

Cannabis and Drug-Impaired Driving – Small Business Innovation Challenge

Seeking Expressions of Interest for the Following Eligible Stages:

- Phase 1: Feasibility Stage
- Phase 2: Product Development & Demonstration Stage

Problem Statement:

Drug-impaired driving is a growing threat to the safety of road users in Ontario and abroad. The pending legalization of recreational cannabis use may result in an increase in drug-impaired driving and associated injuries and fatalities. While Ontario has several tools to combat drug-impaired driving, none are currently capable of rapidly and objectively determining drug-impairment under a wide variety of environmental conditions (e.g. weather, lighting, traffic) at the roadside. There is an opportunity for drug detection solutions that will provide an enforceable means of determining impairment by drugs (especially tetrahydrocannabinol [THC]) in drivers at or close-in-time to a driving event.

Outcomes and Considerations:

Areas for Innovation:

1. The proposed solution must detect (or provide an output that correlates to) an impairing level of THC in the blood in alignment with pending changes to the *Criminal Code* at roadside, and/or,
2. The proposed solution must determine that THC is present in the body due to recent cannabis use and provide a significant improvement (e.g. lower initial and ongoing costs, faster results, decreased training time and costs, improved reliability, etc.) to current solutions (such as oral fluid screening test) at roadside, and/or,
3. The proposed solution must detect (or provide an output that correlates to) an impairing level of THC in the blood in alignment with pending changes to the *Criminal Code* that provides a significant improvement (e.g. lower initial and ongoing costs, faster

results, decreased training time and costs, improved reliability, etc.) to the current process for determining drug-impairment away from the roadside.

- Enforceable:
 - The proposed solution must demonstrate the potential to be objective, reliable and defensible with enough supporting evidence to uphold a conviction
- User-friendly (easy to use, maintain and train users, safe to administer)
- Minimally intrusive (for recipient of test)
- Cost effective (affordable for users i.e. law enforcement officers)
- Robust (accuracy in various environments and weather conditions)

Background and Rationale:

- Road safety is a priority for the Government of Ontario and strives to be a world leader in safely moving people and goods.
- Impaired driving has a significant impact on road safety. Based on 2014 Ontario collision reports, 54 of the 517 total road fatalities (10.4%) involved drugs. Toxicological testing by the Office of the Chief Coroner indicates that 36% of fatally injured drivers had drugs in their system while driving.
- Impaired driving occurs not just with illegal drugs but also prescription and over-the-counter medications. It is the responsibility of the driver to ensure they do not drive while their ability is impaired, regardless of the substance.
- The federal government introduced draft legislation which will legalize, regulate and restrict access to cannabis with an expected implementation date of July 1, 2018¹. The federal government is proposing sanctions for cannabis impaired driving based on specific *per se* THC concentration thresholds in blood.
- Currently, if a driver is suspected to be impaired by drugs, a law enforcement officer can screen for impairment using behavioural tests and evaluations prescribed in the *Criminal Code*².
- A pilot study completed in Canada (including Ontario) determined that several existing and previously validated³ oral fluid screening devices were able to provide a reliable indication of the presence of drugs in a driver⁴. However, these devices cannot indicate the level of a drug in the blood (i.e., cannot indicate legal impairment relative to *per se* limits under the proposed *Criminal Code* changes), nor can they measure impairment directly.

¹ <https://www.canada.ca/en/services/policing/justice/legalization-regulation-marijuana.html>

² <http://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-196/page-1.html>

³ Douglas J. Beirness & D'Arcy R. Smith (2017) An assessment of oral fluid drug screening devices, Canadian Society of Forensic Science Journal, 50:2, 55-63.

⁴ Zach, K., & Huggins, R. (2017). *Final Report on the Oral Fluid Drug Screening Device Pilot Project*. Public Safety Canada, Royal Canadian Mounted Police, Canadian Council of Motor Transport Administrators.

- A solution that can provide an accurate measure of THC concentration in blood, or directly establish impairment due to drugs at or near the road-side, would enable law enforcement officers to rapidly collect objective and defensible evidence under proposed changes to the *Criminal Code*. Such a solution would also act as a deterrent to drivers considering driving while drug impaired.
- The market opportunity for a solution capable of determining drug impairment is growing alongside the legalization of cannabis globally.
- In addition to road-safety benefits, there may also be workplace safety benefits from innovative solutions developed through this challenge.

Additional Background:

Drug Recognition Expert 12-Step Procedure

The evaluation of a suspected drug impaired driver is conducted by an evaluator who is accredited by the International Association of Chiefs of Police, through the RCMP. The Drug Recognition Expert (DRE) uses a 12-step procedure in performing the evaluation.

<http://www.rcmp-grc.gc.ca/ts-sr/dree-eert-eng.htm>

Final Report on the Oral Fluid Drug Screening Device Pilot Project

This report contains further information on the methodology and results of the pilot project, as well as a summary of the recommendations for device standards, standard operating procedures and training guidelines. <https://www.publicsafety.gc.ca/cnt/rsrscs/pblctns/rl-fl-drg-scrnng-dvc-plt/index-en.aspx>

Questions and Answers - Proposed legislation to amend the *Criminal Code*: Impaired driving

<http://www.justice.gc.ca/eng/csj-sjc/pl/sidl-rlcfa/qa-gr.html>

Oral Fluid Standards and Evaluation Procedures

The Canadian Society of Forensic Science Drugs and Driving Committee has developed standards and evaluation procedures to recommend drug screening equipment for approval in

Canada. <https://www.csfs.ca/wp-content/uploads/2017/11/Approval-Standards-for-Drug-Screening-Equipment.pdf>