway safety strategies, MMCE uses the Carrier Profile System (CPS system) and Traffic and Criminal Software (TraCS) database to manage records of accidents, inspections and convictions of highway incidents within Manitoba's borders, including incidents involving a motor carrier based in another Canadian jurisdiction. TRaCS is a data collection, records management and reporting software that is used for enforcement. It supports the CPS database and provides functionalities that allow MCEOs to generate electronic enforcement forms.

Results

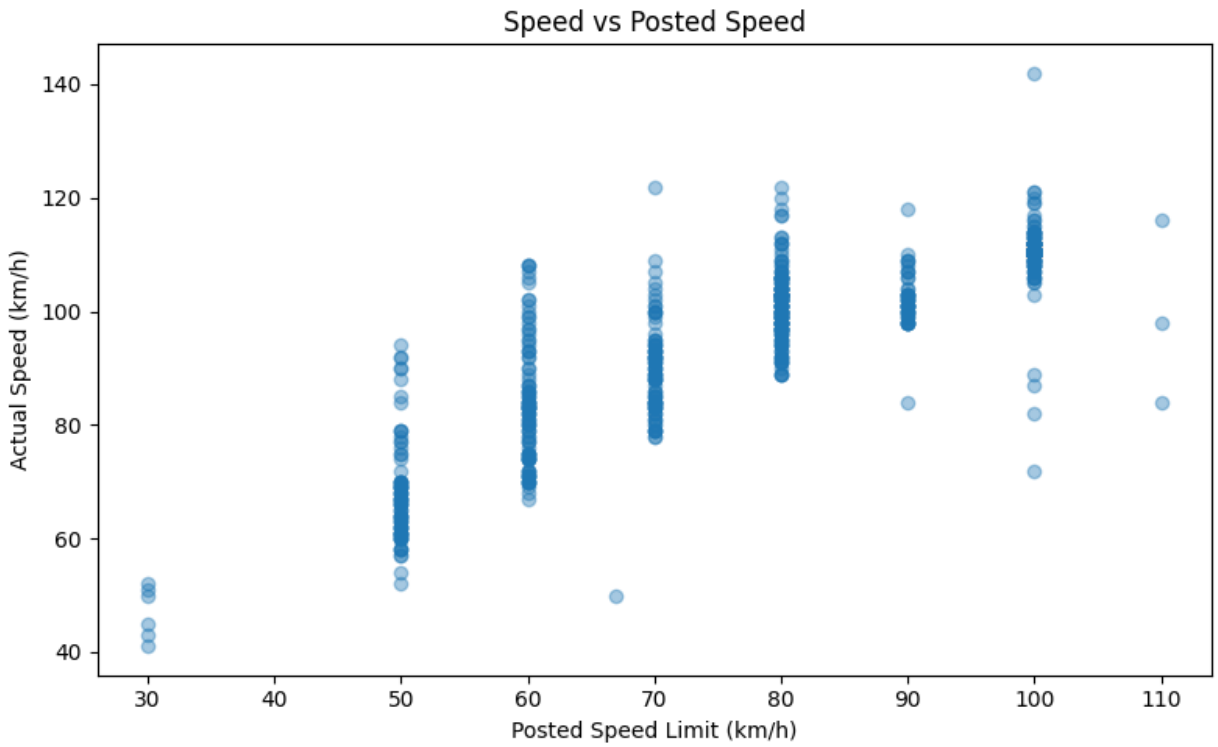
Motor Carrier Enforcement developed a commercial vehicle speed management policy which laid out the guidelines and standards for the project.

Exceeding the speed limit occurred across nearly all major corridors in Manitoba (PTH 1, 75, 101, 190, 110, 59, etc.) where extra-provincial and intra-provincial motor carrier undertakings operate. Data collected from the speed measurements frequently involved speeds 20–40 km/h above the posted limit, and even higher in some cases (e.g., 108 km/h in a 60 km/h designated construction zone). Construction and school zones also showed consistent speeding, despite heightened risk and signage.

The dataset showed a direct correlation between speeding and a high frequency of hours of service and electronic logging device (ELD) violations, including ELD tampering, incomplete or inaccurate records of duty status, missing information, drivers not certifying records and deliberate misrepresentation of hours. In one instance, a driver stopped for speeding was found to be in excess of 21 consecutive hours of driving.

Subsequent mechanical inspections as a result of speeding violations documented recurring mechanical issues, including anti-lock braking system malfunctions, inoperative lighting, air brake system failures, under-inflated or defective tires (exposed cords, low PSI, cracks). These defects lead to both failed inspections (must remedy within 24hours) and vehicle out-of-service orders (prohibition on operating). The failed or out-of-service inspections resulted in a direct impact to the motor carrier profile.

A total of 588 speeding tickets were issued throughout the project, resulting in $67,855 in fines levied. If convicted, the motor carrier profile will be assessed points based on the speed overage – one point (speeding 1-20 km/hour over posted limit), two points (speeding 21-30 km/hour over posted limit), and three points (speeding 31+ km/hour over posted limit).



Enforcement officers surveyed throughout the project indicated that while the stationary LIDAR speed timing devices increased their capacity to detect speeding violations, their ability to conduct effective speed measurements was limited in times of inclement weather (e.g., rain, snow). Enforcement officers expressed that stationary LIDAR also limited their ability to detect speeding violations of commercial vehicles when they were travelling to and from selected locations.

Enforcement officers indicate that with the addition of additional speed enforcement capabilities, driver compliance has increased over the term of the project in targeted areas.

Conclusions

That data produced by the Prolaser 4 Lidar Speed Timing Devices utilized within this province-wide project (aimed at enhancing Commercial Vehicle Safety in Manitoba) indicated significant and systemic non-compliance issues within the commercial vehicle landscape in Manitoba. The statistical data produced by the project also identified the following Key Risk Areas within the industry: speeding, hours of service/electronic logging device non-compliance, and mechanical-based infractions. Again, it should be noted that although many carriers consistently demonstrate a strong commitment to safety and responsible fleet / driver management, there is a growing subset of operators whose practices do not align with established safety expectations.

The dataset demonstrates high enforcement value, with numerous unsafe or non-compliant vehicles and drivers removed from service and a clear pattern of improvement opportunities for carriers and drivers.

Recommendations

1. Manitoba Motor Carrier Enforcement should consider implementing moving mode RADAR devices to detect further instances of speeding in the commercial vehicle transport sector.

   In-vehicle RADAR units are installed in highway patrol vehicles, allowing officers to monitor traffic flow while on the move. These systems can track approaching and receding vehicles, often in multiple lanes, and can operate while the patrol vehicle is stationary or moving, leading to increased interactions with drivers and motor carriers.

2. Manitoba should explore the viability of implementing heavy vehicle speed limiters on commercial vehicles that operate in Manitoba.

   For example, the introduction of speed limiters set at 105 kph increases safety in the uncongested region of traffic flow.

3. Manitoba should work with the Canadian Council of Motor Transport Administrators (CCMTA) to implement a national fatigue driving public awareness campaign targeting commercial vehicle drivers and motor carriers.

   This measure is intended to mitigate the risks associated with fatigued commercial vehicle drivers and identify practical solutions nationwide to protect commercial vehicle drivers and motor carriers.