

# The Safety Network/ Le Réseau-Sécurité



**Issue 2 2018**

**Theme: Drug-Impaired Driving**

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## Editorial

### By Doug Bierness

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### New Measures for Drugs and Driving

On April 13, 2017, the Government of Canada introduced Bill C-45 (The Cannabis Act) to legalize the recreational use of cannabis, and Bill C-46 (An Act to amend the *Criminal Code*, offences relating to conveyances), which included provisions for dealing with the challenges associated with drug-impaired driving. The significance of the concurrent introduction of these two pieces of legislation reflects the extent to which the most immediate harm associated with the legalization of cannabis will be the result of people getting behind the wheel of a vehicle after using cannabis.

Driving under the influence of a drug has been a criminal offence in Canada since 1925. In 2008, amendments to the *Criminal Code* gave police greater powers to enforce drug-impaired driving by adding the Standardized Field Sobriety Test (SFST) and Drug Evaluation and Classification Program (DECP) as investigative procedures. Although these two programs have been shown to be effective in identifying drug impairment, they have been criticized as being expensive and time-consuming. The number of officers trained and certified as Drug Recognition Experts (DREs) is relatively small and insufficient to provide adequate coverage across all regions of the country. Hence, it is not surprising that there have been calls for more efficient tools to enhance the enforcement of drug-impaired driving laws. Bill C-46 includes provisions that would introduce roadside drug screening and establish *per se* limits for specific substances analogous to the 80 mg/dL limit for alcohol.

At this point, the most viable technology for roadside drug screening involves the collection of oral fluid to test for the presence of specific drugs. Drugs present in the body can enter the oral fluid through a natural process of excretion and partitioning. The rate and extent to which this occurs depends on the chemical properties of the drug. For example, methamphetamine and cocaine are transferred relatively well, but this is not the case for cannabis and benzodiazepines.

Drugs also enter the oral fluid from residue deposited in the oral cavity as a result of recent oral consumption. This includes smoking, a common method of ingesting cannabis, as well as certain forms of methamphetamine and cocaine. It is also possible for drugs to enter the oral fluid through passive inhalation of the smoke from others' use. Research has shown, however, that the detection of cannabis from passive exposure requires relatively high density of cannabis smoke, and that oral fluid concentrations are typically low and dissipate quickly. Although oral fluid drug screening has been shown to be extremely accurate in the detection of several substances of interest, it has limitations. For example, oral fluid drug screening only provides an indication of the presence of the drug in the body, not the concentration of the drug, nor an indication of the extent of impairment. Hence, a positive result can only be interpreted as presumptive evidence of recent drug use and not as evidence of the extent of use or impairment. Oral fluid screening also does not test for all substances. In Canada, oral fluid screening equipment will only test for the presence of cannabis (THC), cocaine, and

methamphetamine. Other methods (notably SFST and DECP evaluations) that test for behavioural impairment will remain the primary tools in the identification of drivers impaired by other substances.

A positive oral fluid screen will have to be confirmed with a blood test. Currently, a blood sample can only be taken under the supervision of a licensed medical practitioner. This generally requires that the suspect be taken to a hospital or other medical facility to have a sample drawn, or supervised by, a physician. This can introduce substantial delays, during which time drug levels can fall dramatically. Bill C-46 would allow for blood samples to be drawn by qualified technicians, thereby increasing the pool of those eligible to collect samples and presumably reduce the delay between arrest and drawing a blood sample.

Bill C-46 also establishes *per se* limits for certain drugs analogous to the 80 mg/dL limit for alcohol. But, whereas the limit for alcohol was set on the basis of a solid foundation of experimental and epidemiological evidence showing impairment and increased crash risk at particular blood levels, the extent and consistency of the evidence for drugs is not always as clear. This is particularly true for cannabis, the effects of which can vary considerably among individuals. In addition, the effects of cannabis do not necessarily vary directly with blood drug levels, making it very difficult to make statements about the extent of impairment at a given blood level. Nevertheless, in the interests of public safety, the proposed legislation sets a lower limit of 2 ng/mL of THC in whole blood and an upper level of 5 ng/mL.

*Per se* limits are, in essence, a legal shortcut intended to simplify the investigation and adjudication of impaired driving cases. In the case of alcohol, *per se* limits have also been used to provide the public with rough guidelines as to the amount of alcohol consumption that will assist in keeping the level of risk within acceptable levels and thereby creating a general deterrent effect. Establishing *per se* limits for cannabis inevitably leads to questions about the amount of cannabis that can be smoked without going over the limit. The pharmacokinetics of cannabis would indicate that the best answer to this question is simple –none at all. Those who choose to use cannabis should wait.

Bill C-46 represents the most profound changes to impaired driving legislation since the introduction of the breathalyzer and *per se* limit for alcohol in 1969. At the same time, it is recognized that the measures proposed in Bill C-46 to deal with drugs and driving are neither perfect nor ideal. However, we cannot afford to do nothing. Bill C-46 represents a starting point. Over time, experience, research and technological innovation will foster improvements in our approaches and techniques to keep those who choose to use cannabis or other drugs off the roads.

## Éditorial

### Par Doug Bierness

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### Des nouvelles mesures pour la conduite sous l'influence de drogues

Le 13 avril 2017, le gouvernement du Canada a présenté le projet de loi C-45 (loi sur le cannabis) pour légaliser l'usage récréatif du cannabis, ainsi que le projet de loi C-46 (loi modifiant le Code criminel sur les infractions relatives aux moyens de transport), dans le but de faire face aux défis associés à la conduite avec les facultés affaiblies par les drogues. L'importance de l'introduction simultanée de ces deux textes de loi reflète le fait que la conséquence la plus immédiate associée à la légalisation du cannabis sera que des personnes prendront le volant après en avoir consommé.

La conduite sous l'influence de drogues est une infraction criminelle au Canada depuis 1925. En 2008, des modifications au Code criminel ont conféré à la police plus de pouvoirs pour contrôler la conduite avec les facultés affaiblies en ajoutant le test de sobriété normalisé (TSN) administré sur place et le Programme d'évaluation et de classification de drogues (PECD) en tant que procédures d'enquête. Bien que ces deux programmes se soient avérés efficaces pour identifier les facultés affaiblies par les drogues, ils ont été critiqués comme étant coûteux, en argent comme en temps. Le nombre d'agents formés et certifiés en tant qu'experts en reconnaissance de drogues (ERD) est relativement faible et insuffisant pour assurer une couverture adéquate dans toutes les régions du pays. Par conséquent, il n'est pas surprenant qu'il y ait eu des appels en faveur d'outils plus efficaces pour améliorer l'application des lois sur la conduite avec les facultés affaiblies par les drogues. Le projet de loi C-46 comprend des dispositions qui introduiraient le dépistage des drogues sur la route et établiraient des limites *per se* pour des substances spécifiques comparables avec la limite de 80 mg/dL pour l'alcool.

