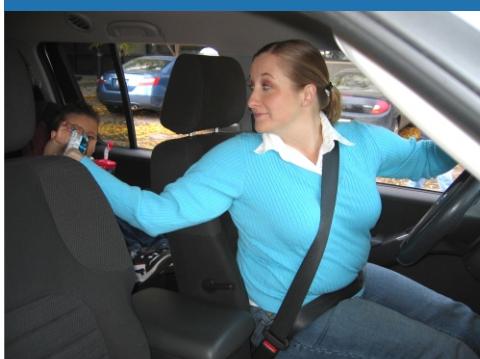


Distracted Driving and Cell Phone Use While Driving



Infrastructure and Transportation

Alberta

FINAL

**Distracted Driving and
Cell Phone Use While Driving**


**Infrastructure and
Transportation**

September 2007

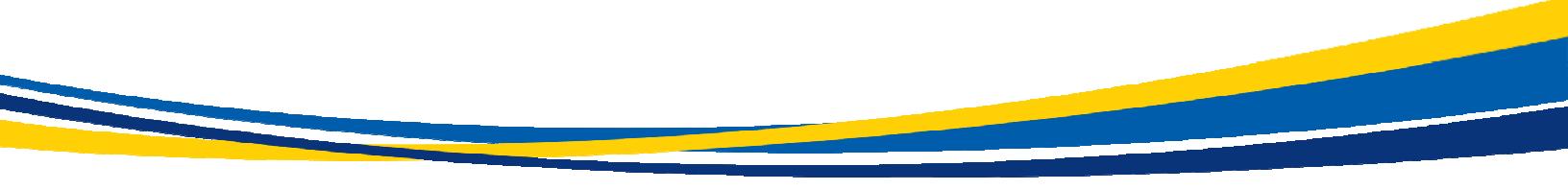
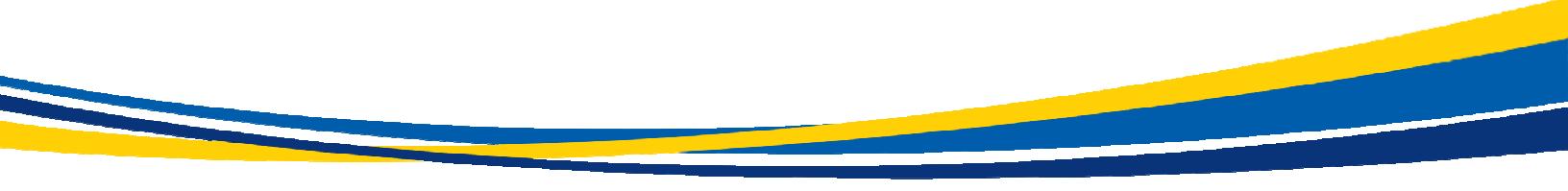


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Executive Summary

Distracted driving occurs when a driver diverts their attention from driving and focuses on an object, activity, event or person unrelated to driving^[1]. The research on distracted driving and cell phone use while driving indicates:

- Approximately one-in-four collisions involve driver distraction;
- The relative risk of a collision increases with the frequency of cell phone use;
- Hands-free phones are no safer than hand-held phones;
- All drivers, not just novice drivers show reduced ability when on the phone;
- There are many sources of driver distraction that reduce driving ability;
- Cell phone use while driving is associated with less risk than many other distractions;
- Legislation banning the use of cell phones while driving has not been shown to reduce the number of collisions;
- Public awareness and education is more likely than legislation to reduce distracted driving in the long term.

Although the use of cell phones receives a significant amount of attention in the media, legislation and research, there are many other distracting behaviors occurring in our vehicles each day^[21]. For example, eating, using laptops or tending to children in the backseat. Studies have found that drivers talking on cell phones were four times more likely to be involved in a collision than were drivers not using cell phones^[6,7]. However, studies also find that many common distracted driving behaviors are riskier than cell phone use while driving^[5,19,20]. All driver distractions are a growing concern for both the policy makers and the public, as research indicates that one-in-four collisions involve a distracted driver^[4,5].

