RECREATIONAL CANNABIS CONSUMPTION SPACES

Key Considerations for Canadian Jurisdictions

Robyn D. Robertson, Ward G.M. Vanlaar & Hannah Barrett

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TRAFFIC INJURY RESEARCH FOUNDATION

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Traffic Injury Research Foundation

The vision of the **Traffic Injury Research Foundation (TIRF)** is to ensure people using roads make it home safely every day by eliminating road deaths, serious injuries and their social costs. TIRF's mission is to be the knowledge source for safe road users and a world leader in research, program and policy development, evaluation, and knowledge transfer. TIRF is a registered charity and depends on grants, awards, and donations to provide services for the public.

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Introduction

Research has demonstrated the impairing effects of cannabis on driving and the combined use of cannabis and alcohol have additive effects, although these effects may vary across different users (Lyon & Robertson 2019). Recent self-report, trauma centre, fatality and arrest data show a very concerning, rising trend in impaired driving in Canada. In addition, currently there are inadequate enforcement resources allocated to road safety. The detection of drug-impaired driving is recognizably challenging even for police officers trained as Drug Recognition Experts (DREs), and programs to train servers to prevent over-service of cannabis are non-existent.

In the face of this evidence, it is premature to allow cannabis consumption spaces. Simply adopting a 'learn as you go' approach is fraught with risks because the potential negative impacts on public safety are substantial. Moving forward without clearly defined strategies to regulate establishments, strengthen alternative transportation options, bolster enforcement and prevent impaired driving is ill-advised. Consideration of tactics to make cannabis consumption spaces economically feasible as a business should be a secondary priority to public safety risks.

> Clearly defined strategies to regulate establishments, strengthen alternative transportation options, bolster enforcement and prevent impaired driving are needed.

Cannabis consumption spaces have existed in Europe since the early 2010s. Most countries in Europe have strict policies and regulations in place for these spaces to operate. These regulations include limiting the quantity of cannabis distributed to patrons, protocols for cannabis transportation, storage, and security, the number of cannabis consumption spaces per capita, and in some countries (e.g., Spain, Belgium, and Uruguay) the possession of a membership to enter such locations. Cannabis consumption spaces

regulations are strictly adhered to, and enforcement is frequent as these regulations are in place for public safety. Ensuring the safe consumption of cannabis is a paramount priority for cannabis consumption spaces, not just for customers but also for surrounding neighbourhoods and roadways. Without robust policies and regulations in place to manage safe consumption, it is premature to permit such spaces.

Taking steps to permit cannabis consumption in designated public spaces has not yet been undertaken in any Canadian jurisdictions, however, the concept has become a topic of discussion in some of them. As such, the Traffic Injury Research Foundation has taken a closer look at this issue to identify key considerations as part of a thoughtful exploration of this approach and to help guide decision-making. While the possible economic benefits for government and other licensed establishments may hold an attractive appeal, these outcomes must be appropriately balanced against the potential and significant social costs of such an initiative. Important issues posing top road safety concerns include the availability and development of adequate prevention strategies, the allocation of tax revenues from these consumption spaces to help implement education, and enforcement measures to mitigate negative road safety impacts.

This paper summarizes important public safety risks that warrant careful consideration as part of decision-making. It describes the type of work needed to mitigate foreseeable harms and ensure adequate training and prevention measures are developed and operationalized in advance of moving forward, even in a limited fashion. Key facts to inform discussion are summarized below with appropriate references.

Cannabis & Driving Research Overview

While more than 40 years of alcohol research has guided legislation, policies and programs to prevent and reduce alcohol-impaired driving, awareness of drug-impaired driving and its prevalence has emerged in the past decade. Moreover, the combined effects of alcohol and various drugs, particularly cannabis, is a concern. This is based on growing recognition that illicit and licit substances can impair driving skills to varying degrees. Cannabis, cocaine, amphetamines and a variety of prescription medications, particularly pain medications, as well as over-the-counter medications have been increasingly detected in drivers killed in road crashes (Drummer, Gerostamoulos, & Woodford, 2019). More concerning, the combination of cannabis and alcohol is prevalent among drivers self-reporting using drugs within two hours of driving and drivers killed in road crashes (TIRF National Fatality Database, 2022).