Actuellement, la technologie la plus viable pour le dépistage des drogues au bord de la route implique la collecte de liquide buccal pour tester la présence de drogues spécifiques. Les drogues présentes dans le corps peuvent pénétrer dans le liquide buccal par un processus naturel d'excrétion et de séparation. Le taux et la mesure dans laquelle cela se produit dépend des propriétés chimiques de la drogue. Par exemple, la méthamphétamine et la cocaïne sont relativement bien transférées, mais ce n'est pas le cas pour le cannabis et les benzodiazépines.

Les drogues pénètrent également dans le liquide buccal à partir des résidus déposés dans la cavité buccale à la suite d'une consommation orale récente. Cela comprend le tabagisme, une méthode courante d'ingestion de cannabis, ainsi que certaines formes de méthamphétamine et de cocaïne. Il est également possible que les drogues pénètrent dans le liquide buccal par inhalation passive de la fumée des autres. Cependant, la recherche a montré que la détection du cannabis à partir d'une exposition passive nécessite une densité relativement élevée de fumée de cannabis, et que les concentrations de fluides buccaux sont généralement faibles et se dissipent rapidement.

Bien que le dépistage des drogues par voie orale se soit avéré extrêmement précis dans la détection de plusieurs substances d'intérêt, il présente des limites. Par exemple, le dépistage des drogues par voie orale ne fournit qu'une indication de la présence de la substance dans le corps, et

non de sa concentration, ni du niveau des facultés affaiblies. Par conséquent, un résultat positif ne peut être interprété que comme une présomption de consommation récente de drogue et non comme une preuve de l'étendue de l'usage ou des facultés affaiblies. En plus, le dépistage des liquides par voie orale ne teste pas toutes les substances. Au Canada, l'équipement pour ce niveau de dépistage ne testera que la présence de cannabis (THC), de cocaïne et de méthamphétamine. D'autres méthodes (notamment les évaluations TSN et PECD) qui testent les changements de comportement resteront les principaux outils d'identification des conducteurs ayant consommés d'autres substances.

Un test de dépistage par voie orale positif devra être confirmé par un test sanguin. Actuellement, un échantillon de sang ne peut être prélevé que sous la supervision d'un médecin autorisé. Cela exige généralement que le suspect soit emmené à l'hôpital ou dans un autre établissement médical pour qu'un échantillon soit prélevé ou supervisé par un médecin. Cela peut entraîner des retards importants, au cours desquels les niveaux des drogues peuvent chuter de façon radicale. Le projet de loi C-46 permettrait aux techniciens qualifiés de prélever des échantillons de sang, ce qui augmenterait le nombre de personnes habilitées pour la collecte d'échantillons et réduirait vraisemblablement le délai entre l'arrestation et le prélèvement d'un échantillon de sang.

Le projet de loi C-46 établit également des limites *per se* pour certaines drogues analogues à la limite de 80 mg/dL pour l'alcool. Toutefois, alors que la limite pour l'alcool a été établie sur la base de preuves expérimentales et épidémiologiques montrant une altération et un risque accru d'accident routier à des niveaux sanguins particuliers, l'étendue et la cohérence des preuves pour les drogues ne sont pas toujours aussi claires. Cela est particulièrement vrai pour le cannabis, dont les effets peuvent varier considérablement d'un individu à l'autre. En outre, les effets du cannabis ne varient pas nécessairement directement avec les taux des drogues sanguines, ce qui rend très difficile de faire des affirmations sur le niveau des facultés affaiblies à un niveau sanguin donné. Néanmoins, dans l'intérêt de la sécurité publique, la législation proposée fixe une limite inférieure de 2 ng/mL de THC dans le sang total et une limite supérieure de 5 ng/mL.

Les limites *per se* sont, dans l'ensemble, un raccourci légal visant à simplifier les enquêtes et les jugements dans les affaires de conduite avec les facultés affaiblies. Dans le cas de l'alcool, les limites *per se* ont également été utilisées pour fournir au public des lignes directrices générales quant à la quantité de consommation d'alcool qui aidera à maintenir le niveau de risque à un niveau acceptable et à créer ainsi un effet dissuasif général. Établir des limites *per se* pour le cannabis nous amène inévitablement à des questions sur la quantité qui peut être consommée sans dépasser la limite. La pharmacocinétique du cannabis indiquerait que la meilleure réponse à cette question est simple: pas du tout. Ceux qui choisissent de l'utiliser devraient attendre.

Le projet de loi C-46 représente les changements les plus profonds à la législation sur la conduite avec les facultés affaiblies depuis l'introduction de l'alcootest et la limite *per se* pour l'alcool en 1969. En même temps, il est reconnu que les mesures proposées dans le projet de loi C-46 pour faire face aux drogues et à la conduite ne sont ni parfaites, ni idéales. Cependant, nous ne pouvons pas nous permettre de ne rien faire. Le projet de loi C-46 constitue un point de départ. Au fil du temps, l'expérience, la recherche et l'innovation technologique favoriseront l'amélioration de nos approches et techniques pour que ceux qui choisissent de consommer du cannabis ou d'autres drogues ne soient pas au volant.

## Cannabis Legislation – Summary of Provincial & Territorial Changes

**By Pamela Fuselli and Sabrina Moffat**

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### Résumé

En juillet 2018, le gouvernement fédéral Canadien devrait légaliser le cannabis récréatif. De nombreux organismes, professionnels et défenseurs de la sécurité routière s'inquiètent du risque accru de conduite avec facultés affaiblies par les drogues que cela pourrait engendrer. Au printemps 2017, le gouvernement du Canada a présenté une loi qui renforcerait les lois sur la conduite avec facultés affaiblies et aiderait à mieux protéger le public contre la conduite avec facultés affaiblies par l'alcool et les drogues. Cela inclut des mesures visant à faciliter les tests et les poursuites en matière de drogue et à proposer des limites légales pour le THC. Certaines provinces ont même renforcé leurs lois sur la conduite avec facultés affaiblies par la drogue pour mieux s'aligner sur les nouvelles mesures établies par le gouvernement fédéral et se préparer à la légalisation du cannabis. Voici un aperçu de ces changements.

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In July 2018, the federal government of Canada is set to legalize recreational cannabis. This has many road safety organizations, professionals and advocates concerned about an increased risk for drug-impaired driving. In the spring of 2017, the Government of Canada introduced legislation that would strengthen impaired driving laws and help ensure the public is better protected from both alcohol and drug-impaired driving. This includes measures to make drug testing and prosecution easier, and proposed legal limits for tetrahydrocannabinol (THC).