Even though many jurisdictions with cell phone bans only restrict the use of hand-held cell phones, a consistent message in the literature is that hands-free cell phone use when driving is no safer than hand-held cell phone use^[6,7,9,11]. Considering driver experience, a recent study concluded that *all* drivers, not only novice drivers, show reduced driving ability when using a cell phone^[18].

Distracted driving, in particular cell phone use while driving, is a traffic safety issue around the world. Internationally, over forty-five countries currently restrict or prohibit the use of cell phones while driving^[21]. In Canada, only one jurisdiction bans all

drivers from using cell phones while driving. The remaining jurisdictions can lay a charge of careless driving when driver distractions, such as cell phone use, affect driving performance.

Despite the number of countries with cell phone bans while driving, there is no available evidence that such legislation has reduced the number of collisions. Internationally, those jurisdictions who continue to run post-legislation public awareness campaigns and who have strict, publicized enforcement campaigns tend to have better, longer-term compliance. However, compliance with cell phone legislation in general is low [25,26,29,30].

Delegates to the 2005 International Conference on Distracted Driving agreed that current laws related to distracted driving do not adequately address the problem. They identified that research, awareness and education, and cooperative government-industry efforts are essential over the long term to influence attitudes and reduce collisions resulting from driver distraction [2]. This is consistent with the recommendations put forth by the Canadian Council of Motor Transport Administrators (CCMTA), Strategy to Reduce Impaired Driving (STRID), Sub-Group on Distraction. This is also consistent with the guiding principles of the Alberta Traffic Safety Plan. A concerted effort to change public attitudes towards driving while distracted is expected to provide a long-term solution to the issue. However, this approach requires a long-range strategic plan in order to bring about social change.

Introduction

The definition of driver distraction developed by the Canadian Council of Motor Transport Administrators (CCMTA), Strategy to Reduce Impaired Driving (STRID), Sub-Group on Distraction is:

Distracted driving is the diversion of attention from driving, as a result of the driver focusing on a non-driving object, activity, event or person. This diversion reduces awareness, decision-making or performance leading to increased risk of driver error, near-crashes or crashes. The diversion of attention is not attributable to a medical condition, alcohol/drug use and/or fatigue^[1]

Driver distraction, in particular the use of cell phones while driving, is becoming an issue of concern in Alberta. Many factors have contributed to the current situation. For example:

- Technological advances over the last 20 years;
- A perceived need to be connected to work and home at all times;
- A perception that driving is an unproductive, second nature task; and
- People trying to accomplish more in less time. ^[2]

The result is that many drivers focus on secondary tasks while driving, for example, using mp3 players or navigation devices, talking on cell phones, text messaging, interacting with sophisticated entertainment centres, eating and grooming. The increasing number of drivers and vehicles on the roadway, Alberta's growing population and increases in traffic volumes compounds this issue.

Driver distraction is not only a growing concern among policy makers but also for the public. In 2006, a Canadian survey conducted by the Traffic Injury Research Foundation (TIRF), a leading authority on Canadian traffic safety research, found that nearly 70 percent of Canadians feel that driver distraction is a serious problem ^[3]. Interestingly, people's concern over cell phone use while driving has remained relatively high over the last several years; however, people are growing more concerned about other distracted driving behaviors, for example, eating, drinking, tending to pets, reading maps, or focusing on external events unrelated to driving.

Transport Canada estimates that at least 20 percent of collisions involve driver distraction ^[4]. According to this estimate, each year in Alberta 25,000 collisions involve driver distraction. In 2006, the National Highway Traffic Safety Administration (NHTSA) and the Virginia Tech Transportation Institute (VTTI) released the results of an in-depth, 100-Car Naturalistic Driving study. One hundred

20 - 30 %
of collisions
involve
driver
distraction

vehicles were equipped with video recorders, which collected data over 18 months. This study found that drivers who were distracted were three times more likely to be involved in a collision than attentive drivers [5]. Furthermore, approximately 30 percent of crashes and 30 percent of near-crashes happen within three seconds of some form of driver distraction. Reaching for a moving object multiplied the risk of a collision or near-collision by nine times; reading, applying makeup, or dialing a hand-held device tripled the risk; and listening/talking on a hand-held device increased the risk by 1.3 times.