An overview of the research on cannabis and driving was recently published by the International Council on Alcohol, Drugs & Traffic Safety (ICADTS). This series of fact sheets was developed in consultation with leading impaired driving researchers from 11 countries representing the ICADTS Drugged Driving Work Group. Co-chaired by Maastricht University (Netherlands), the Traffic Injury Research Foundation (TIRF/ Canada) and Swinburne University of Technology (Australia), this work group aimed to answer top questions commonly raised by policymakers around the globe. This fact sheet series interprets critical research findings regarding several facets of the problem and their implications for policy and legislation. The purpose is to clarify important research findings to help ensure the development and implementation of cannabis-impaired driving policy and legislation are appropriate and informed by science. The fact sheets are available online at **https://www.icadtsinternational.com/Fact-Sheets**. Key results included:

- Cannabis impairs driving, although the degree of impairment it produces varies substantially depending on the dose, the individual, and other factors.
- Research shows cannabis is associated with a modest increase in crash risk at the population level, and impairing effects are additive when combined with alcohol. The most current and comprehensive meta-analysis on cannabis-impaired driving showed "…cannabis alone was associated with impaired lateral control for lateral position variability and decreased driving speed. The combination of cannabis and

alcohol was associated with greater driving performance decrements than either drug in isolation." (Simmons et al. 2021; p.1).

- A driver testing positive for delta-9-tetrahydrocannabinol (or THC) is insufficient to conclude driving impairment. Any impairment is dependent on not only the dose and route of administration but also the frequency of use and whether cannabis has been consumed alone or in combination with alcohol or other substances.
- Cannabis impairs several important driving-related skills, it is often associated with slower driving, increased headway, and a reduced willingness to drive (Arkell et al., 2020).
- Regardless of the cannabidiol (CBD)[1] content, cannabis containing THC produced driving impairment at 40 minutes that was similar in magnitude to that typical of drivers with a blood alcohol concentration (BAC) of .05. At four hours, it was closer in magnitude to what is typical among drivers with a BAC of .02 (Arkell et al., 2020).

Drivers who test positive for cannabis are approximately 1.3-1.4 times more likely to be involved in a crash than drivers who test negative for cannabis.

- The increase in crash risk varies between studies, but the average increase is 30% to 40% in a 2016 meta-analysis. Drivers who test positive for cannabis are approximately 1.3-1.4 times more likely to be involved in a crash than drivers who test negative for cannabis (Rogoeberg, Elvik, & White, 2016).
- In addition, other meta-analyses (Asbridge et al., 2012; Rogeberg et al., 2016) reported cannabis increases crash risk by 1.36-2.66 times.
- Drivers who tested positive for both alcohol and cannabis were approximately seven times more likely to cause a crash than drivers who did not use either substance (Brubacher et al., 2019).
- Substances are more commonly detected in seriously injured drivers than in drivers involved in minor crashes (Brubacher et al., 2019).
- Those who use drugs and drive – and in particular, those who use cannabis and drive – are more likely to be younger and male (Hasan et al., 2020).

[1] Cannabidiol is a phytocannabinoid derived from Cannabis species, which is devoid of psychoactive activity, with analgesic, anti-inflammatory, antineoplastic and chemopreventive activities.

Key Considerations for Cannabis Consumption Spaces

There are various factors that must be considered to guide the safe implementation of recreational cannabis consumption spaces. It is imperative these factors are addressed in the creation of these spaces to ensure safe consumption and to acknowledge growing concerns about public harm. Four main factors to be considered are the prevalence of the cannabis and driving problem, the enforcement and detection of impaired driving, policy and hospitality training, and regulatory concerns. These four factors are discussed in depth below.