### Federal Bill C-45 (Cannabis Act)

An Act respecting cannabis and to amend the *Controlled Drugs and Substances Act*, the *Criminal Code* and other Acts

- Main enactment is providing legal access to cannabis and to control and regulate how cannabis is produced, distributed and sold
- Cannabis will no longer be considered illegal as a Schedule II Drug, under the *Controlled Drugs and Substances Act*

### Federal Bill C-46

An Act to amend the *Criminal Code* (offences relating to conveyances) and to make consequential amendments to other Acts

- Proposes amendments to the *Criminal Code* regarding drug impaired driving
- Gives the Attorney General of Canada the authority to approve drug screening equipment
- The proposed levels of tetrahydrocannabinol (THC) and its associated offences are:

2 nanograms (ng) but less than 5ng of THC per 1 millilitre (ml) of blood	Maximum \$1,000 fine	
5 ng or more of THC per 1ml of blood <sup>1</sup>  <b>OR</b>  2.5 ng or more of THC per 1ml of blood and 50 milligrams (mg) of alcohol per 100ml of blood <sup>1</sup>	First offence	Minimum \$1,000 fine
	Second offence	Mandatory imprisonment for 30 days
	Third and subsequent offence	Mandatory imprisonment for 120 days

<sup>1</sup>Hybrid offences are offences that can be prosecuted either by indictment, in more serious cases, or by summary conviction

Some provinces have strengthened their drug-impaired driving laws to better align themselves with the new measures set forth by the federal government and prepare for the legalization of cannabis. The following provides an overview of these changes.

PROVINCIAL AND TERRITORIAL CANNABIS AND DRIVING LEGISLATION			
Province or Territory	Consumption While in a Vehicle	Where Zero Tolerance Applies	Where Zero Tolerance Does Not Apply
<p><b>Alberta</b> Bill 26: An Act to Control and Regulate Cannabis  Bill 29: An Act to Reduce Cannabis and Alcohol Impaired Driving</p>	The use of cannabis in vehicles is prohibited, unless the vehicle is a temporary residence (Bill 26, s.90.24)	<p>Drivers in the <a href="#">Graduated Driver Licensing (GDL)</a> program (Bill 29, s.4)</p> <p>A minor, under 18 years of age (Bill 26, s.3)</p>	Non-GDL drivers, subject to Bill C-46 limits
<p><b>British Columbia</b> Proposed Bill 30: Cannabis Control and Licensing Act (CCLA)  <i>Motor Vehicle Act</i></p>	The consumption of cannabis is prohibited while (i) operating a vehicle or (ii) in a vehicle being operated by another person (Bill 30, s.65)	<p>Drivers in the <a href="#">Graduated Licensing Program (GLP)</a> (<i>Motor Vehicle Act</i> s.215(3))</p> <p>A minor, under 19 years of age (Bill 30, s.73)</p>	Non-GLP drivers, subject to Bill C-46 limits
<p><b>Manitoba</b> Bill 25: The Cannabis Harm Prevention Act (Various Acts Amended)  <i>The Highway Traffic Act</i>  Proposed Bill 26: The Impaired Driving</p>	The consumption of cannabis in or on a vehicle is prohibited, unless a motor home and being used as a private dwelling (Bill 25, s.9) ( <i>Highway Traffic Act</i> , s.213.2)	<p>Novice drivers (Bill 26, s.2(5))</p> <p>A young person, under 19 years of age (Bill 11, s.101.18)</p>	Non-novice drivers, subject to Bill C-46 limits

<b>PROVINCIAL AND TERRITORIAL CANNABIS AND DRIVING LEGISLATION</b>			
<b>Province or Territory</b>	<b>Consumption While in a Vehicle</b>	<b>Where Zero Tolerance Applies</b>	<b>Where Zero Tolerance Does Not Apply</b>
<p>Offences Act</p> <p>Proposed Bill 11: The Safe and Responsible Retailing of Cannabis Act</p>			
<p><b>New Brunswick</b></p> <p>Bill 16: Cannabis Control Act</p>	<p>The consumption of cannabis or medical cannabis in or on a vehicle is prohibited (Bill 16, s.18(2))</p>	<p>Novice drivers and individuals under 21 years of age, due to <a href="#">proposed amendments</a> to the <i>Motor Vehicle Act</i></p> <p>A person under the age of 19 (Bill 16, s.17(3))</p>	<p>Not specified</p>
<p><b>Newfoundland &amp; Labrador</b></p> <p>Proposed Bill 20: An Act Respecting the Control and Sale of Cannabis (Cannabis Control Act)</p> <p>Proposed Bill 23: An Act to Amend the <i>Highway Traffic Act</i></p>	<p>The consumption of cannabis in or on a vehicle or boat is prohibited, unless it is being used as a dwelling house (Bill 20, s.75)</p>	<p>Novice drivers, drivers under 22 years of age and commercial drivers, due to <a href="#">proposed amendments</a> to the <i>Highway Traffic Act</i> (Bill 23)</p> <p>A person under 19 years of age (Bill 20, s.66)</p>	<p>Non-novice drivers, drivers 22 years and older, non-commercial drivers, subject to Bill C-46</p>
<p><b>Northwest Territories</b></p> <p>Proposed Bill 6: Cannabis Legalization and Regulation Implementation Act</p>	<p>The consumption or use of cannabis in a vehicle is prohibited (Bill 6, s.9)</p>	<p>Novice drivers, drivers under 22 years of age, and operators of commercial vehicles</p> <p>A minor (under 19) or an intoxicated person (Bill 6, s.3)</p>	<p>Non-novice drivers, drivers 22 years and older, non-commercial drivers, subject to Bill C-46 (RCMP enforces impaired driving laws in NWT)</p>
<p><b>Nova Scotia</b></p> <p>Bill 108: Cannabis Control Act</p>	<p>The consumption of cannabis or medical-use cannabis in a vehicle is prohibited (Bill 108, s.22)</p>	<p>Novice drivers (Bill 108, s.63)</p> <p>A young person (under 19) (Bill 108, s.16)</p>	<p>Not specified</p>

<b>PROVINCIAL AND TERRITORIAL CANNABIS AND DRIVING LEGISLATION</b>			
<b>Province or Territory</b>	<b>Consumption While in a Vehicle</b>	<b>Where Zero Tolerance Applies</b>	<b>Where Zero Tolerance Does Not Apply</b>
<p><b>Nunavut</b>                      Proposed Bill 3: Cannabis Statutes Amendment Act</p> <p>Proposed Bill 7: Cannabis Act</p>	<p>The consumption of cannabis in or on a vehicle on a highway is prohibited (Bill 3, s.6)</p>	<p>Novice drivers, drivers under 19 years of age, and operators of commercial vehicles (Bill 7, s.68)</p> <p>A minor (under 19) (Bill 7, s.31)</p>	<p>Non-novice drivers, driver 19 years and older, non-commercial drivers, subject to Bill C-46</p>
<p><b>Ontario</b>  <b>Bill 174: Cannabis, Smoke-Free Ontario and Road Safety Statute Law Amendment Act</b></p>	<p>The consumption of cannabis in a vehicle is prohibited (Bill 174, Schedule 1, s.11)</p>	<p>Novice drivers, drivers under 22 years of age, and operators of commercial vehicles (Bill 174, Schedule 4, s.5 and s.8)</p> <p>A minor (under 19) (Bill 174, Schedule 1, s.10)</p>	<p>Non-novice drivers, drivers 22 years and older, non-commercial drivers, subject to Bill C-46</p>
<p><b>Prince Edward Island</b>                      Proposed Bill 29: An Act to Respond to the Legalization of Cannabis</p>	<p>The consumption of cannabis or medical use cannabis in or on a vehicle is prohibited (Bill 29, Schedule 1, s.14)</p>	<p>Drivers under the age of 19 and graduated drivers under the age of 22 (does not apply to people who, on the date the bill comes into force, are over the age of 19 or hold a driver's license--once they turn 19) (Bill 29, Schedule 3, s.3)</p> <p>A person under 19 years (Bill 29, Schedule 1, s.13)</p>	<p>Non-novice drivers and graduated drivers 22 years and older, subject to Bill C-46</p>
<p><b>Quebec</b>  <b>Bill 157: An Act to constitute the Société québécoise du cannabis, to enact the Cannabis Regulation Act and to amend various highway safety-related provisions</b></p>	<p>The consumption of cannabis in a road vehicle is prohibited (Bill 157, s. 53)</p> <p>The consumption of cannabis while riding a bicycle is prohibited (Bill 157, s.54)</p>	<p>All drivers (Bill 157, s.37)</p>	<p>N/A</p>

<b>PROVINCIAL AND TERRITORIAL CANNABIS AND DRIVING LEGISLATION</b>			
<b>Province or Territory</b>	<b>Consumption While in a Vehicle</b>	<b>Where Zero Tolerance Applies</b>	<b>Where Zero Tolerance Does Not Apply</b>
<b>Saskatchewan</b> Bill 121: The Cannabis Control (Saskatchewan) Act  Bill 122: The Miscellaneous Vehicle and Driving Statutes (Cannabis Legislation) Amendment Act	The consumption of cannabis in a vehicle is prohibited (Bill 121, s.2-10)	All drivers (Bill 122, s.3(6))	N/A
<b>Yukon</b> Bill 15: Cannabis Control and Regulation Act	Consumption not specified.  Driving or having care or control of a vehicle is prohibited when cannabis is present, unless prescribed requirements are met (Bill 15, s.56)	Drivers not specified  A young person (under 19) (Bill 15, s. 59)	N/A

*\*with regards to recreational cannabis, medical cannabis may have different provisions*

### **Current Status of legislation:**

Alberta:	Bill 26 & 29 received royal assent
British Columbia:	Bill 30 at third reading
Saskatchewan:	Bill 112, 121 received royal assent
Manitoba:	Bill 25 received royal assent, Bill 11 is going into third reading, and Bill 26 completed second reading
Ontario:	Bill 174 received royal assent
Quebec:	Bill 157 accepted
New Brunswick:	Bill 16 received royal assent
Nova Scotia:	Bill 108 received royal assent
Newfoundland:	Bill 20 & 23 completed second reading
Prince Edward Island:	Bill 29 completed second reading and in committee
Northwest Territory:	Bill 6 completed second reading
Nunavut:	Bill 3 completed second reading, Bill 7 completed first reading
Yukon:	Bill 15 received royal assent

## Traffic Injury Research Foundation's Drug-Impaired Driving Learning Centre

**By Heather Woods-Fry**

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### Résumé

La prévalence croissante de la conduite avec les facultés affaiblies par les drogues chez les conducteurs canadiens justifie d'y porter attention et de s'en préoccuper. Afin de soutenir les efforts des gouvernements et des acteurs en sécurité routière visant à prévenir et réduire la conduite avec les facultés affaiblies par les drogues, le Centre d'études sur la conduite avec facultés affaiblies par les drogues (CECFAD) a été créé. Le CECFAD synthétise les dernières recherches sur ce sujet et peut contribuer à augmenter l'éducation publique et à dissiper les mythes courants sur la conduite avec les facultés affaiblies par les drogues. Plus précisément, c'est une erreur de croire que les policiers n'ont pas les outils nécessaires pour détecter les conducteurs drogués lorsqu'ils les interceptent sur le bord de la route. Cependant, plusieurs outils sont déjà disponibles et utilisés par les organisations policières de certaines administrations, tel que le test de sobriété normalisé (TSN) pour détecter la détérioration du comportement. Outre le TSN, d'autres outils tels que les appareils de dépistage de drogue par voie orale, les éthylotests, les appareils mesurant le diamètre de la pupille et ses variations ainsi que ceux utilisant la transpiration comme base sont également explorés en détail.

Drug-impaired driving represents a major challenge to road safety professionals around the world. Increases in the proportion of drivers who self-report driving within two hours of consuming drugs, combined with increases in the proportion of drivers killed in road crashes who tested positive for drugs, warrant attention and concern. Research investigating drug-impaired driving has grown exponentially in the past few years and studies exploring this topic have been conducted across many disciplines including road safety, justice, health, and neuroscience to name a few.

To help consolidate the latest research, the Drug-Impaired Driving Learning Centre (DIDLC) was created by the Traffic Injury Research Foundation (TIRF) in partnership with Desjardins Insurance. The DIDLC

compiles and synthesizes the latest research in an accessible, user-friendly format that allows stakeholders and the public alike to find the latest facts, research and information about this topic. The resource can be accessed at:

<http://druggeddriving.tirf.ca/>

The DIDLC can help increase public education and raise awareness about the issue of drug impaired driving, and dispel common misperceptions surrounding this topic. For example, it is commonly believed that law enforcement do not have the tools and technology to detect drug-impaired drivers at the roadside. However, since 2008, police have had the ability to test drivers suspected of impairment using scientifically validated tests such as the Standard Field Sobriety Test (SFST). Furthermore, the Criminal Code of Canada was strengthened to include specially-

trained police officers, known as Drug Recognition Experts (DREs) who are trained to detect impairment among drivers.



Across North America, officers can stop a driver and conducts tests to determine impairment at the roadside in with reasonable suspicion that a driver is impaired before initiating a traffic stop (e.g., weaving, drifting or displaying reckless or aggressive behaviour). If police officers observe such behaviours, they can stop a driver to conduct an impaired driving investigation. Officers may observe additional signs of impairment during their interaction with a driver and will ask a driver to exit their vehicle and submit to further testing, which can include the Standard Field Sobriety Test (SFST), and bodily fluid samples.

The SFST is a battery of three tests, including the Horizontal Gaze Nystagmus (HGN), the walk-and-turn, and the one-leg stand tests. Each test is briefly described:

- **HGN.** Subjects are required to follow the movement of a small stimulus (such as the tip of a pen) by tracking the stimulus using only their eyes while keeping their head still. The test is completed in the left eye, followed by the right eye and officers observe each eye for clues of impairment.
- **Walk-and-Turn.** In the instruction stage, subjects must stand with their feet in heel-to-toe position with their arms at their sides, and listen to the

instructions. This assesses the subjects divided attention between listening to instructions and keeping their balance. In the walking stage, drivers must take nine heel-to-toe steps, turn, and take nine heel-to-toe steps back while counting steps out loud.