Prevalence of the cannabis & driving problem

Cannabis consumption has been increasing since 2004, with Canadians who reported using cannabis in the past 12 months increasing from 7.2% in 2004 to 22% in 2020 (Woods-Fry, Robertson, & Vanlaar 2020). Further, driving two hours after consumption (self-reported) increased by 76% in 2019 (post-legalization) compared to 2018. This section summarizes research describing the prevalence of the cannabis-impaired driving problem, the presence of cannabis in fatal crashes, and the self-reported use of cannabis.

1. **In the past three years, self-report surveys have shown the use of cannabis, alcohol, and the combination of these substances within two hours of driving has increased.** Data from TIRF's national Road Safety Monitor (RSM) series for 2018-2021 show a generally increasing trend in self-reported driving within two hours of using cannabis, alcohol, and these substances combined. Driver number estimates are based on an estimated population of 26,000,000 licenced drivers in Canada.
    - When compared to pre-legalization in 2018 when 3.3% of respondents self-reported driving within two hours of using marijuana, this increased by 7% (a 112% increase) in 2019 and by 4.5% (a 36.4% increase from 2018) in 2020 (Woods-Fry et al., 2020).
    - In 2020, 2.1% of Canadians reported driving within two hours of using alcohol and cannabis in the past 12 months, corresponding to approximately 558,243 licensed drivers. When compared to pre-legalization in 2018, self-reported driving within two hours of using cannabis and alcohol increased by 76% in 2019 and by 24% in 2020. Moreover, 2019 and 2020 represent the two largest percentages since data on this indicator were first collected (Woods-Fry et al., 2020).

- In 2021, almost 1 in 10 Canadians reported driving within two hours of drinking when they thought they were over the legal limit, and this is the largest reported percentage in the past decade (Vanlaar et al., 2021).
- Equally concerning are self-reported increases in risk-taking on the roads during the pandemic in 2020 and 2021. Notably, 1.7% and 3% of drivers in 2018 and 2019 respectively admitted driving within two hours of using alcohol and cannabis (Vanlaar et al., 2021). In 2021, 3.8% of respondents said they were more likely to have done this during the pandemic as compared to pre-pandemic (Woods-Fry et al., 2021).

Additionally, a major national Cannabis Survey conducted by the Government of Canada for the past few years also reported concerning behaviours. In 2021, 35% of respondents to this poll who admitted using cannabis in the past 12 months reported they had driven within two hours of smoking or vaporizing cannabis in the past 30 days, and 29% acknowledged doing so in the past 12 months (Cannabis Survey 2021).

Collectively, these data make clear that while some progress may have been achieved educating Canadians about the risks associated with cannabis and/or alcohol on driving, it is clear more concerted efforts are needed in order to reduce prevalence and reverse increasing trends.

2. **Cannabis-positive drivers are frequently detected in trauma centres in Canada.** Approximately half of 4,976 injured drivers receiving treatment in 15 trauma centres recruited between 2018 and 2020 had at least one impairing substance in their system. Cannabis was most prevalent with THC being detected in almost 20% of drivers. More than 7% of drivers had ≥ 2 ng/mL, and 3.5% had ≥ 5 ng/mL, indicating recent use and likely impairment. Drivers younger than 35 years were more likely to test positive (Brubacher et al. 2021).

In Canada, cannabis-positive drivers are frequently detected in trauma centres.

3. **Roadside survey data suggest cannabis among drivers is a concern.** In the years preceding cannabis legalization in 2018, five Canadian jurisdictions undertook roadside surveys to create a baseline against which to measure changes post-legalization. A summary of study findings was prepared by the Canadian Council of Motor Vehicle Administrators (CCMTA). Approximately 80% of the 7,265 randomly selected drivers across jurisdictions agreed to participate, with almost all of them (97.7%) submitting breath samples and approximately 90% providing an oral fluid sample. Notably, 7.6% tested positive for cannabis, drug use was most prevalent among drivers 20-24 years at 14%, and 10.4% of drivers aged 16-19 were positive for cannabis. Although no surveys were conducted in 2019 and 2020, there was a significant increase in drug use, specifically cannabis, in sharp contrast to a significant decline in alcohol use compared to previous years (CCMTA, 2019).
4. **Data show cannabis and alcohol are prevalent among fatally injured drivers.** Since the legalization of cannabis in October 2018, the number of fatally injured drivers testing positive for cannabis has increased. Among fatally injured drivers in Canada in 2018 (excluding Nunavut), 29% (293) tested positive for alcohol, 23.4% (229) tested positive for cannabis, and 10% (98) tested positive for alcohol and cannabis. The percentage of fatalities increased in the last quarter of 2018 when cannabis legislation came into effect. More concerning, the percentage of fatalities involving these substances increased in 2019 with 32.2% of fatally injured drivers testing positive for alcohol (247), 26.4% (194) testing positive for cannabis, and 12.7% (93) testing positive for alcohol and cannabis combined. The 2019 numbers currently exclude BC, NWT and NT, which have not yet been reported, meaning numbers will actually be even higher.

5. **Cannabis and alcohol are prevalent among fatally injured pedestrians.** These two impairing substances are also prevalent in vulnerable road users killed in road crashes. In 2018, more than one-quarter (26%) of pedestrians tested positive for alcohol (55), 13.6% tested positive for cannabis (27) and 9% (18) were positive for both substances compared to 31% for alcohol (44), 18% for cannabis (24) and 9% both (12) in 2019. Most concerning, the problem of alcohol and cannabis among fatally injured active transportation users is largely unaddressed and progress achieving declines in this population is limited.

6. **Police-reported data reveal increases in drug-impaired driving.** According to Public Safety Canada, the first full year when drug-impaired driving incidents were reported separately was 2009. The 1,407 incidents represented just 2% of all impaired driving incidents. This number had almost doubled by 2015 (2,698), accounting for 4% of all incidents, and reached 7% by 2019 with a substantial increase occurring over 2018. As of 2020, there were 7,310 police-reported drug-impaired driving incidents.
7. **The presence of cannabis consumption lounges has real potential to increase impaired driving.** In semi-urban and rural areas means of alternative transportation are limited or non-existent. Even in urban centres with greater access to public transportation, ridesourcing/ridesharing, and designated driver programs, impaired driving persists. There is no evidence to suggest cannabis-impaired drivers will make safer choices than alcohol-impaired drivers. According to the 2021 Cannabis Survey, not feeling impaired was the most often given reason (78%) for driving within two hours of using cannabis. In addition, 22% believed they could drive carefully, 20% were not driving far, and 13% reported no alternative transportation options. These results were unchanged from the previous year (Cannabis Survey, 2021).

Enforcement, detection & impaired driving

Enforcement and detection are crucial in reducing cannabis-impaired driving crashes. However, as a result of the COVID-19 pandemic, law enforcement priorities shifted and trainings were stalled. As law enforcement returns to conducting traffic stops, it is important for enforcement to be trained in detecting cannabis. There are many tools available to law enforcement, including the approved drug screening equipment (ADSE) and the Standardized Field Sobriety Test (SFST) to detect drug-impaired driving, and a Drug Recognition Expert (DRE) evaluation and blood draws to support the prosecution of drug-impaired driving offences. The following section provides an overview of enforcement detection training and priorities.

8. **Enforcement is hard-pressed to keep up with the impaired driving problem.** The rate of enforcement strength in Canada has been steadily declining since 2011 according to Statistics Canada (Conor et al., 2020). While substantial resources have been invested in training DREs in the past decade, the fact remains there are just 1,100 DREs in Canada and this number is inadequate (Public Safety Canada, 2021). As evidence of this, just 2% of persons reporting cannabis usage in the past year indicated they had been stopped by police for suspected cannabis-impaired driving (Cannabis Survey, 2021). Moreover, police services struggle to manage a multitude of road safety priorities in addition to their many other duties.