- **One Leg Stand.** In the instruction stage, drivers must listen to instructions while standing with feet together, keeping their arms at their side. This assesses divided attention, as subjects must maintain the posture and listen to instructions. In the balance and counting stage, drivers must raise one foot six inches off the ground. While looking at the elevated foot, drivers must count out loud until they are asked to stop.

If the SFST indicates impairment, officers test for alcohol using an Approved Screening Device (ASD). If alcohol is not detected, but officers observe evidence of impairment indicated by the SFST, a specially-trained Drug Recognition Expert (DRE) officer is summoned to further evaluate the driver for the presence of drugs, which occurs post-arrest at the local police station.

**Drug Recognition Expert (DRE).** The DRE evaluation of a suspected impaired driver consists of a standardized 12-step process designed to assess physical, cognitive and medical indicators. The evaluation includes: a breath alcohol test, an interview by the arresting officer, preliminary examination of the suspect, eye examinations, divided attention tests, vital signs examination, dark room examinations, examination of muscle tone, search for potential injection marks, suspect interview, an opinion by the DRE and the procurement of toxicological samples for analysis.

Based on the results of a complete evaluation, DRE officers can accurately determine whether a driver is impaired, and if so, whether this impairment is related to

drugs or a medical condition. DRE officers are highly skilled at detecting impairment due to drugs, and identifying the category or categories of drugs that are the source of the exhibited impairment with a high degree of accuracy.

**Oral fluid screening device.** Oral fluid devices may be used by officers at roadside to detect the presence of drugs, after which further confirmatory blood or urine tests are completed in the laboratory. However, oral fluid devices are not used to detect impairment, and are not a measure of impairment; instead they are designed to detect the presence of drugs in the body. Drivers are asked to provide a saliva sample which is collected from the mouth using an absorbent swab and analysed for the presence of drugs at specific cut-off values. These devices are non-invasive, easy-to-use, and provide rapid results. Many devices include a panel for several categories of drugs. Typical drug types included in the panel are cannabis, cocaine, methamphetamines, and opioids. There are more than 13 brands of oral fluid devices. Multiple studies have examined the sensitivity and specificity of oral fluid devices for specific classes of drugs. The sensitivity and specificity of each device may be better for detecting certain drugs over others. These devices have also been tested within the Canadian enforcement context, including testing the screening devices under a variety of climate conditions. This study concluded that oral fluid devices serve as a useful tool for Canadian law enforcement and proper training and standardized operating procedures will ensure officers can definitively detect the presence of drugs in suspected drivers.<sup>1</sup>

**Developing technologies.** New technologies, such as a breathalyser for cannabis, pupil measurement, and sweat-based devices are currently under development, however none of the following

technologies are ready for use at the roadside. A cannabis breathalyser, such as those being developed by Cannabix Technologies Inc. or Hound Labs Inc., would provide a sense of familiarity to drivers as well as law enforcement, as testing for alcohol with the use of breathalysers is commonplace. Pupil measurements to detect drug impairment are based off of similar testing done by a DRE officer. Companies such as Eyecheck have developed a pupilometer to detect signs of impairment by drugs such as marijuana, amphetamine, cocaine, tranquilizers, and heroin. Sweat-based testing devices can help detect recent drug use (<24 hrs), by analyzing a sweat sample collected from the subjects forehead. Sweat-based screening methods hold promise, as the test has the benefit of being administered at the roadside and is relatively un-intrusive, however, more research is needed to establish the sensitivity and specificity of such devices.

For additional information about the tools and technologies to detect drugged drivers, please visit:

<http://druggeddriving.tirf.ca/module/tools-technologies/>

Other factsheets on the following topics are also available at

<http://druggeddriving.tirf.ca/downloads/>:

- Drug-Impaired Driving in Canada
- Drug-Impaired Driving in United States
- Drug-Impaired Driving in Europe
- Drug-Impaired Driving in Australia
- Effects of Cannabis on Driving
- Effects of Central Nervous System Stimulants on Driving
- Effects of Central Nervous System Depressants on Driving
- Effects of Hallucinogens on Driving
- Effects of Inhalants on Driving
- Effects of Dissociative Anaesthetics on Driving
- Effects of Narcotic Analgesics on Driving

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<sup>1</sup> Keeping & Huggins 2017

## In-Vehicle Alcohol Detection

**By Alan German, Road Safety Research**

*Alan is a research physicist who has spent his career working in the field of road and motor vehicle safety. He is a Past President of CARSP and a current member of the association's Editorial Board.*

### Résumé

Les systèmes passifs embarqués dans les véhicules pour détecter l'alcool au volant sont en cours de développement depuis de nombreuses années. Entres autres, un programme de recherche aux États-Unis rassemble le gouvernement et l'industrie pour explorer la faisabilité, les avantages et les défis associés à l'utilisation de telles technologies embarquées.

Research on the Driver Alcohol Detection System for Safety (DADSS) is being undertaken collaboratively by the Automotive Coalition for Traffic Safety (ACTS), representing 17 automobile manufacturers, and the U.S. National Highway Traffic Safety Administration (NHTSA). The goal of the research is to assess and develop alcohol-detection technologies to prevent vehicles from being driven when a driver's blood alcohol concentration (BAC) exceeds the legal limit.

The research programme began in 2008 with the goal of assessing the feasibility and effectiveness of in-vehicle alcohol-detection technologies. Two methods of measuring absolute driver alcohol levels are under active consideration.

One system samples and analyzes breath exhaled by the driver. The driver simply enters the vehicle and breathes normally. The in-vehicle device draws some of the exhaled breath into a sensor that directs infrared light onto the sample and analyzes the responses at specific wavelengths. The system can detect both carbon dioxide and alcohol and uses their relative concentrations to determine the driver's BAC.

The second system uses a touch sensor and near-infrared spectroscopy to measure alcohol present in the driver's blood. The sensor shines infrared light onto the driver's skin, so penetrating the adjacent subcutaneous capillaries. A spectroscope is

used to probe the specific wavelengths in the reflected light at which alcohol can be detected and provides a measure of the driver's BAC.



*Takata-TruTouch non-invasive alcohol sensing system using near-infrared spectroscopy on the driver's finger*

ACTS developed stringent performance requirements for DADSS, stipulating high levels of accuracy and precision, as well as a fast measurement time, in order to ensure that the technologies would be unobtrusive and not pose any potential inconvenience to sober drivers. The initial phase of the research, completed in 2011, focused on the speed, accuracy and precision of the methodologies. A subsequent phase of the programme has been aimed at improving measurement performance while decreasing measurement time. Additional, laboratory-based, human-subject testing has been conducted to understand human interaction with the sensors, both physiologically and ergonomically, in order to assess how these technologies might operate in a vehicle environment.