9. **Trained enforcement officers are challenged to detect cannabis impairment.** There are myriad challenges even for police officers to detect THC impairment. Current standardized field sobriety tests including horizontal gaze nystagmus (HGN), one leg stand (OLS) and walk and turn (WAT), developed to identify alcohol-impaired driving, do not adequately detect THC impairment. There are also too few trained DREs to deal with the current impaired driving problem. A study by Brubacher et al. (2018) in seven trauma centres in British Columbia from 2010 to 2015 suggested police detection of drug impairment in crash-involved patients admitted to trauma centers in BC was low. Blood samples from 1,816 injured drivers were matched to police crash reports. Alcohol was detected in 15% of drivers; THC in 7.5% of drivers. In contrast to alcohol, police seldom suspected drug use in drivers who tested positive for drugs. Police-reported drug impairment or drugs as a possible contributory factor was indicated in only 5.9% of THC-positive cases and only 6.2% of cases with THC ≥ 5 ng/mL. Notably, this study showed more than 90% of drug-positive drivers were not identified in crash reports. These findings raise concerns about the ability of police to effectively enforce drugged driving laws without additional training or tools. Therefore, this research suggests reliance on servers in cannabis consumption establishments to recognize impairment among patrons would be an impossible task.

Policy & hospitality training

In addition to law enforcement training, hospitality training will be imperative to prevent over-service, similar to alcohol training for hospitality employees. This presents many challenges, which are addressed below.

10. **An effective server training program is necessary to prevent over-service in cannabis consumption establishments.** A primary problem associated with the proposed cannabis consumption spaces is the absence of a valid method for users or servers to gauge impairment to prevent over-service. Of concern, research has shown cannabis consumers self-report a willingness to drive after consuming even though study results demonstrate their performance is still impaired (Marcotte et al., 2022). In addition, since impairing effects may be either rapid or delayed depending on products consumed, and patrons may not feel impairing effects or exhibit impairing effects until after they have left the establishment. This creates liability for business owners.

> To prevent over-service in cannabis consumption establishments an effective server training program is necessary.

Unfortunately, there is no definitive period of time after which it is safe to drive after using cannabis. Cannabis affects people in different ways, and the time needed to recover from cannabis intoxication varies. Generally speaking, for a given THC dose, someone who uses cannabis more frequently and has a greater tolerance for THC can safely drive sooner than someone who uses cannabis occasionally. However, this *tolerance effect* may be negated if the person with a higher tolerance uses a higher THC dose to achieve a similar effect to someone with a lower tolerance who uses a lower THC dose.

In addition, with respect to special events in particular, it will be challenging to *police* patrons coming and going from venues, prevent products from being shared with minors who may be present, and alcohol sales/consumption is also common at these venues.

Regulatory concerns

Finally, a move to permit cannabis consumption spaces has important regulatory implications for communities that ultimately will be obliged to manage establishments operating in their jurisdictions. In particular, communities are tasked with enforcing the legal age of purchase/consumption set by each province/territory as well as licensing, zoning, safety and health regulations for workplaces.

11. **There are differences in the legal age of consumption for alcohol and cannabis across many jurisdictions which will pose enforcement challenges.** In Canada, the Federal government established the legal age to purchase and use cannabis at 18. From a public health perspective, experts raised a number of health concerns with the legal age being 18, with a significant focus on the risk for harm being greater for people under 25 and for those who use every day or a few times a week. Long-term effects are worse for youth who start using frequently and early because the effects may not be fully reversible when cannabis use stops. While provinces and territories have the ability to regulate certain rules and restrictions including the legal age for cannabis purchase and consumption, for the most part, many of them have mirrored the legal age of cannabis purchase and consumption with the exception of Manitoba and Quebec that raised the legal age to 19 and 21 respectively. In contrast, provinces and territories have imposed the legal drinking age of 18 or 19. This means that in at least some jurisdictions there may be differences between the legal age to consume alcohol versus cannabis, and this may present enforcement challenges for establishments that serve both products.

Province/Territory	Legal age for cannabis purchase	Legal age for alcohol purchase
Alberta	18	18
British Columbia	19	19
Manitoba	19	18
New Brunswick	19	19
Newfoundland & Labrador	19	19
Northwest Territories	19	19
Nova Scotia	19	19
Nunavut	19	19
Ontario	19	19
Prince Edward Island	19	19
Quebec	21	18
Saskatchewan	19	19
Yukon	19	19

12. **The task of ensuring establishments comply with local licensing, zoning, safety and health regulations will be the responsibility of municipalities and they should have the ability to opt out if desired.** In Canada, the Federal government legalized the purchase and sale of cannabis and provided each province and territory with the ability to create a framework for recreational cannabis retail stores. The majority of provinces and territories provided options to their respective municipalities to *opt out* of having recreational cannabis stores in their jurisdiction. For example, municipalities in Ontario had until January of 2019 to decide whether to opt in or opt out and it has been estimated that slightly less than 20% of municipalities made the decision to opt out. Other than the *opt-out* clause, municipalities maintained the ability to enforce the *Smoke-Free Ontario Act, 2017* the prohibition of smoke in city workplaces, property and parks and beaches. They also maintained the right to enforcement of property standards and maintenance requirements. Municipalities should be actively engaged in consultation to inform decision-making about these presence of consumption spaces in their jurisdictions as well as have autonomy with respect to whether such spaces are permitted or not.

Conclusion

Cannabis consumption spaces in establishments licensed to sell and serve alcohol should not be considered at this time because the impairing effects of cannabis combined with alcohol on driving skills are well-documented. Indeed, any proposal to move forward with the implementation of cannabis consumption spaces in the absence of effective and well-developed prevention strategies to protect the public from recognized harm is premature. It is in sharp contrast to Federal and provincial/territorial governments embracing road safety as a priority and moving to implement the Safe System approach to eliminate road deaths and injuries.

It is important to consider the prevalence of the cannabis and driving problem, the enforcement and detection of impaired driving, policy and hospitality training, and regulatory concerns during the implementation of cannabis consumption spaces. Understanding the prevalence of the cannabis-impaired driving problem, the presence of cannabis in fatal crashes, and the self-reported use of cannabis is important in ensuring policies regarding safe consumption spaces, and how to manage public risks. Similarly, it is crucial to understand the enforcement, detection, and training for officers to recognize cannabis impairment as the priorities of law enforcement often shift with public concern and trends. Lastly, implementing hospitality training will be imperative to prevent over-service, similar to alcohol training for hospitality employees. These concerns present many challenges which were discussed in this paper.

The risks associated with cannabis-impaired driving cannot be ignored, particularly at a time when self-reported risk-taking on the road is increasing, and the percentage of road fatalities involving drivers who are positive for cannabis is rising. Aiming to encourage consumption of legal cannabis products at consumption lounges for financial benefits is likely to have potentially significant negative costs to public safety. At a minimum, comprehensive and visible consultation with road safety, enforcement, health and indigenous communities is essential to understand issues and gain insight into opportunities and preventive measures to protect populations at risk.

Moving forward with implementing cannabis consumption spaces, even on a small scale, in the absence of actively soliciting input from stakeholders is problematic. It is arguable that cannabis consumption spaces at music festivals are not *lower complexity*. Of greatest concern, these venues can be quite large and are frequently attended by underage youth who would be exposed to cannabis smoke and cannabis usage, and who are at highest risk for harm.