In the next phase of the research programme, a number of prototype vehicles, equipped with the latest generation of sensing technologies, will be road tested in jurisdictions across the United States. The vehicles will be operated over a wide range of geographic and climatic conditions, and the tests will utilize drivers who are unfamiliar with the sensing systems. It is anticipated that this testing will identify the acceptability of the normally unobtrusive nature of the sensing technologies, allow evaluation of driver reactions to the mode of operation of the DADSS system should this be activated, and indicate any unforeseen problems that may arise in real-world operation.

The ultimate goal of the research is to prove DADSS to be a viable countermeasure to the problem of alcohol-impaired driving. The system must be shown to be capable of accurately detecting drivers who have a BAC at or above the legal limit, and prevent the vehicle from moving by means of an engine interlock, without inconveniencing sober drivers. The intention is that such a system will be made available as a safety option in new vehicles, in the same manner as automatic braking, lane-departure warning, and other advanced driver assistance technologies.

### Canadian Research on Driver Alcohol Detection Technology

*An Auto-21 project, headed by Dr. Eihab Abdel-Rahman at the University of Waterloo aimed to produce an in-vehicle alcohol detection and interlock system. The project included the development of novel micro-electromechanical gas sensors, new detector polymers, transmission interlocks for gas powered, hybrid and electric vehicles, a vehicle decision module, and looked at integrating these system components into a product as original vehicle equipment or for after-market installation.*

<https://www.plant.ca/features/alcohol-sensors/>

#### References:

dadss

<http://www.dadss.org/>

Driver Alcohol Detection System for Safety – Technology Overview – June 4, 2015

<https://www.youtube.com/watch?v=vykyT4YRw4A>

Driver Alcohol Detection System for Safety – Program Update – November 1, 2016

<https://www.youtube.com/watch?v=fwulAQY7xq4>

## Don't Drive High – A summary of the public awareness campaign

In December 2017, the Government of Canada launched a drug-impaired driving public awareness campaign - Don't drive high - to communicate to Canadians the risks associated with driving under the influence of cannabis and other drugs.

The material listed below is copied from <https://www.canada.ca/en/campaign/don-t-drive-high.html>



### It's illegal

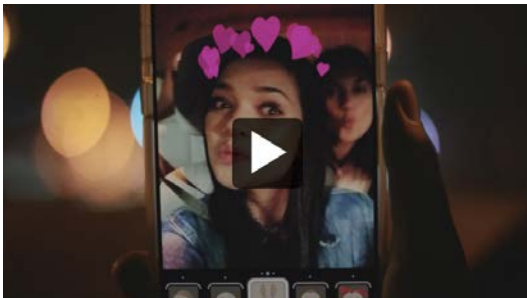
You could face consequences like a fine, criminal charges, even jail time

### Drugs impair your ability to drive by affecting:

- balance and coordination
- motor skills
- attention
- judgment
- reaction time
- decision-making skills

### 2 times more likely

Marijuana doubles your chances of being in a crash



Download video MP4 (16.9 MB)

<https://tinyurl.com/ya237uon>

### In an instant

A woman livestreams herself on her cell phone. The phone records three young adults standing together smoking marijuana. One of the men gets into the driver's seat, visibly impaired. Sound of car starting.

The phone records the man in the driver's seat. He appears to be tired.

Horn honks. Headlights shine into the car. Crashing sound! The window explodes beside the two backseat passengers and driver. The car spins out of control.

Your life can change in an instant. Don't drive high.

## Ne conduis pas gelé

En décembre 2017 le gouvernement du Canada a lancé la campagne de sensibilisation du public - *Ne conduis pas gelé* - afin de sensibiliser les Canadiens aux risques associés à la conduite sous l'influence du cannabis et d'autres drogues.

Le contenu de cet article consiste en une reproduction de la version disponible à l'adresse suivante: <https://www.canada.ca/fr/campagne/ne-conduis-pas-gelé.html>



### C'est illégal

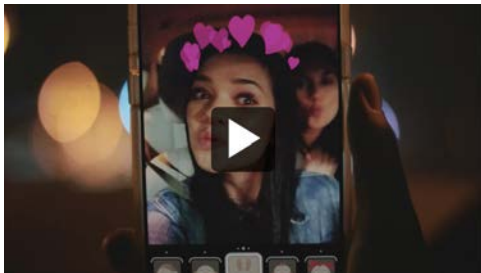
Tu pourrais devoir assumer les conséquences, comme payer une amende, faire face à des accusations criminelles ou même faire de la prison

### La drogue nuit à tes capacités de conduire en affectant :

- l'équilibre et la coordination
- les habiletés motrices
- l'attention
- le jugement
- le temps de réaction
- les aptitudes liées à la prise de décision

### 2 fois plus de risque

La marijuana double les risques d'avoir un accident



Télécharger le vidéo MP4 (17.1 MB)

<https://tinyurl.com/yb87ydp2>

### En un instant

Une jeune femme se filme en direct, elle sourit et agite son téléphone cellulaire. Le cellulaire filme trois jeunes adultes qui sont debout et fument de la marijuana. Son d'une auto qui démarre.

Le cellulaire filme le jeune qui conduit. Il a l'air fatigué.

Coups de klaxon. Des phares éclairent l'intérieur de l'auto. Son d'une collision. La fenêtre arrière, côté conducteur éclate. L'auto dérape.

Ta vie peut changer en un instant. Ne conduis pas gelé.

## Cannabis, Road Crashes and the Impact on Healthcare

### By Chief John Batiste

Chief Batiste began his career with the Washington State Patrol in March of 1976. He has been promoted through the ranks of Sergeant, Lieutenant, Captain, and Deputy Chief. He obtained his Bachelor's Degree in Law Enforcement Administration from City University and is a graduate of Northwestern University's Center for Public Safety School of Police Staff and Command, as well as a graduate of the Federal Bureau of Investigation's National Executive Institute. He is the 21st Chief of the Washington State Patrol.

### Résumé

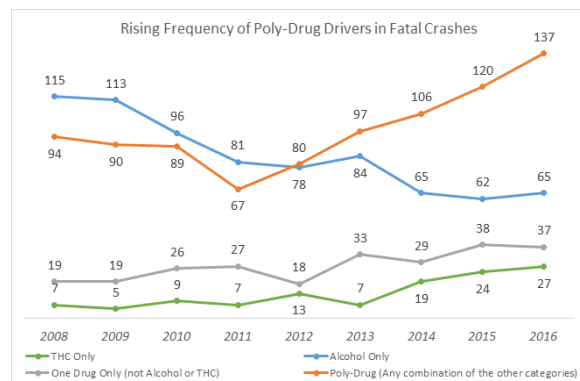
Alors que le Canada se prépare à la possibilité de légaliser l'usage de la marijuana, cela fait plusieurs années que, dans l'État de Washington, nous devons composer avec les effets de la légalisation de la marijuana sur les collisions et les décès routiers. Dans l'État de Washington, après avoir enregistré pendant une décennie une diminution des décès routiers, nous avons constaté une augmentation de plus de 17% des décès en 2015, ce qui représente 86 vies de plus de perdues. Il existe des mesures efficaces que les organismes gouvernementaux peuvent prendre pour lutter contre l'augmentation du nombre de ces décès.

In March, I spoke at the Vision Zero Conference and offered insights and solutions for other governments grappling with the vexing problem of impaired driving and the possibility on whether or not "Canada's Cannabis Legalization Would Kill Vision Zero." While Canada is preparing for the possibility of marijuana legalization, in Washington State we have been dealing with the effects of marijuana legalization on traffic collisions and fatalities for years.

To give you a little background on the subject; in November of 2012, Washington voters legalized marijuana for personal use. Previously, in 1998, Washington voters approved Initiative 692, which allowed marijuana for medical reasons. The marijuana law was updated September 2015, which made it illegal to consume or carry open containers of marijuana or marijuana infused products in vehicles upon a highway. Like alcohol, marijuana has the ability to impair drivers, which can result in traffic injuries and deaths.



In Washington State, after a decade of decreasing traffic deaths, we saw an increase of over 17% of traffic fatalities in 2015, which translates to an additional 86 lives lost. The Washington Traffic Safety Commission (WTSC) released numbers which shows in 2017, there were 250 fatalities caused by impaired drivers. Of the fatalities, 101 can be tracked back to marijuana positive drivers.



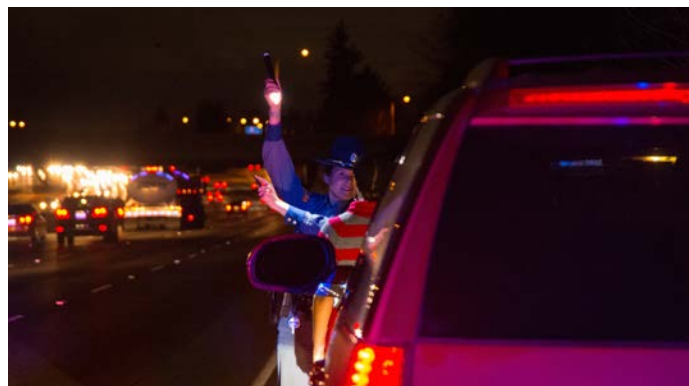
Not all hope is lost. There are effective measures government agencies can do to combat the increase in fatalities. Much like Vision Zero, Washington State has Target Zero, a strategic highway safety plan designed to reduce traffic fatalities and serious injuries on our roads and highways to zero by 2030. The program is a data-driven collaborative effort to battle the rising number of fatalities.

In 2009, the Washington State Patrol (WSP) launched a pilot program of full-time Target Zero Teams (TZZT). The teams focused their efforts on locations with the highest concentrations of DUI crashes. Within 18 months, these teams of troopers reduced fatal crashes in one county by 40 percent. In addition to TZZT Teams, High Visibility Enforcement (HVE) programs for DUI were launched. In addition, the Washington Traffic Safety Commission (WTSC) funds statewide DUI patrols called "Drive Sober or Get Pulled Over" each quarter. Over 150 state, local, and tribal law enforcement agencies participate in these campaigns.

Another powerful tool to combat impaired drivers is the Drug Evaluation and Classification Program (DEC), established in February 1996, the program trains law enforcement officers to become Drug Recognition Experts (DREs). Officers complete a rigorous training course and certification process. This enables them to recognize the signs and symptoms of impairment related to seven different categories of drugs. The WSP provides DRE training to both WSP troopers and local law enforcement officers. Since the program's inception, the number of trained DREs in Washington has risen from 16 to over 200, representing 62 law enforcement agencies.

There is more work to be done. In Washington State, we continue to look at innovative solutions to fight this growing problem. At the Washington State Patrol, we believe one life lost is one too many.

*According to Washington Traffic Safety Commission data - Driver impairment due to alcohol and/or drugs is the number one contributing factor in Washington fatal crashes and is involved in nearly half of all traffic fatalities.*



## Road Safety Professionals Certification



The graphic features a blue and white color scheme with a background of a road curving into the distance. On the left, a vertical blue bar contains a white warning triangle with an exclamation mark, the text 'RSP ROAD SAFETY PROFESSIONAL', and 'FIRST EXAM PERIOD'. In the top right corner, there is a diamond-shaped logo with 'TPCB' inside. The main text is centered and reads 'NEW Road Safety Professional Certification Coming Soon'. Below this, there are two columns of text: one on the left providing details about the certification and exam administration, and one on the right titled 'IMPORTANT DATES' listing key dates from June to December 2018.

**RSP**  
ROAD SAFETY  
PROFESSIONAL

FIRST EXAM PERIOD

**October 2018** **NEW**

# Road Safety Professional Certification Coming Soon

**Be among the first to achieve the Level 1 Road Safety Professional certification!** For individuals, this certification provides recognition of career accomplishment and a competitive advantage in career advancement. For more information, visit [www.tpcb.org](http://www.tpcb.org).

Exams are administered by Castle Worldwide, a recognized certification and licensure testing company, and managed by the TPCB with support from the Institute of Transportation Engineers.

Information on future exams can be found at [www.tpcb.org](http://www.tpcb.org).

### IMPORTANT DATES

<b>JUNE 15, 2018</b>	Applications accepted for first RSP Level 1 exam
<b>AUG 7, 2018</b>	Deadline to apply for first RSP Level 1 exam
<b>OCT 1-31, 2018</b>	First RSP exam period
<b>DECEMBER 2018</b>	Results of first RSP Level 1 period published

The Transportation Professional Certification Board (TPCB) in collaboration with a wide array of transportation- and safety-related organizations in the United States and Canada announces the upcoming availability of a new Road Safety Professional (RSP) Certification beginning in October 2018. The goals of the RSP certifications are to recognize road safety as a profession, to establish a recognized level of practice and knowledge, and to incentivize safety education.

With more than 40,000 lives lost annually on highways in the United States and Canada and the growing attention on improving public safety through initiatives such as Toward Zero Deaths, Vision Zero, and the Road to Zero, the RSP represents an important step forward for the safety profession. The RSP certification provides for transportation professionals to establish their competency in providing for the safety of the traveling public.

**RSP Level 1 Fee Schedule**

Application/Examination Fee: \$100  
 Three-year Certification Fee: \$180 (\$60/year)  
*Discounts provided for existing PTQE and PTP certification holders.*

**FIRST EXAM PERIOD**

**October 2018**

**This certification has two levels.**

**Level 1**

Those achieving Level 1 certification will have demonstrated proficiency in the foundations of road safety principles. The exam is for a broad audience of professionals who in the performance of their work make decisions or take actions that potentially impact the safety of the traveling public. This includes those in the engineering, motor vehicle, behavioral, law enforcement, and emergency response communities. The first Level 1 exam will take place in October 2018.