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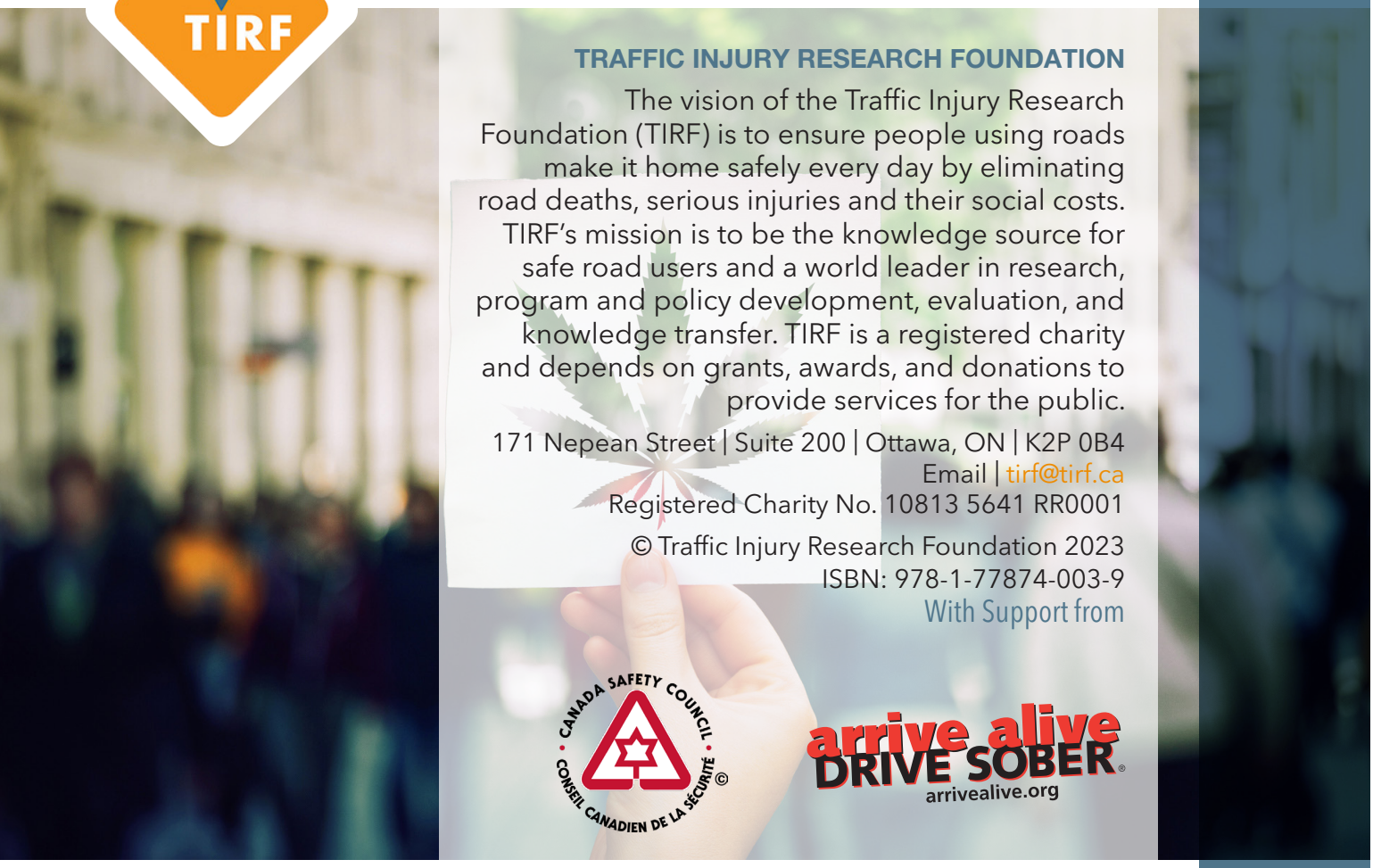

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