**Level 2**

This certification is geared toward professionals whose primary job functions are directed at improving the safety performance of the surface transportation system. It is for professionals responsible for developing and implementing engineering or behavioral programs aimed at reducing the number of fatalities and injuries due to road crashes. Prospective certificants will select between a Level 2 certification with a "behavioral specialty" or Level 2 certification with an "infrastructure specialty." The inaugural Level 2 Road Safety Professional exam period is scheduled for late 2019.

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**Questions? Contact Ann O'Neill, [aoNeill@tpcb.org](mailto:aoNeill@tpcb.org) or 202-484-8213.**



## Letters to the Editor

Interested in submitting to the Safety Network Newsletter? Consider writing a Letter to the Editor. Any communications received in this regard will be considered for publication if a future issue.

Please send submissions to Pamela Fuselli, Chief Editor, [pfuselli@parachutecanada.org](mailto:pfuselli@parachutecanada.org).



## lettres à l'éditeur

Si vous souhaitez soumettre un commentaire sur un aspect quelconque du contenu du SNN, vous pouvez le lire sous forme d'articles d'opinion ou de lettres à l'éditeur. Toute communication reçue à cet égard sera considérée pour la publication en cas de publication ultérieure.

Veillez envoyer vos soumissions à Pamela Fuselli, rédactrice en chef  
[pfuselli@parachutecanada.org](mailto:pfuselli@parachutecanada.org).

## Safety Network Newsletter (SNN) Editorial Committee Members

Each edition of the SNN will profile different members of the Editorial Committee. If you are interested in joining the SNN Editorial Committee, please contact Pamela Fuselli, Chief Editor at [pfuselli@parachutecanada.org](mailto:pfuselli@parachutecanada.org).

### Rebecca Peterniak



Rebecca Peterniak is passionate about road safety, inclusive community design, and the intersection of transportation and health. She holds B.Sc. and M.Sc. degrees in civil engineering with specialization in road safety. She has worked with governments across Canada and in Latin America to prevent severe collisions through improved infrastructure design, analytical tools, and management systems.

Rebecca has authored transportation engineering design guidelines for government agencies and delivered road safety workshops and presentations around the world. She recently instructed a core undergraduate course at the University of Manitoba which covered civil engineering concepts considered fundamental to the practice of transportation engineering.

Rebecca is the first and only individual to receive both the Dr. Charles Miller Award and the Mavis Johnson Traffic Safety Award from CARSP for best papers in the research/evaluation stream and policy/practice stream. She serves in leadership roles with the Institute of Transportation Engineers, the Transportation Association of Canada Road Safety Standing Committee, and CARSP. Rebecca worked at Fireseeds North Infrastructure, a Winnipeg-based civil engineering firm that specializes in impact and innovation in the transportation sector and has recently started as a Community Traffic Engineer with the City of Winnipeg

### Karen Bowman



Karen Bowman is the Director of Marketing and Communications and Director of the Drop It And Drive® Program (DIAD) with the Traffic Injury Research Foundation (TIRF), a charitable, independent road safety research institute. TIRF is a world leader in research, safety programs, and policy development. Karen has successfully developed a program delivery method to achieve behavioural change through imparting knowledge, science and practical, usable tools in a highly efficient and engaging manner. DIAD programs are well-known across multiple sectors and industries for their current content, expertise in road safety issues, both within the workplace and the communities in which they

travel, as well as practical implementation strategies to address distraction-related workplace risks from an occupational health and safety perspective. She actively tracks new research, knowledge and initiatives related to road safety, with an emphasis on distracted driving, through her network of contacts across several countries.

## Jean-François Bruneau



Jean-François holds a Master's degree in geography and a Ph.D. in civil engineering. Associate professor at the Department of Applied Geomatics of Université de Sherbrooke from 2010 to 2016, he is now the scientific partnership advisor of the Institute for Data Valorization (IVADO) at the Interuniversity Research Centre on Enterprise Networks, Logistics and Transportation (CIRRELT). He led research projects covering a wide range of safety issues: pedestrians, cyclists, school buses and heavy trucks, public transport, autonomous and connected vehicles, infrastructure design, laws and politics. He works closely with academia, the industry and all levels of government. He also has an inclusive approach to project design, seeking for the user's input. This helps understanding how roadway design and driving behaviour can be improved.

Some of his work brought modifications to the Highway Safety Code of Québec (HSCQ) and the provincial roadway standards. For example, his ten-year research on assistive motorized mobility devices led the Public Health Institute of Québec to propose and frame roadway rules for managing these devices and user's safety. Bicycle facilities standards were improved by the Ministry of Transportation (MTMDET) at locations where bicycle paths cross rural highways. School bus safety signalling devices and pre-stop warning were defined in HSCQ after three field studies using videos and radars. In 2018, inspired by European innovative designs, the research he conducted for Polytechnique Montréal led the government to introduced two key elements in the HSCQ for improving the safety of vulnerable users: the caution principle and the possibility for municipalities to designate pedestrian priority zones. Jean-François is an active member of the Road Safety Expertise Table of Association Québécoise des transports (AQTr).

## Acknowledgements

This issue of The Safety Network Newsletter was produced through the contributions of the following individuals:

### Editorial Board

**Jean-François Bruneau**, Institute for Data Valorization (IVADO)

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**Daphne Dethier**, WSP, Montreal, QC

**Pamela Fuselli** (Chief-Editor), Parachute, Toronto, ON

**Alan German**, Road Safety Research, Ottawa, ON

**Martin Lavallière**, Université du Québec à Chicoutimi, Chicoutimi, QC

**Rebecca Peterniak**, Fireseed North Infrastructure, Winnipeg, MB

**Pierre-Olivier Sénéchal**, Société de l'assurance automobile du Québec, Quebec

**Javier Zamora**, Lanamme, University of Costa Rica, San Jose, Costa Rica

### Guest Contributors

**Doug Bierness**, Canadian Centre on Substance Use and Addiction

**Zahra Hussein**, Trauma Association of Canada

**Dr. Emily Newhouse**,

**Diane Bradford**, Windsor

**Sabrina Moffat**, University of Western Ontario

### NEXT ISSUE

The next issue of The Safety Network Newsletter will highlight sessions and activities at the CARSP Conference. If you would like to contribute an article on this topic please contact Pamela Fuselli. Submissions are due July 30, 2018 and should be between 300-500 words plus accompanying photos and graphics.

#### SUBMISSION CONTACT

Pamela Fuselli at  
pfuselli@parachutecanada.org

### PROCHAIN NUMÉRO

Le prochain numéro du bulletin Le Réseau-sécurité portera sur l'affaiblissement l'association Canadienne des Professionnels de la Sécurité Routière conference. Si vous souhaitez contribuer un article portant sur ce sujet contacter Pamela Fuselli. L'échéance pour soumettre un article est le 30 juillet 2018 et il doit être d'une longueur de 300 à 500 mots, plus les images et les graphiques qui l'accompagnent.

#### CONTACTER

Pamela Fuselli at  
pfuselli@parachutecanada.org