Cell Phone Use While Driving

Collision Risk and Cell Phone Use

A study conducted in Western Australia found that drivers talking on cell phones were four times more likely to be involved in an injury collision than were drivers not using cell phones [6]. This Australian finding is consistent with a Canadian study by Redelmeir and Tibshirani, published in the New England Journal of Medicine, which found that cell phone use by drivers increased collision risk fourfold [7].

Cell phone
use
increases
collision risk

In 2001, the University of North Carolina, Highway Safety Research Center found that 92.5 percent of drivers who were involved in a collision while on a cell phone made some type of traffic violation [8]. This compares to 50.6 percent for non-cell phone users involved in collisions. Commonly identified violations included failing to stop at a stop sign, following too closely, failure to reduce speed and traffic signal violations.

A 2006 study published in *Human Factors: The Journal of the Human Factors and Ergonomics Society* found that the impairments of using a cell phone while driving can be as severe as those associated with driving drunk [9]. Drivers using cell phones had longer reaction times and were more likely to be involved in collisions during the simulated driving task when compared to drivers legally impaired by alcohol.

In 2001, the University of Montreal released a groundbreaking study on the use of cell phones by drivers [10]. The relative risk of a collision increased with cell phone use frequency. Heavy cell phone users (>135 calls/month) were twice as likely to get into a collision as were light users (<10 calls/month)/non-users.

Hand-Held versus Hands-Free Cell Phones

Although many jurisdictions with cell phone bans only restrict the use of hand-held cell phones, a consistent message in the literature is that hands-free cell phone use when driving is no safer than hand-held cell phone use [6,7,9,11]. While manual dialing reduces a driver's ability to focus on driving for a brief period, it occurs much less frequently than talking on a cell phone.

Hands-free
phones are no
safer than
hand-held
phones

A consistent finding in cognitive research is that human cognition has limited resources with which to operate. According to the American Psychological Association, with respect to human cognition, the term "multi-tasking" is more akin to establishing priorities and allocating resources to one task rather than simultaneously processing two tasks at once [12]. As cognitive priorities change, resources are shifted accordingly. For most people this shift requires approximately one half second. Talking on a cell phone requires multiple consecutive shifts between the phone and the road, increasing the time that drivers are effectively unfocused on the task of driving.

Furthermore, a study from John Hopkins University reports that attention to one modality, for example listening to a cell phone, can effectively diminish the ability of other sensory modalities, for example watching for important visual events on the roadway [13]. That is, drivers listening to a cell phone have reduced visual ability and may ignore roadway hazards that undistracted drivers would attend to and respond to appropriately.

Drivers on cell phones are more likely to ignore hazards

In 2001, the Insurance Corporation of British Columbia investigated the impact of auditory tasks on driving performance [14]. During the closed-track experiment participants listened to and responded to pre-taped messages, which simulated the task of talking on a hands-free cell phone. The drivers were exposed to three driving tasks: a traffic light triggered to turn amber at different distances, obstacles that would require a weave, and a gap acceptance test for left turns. As the complexity of the driving task increased, drivers who were attending to messages showed reduced performance. Adverse road conditions exacerbated this effect.

The lack of a safety benefit for using a hands-free phone over a hand-held phone supports that the conversation is a major distraction to drivers. This begs the question: Is a cell phone conversation any different from conversing with a passenger in the vehicle? According to NHTSA, there is a significant difference between these two scenarios because passengers are more aware of the driving situation. They can choose to delay conversation during challenging driving conditions, whereas a person on the other end of the phone might not be aware of the driver's situation and therefore persists with the conversation in cases where a passenger might pause [15].

Novice versus Experienced Drivers

In 2004, the University of Calgary (U of C) and the Insurance Bureau of Canada (IBC) prepared a meta-analysis on cell phone use while driving for the Canadian Automobile Association (CAA) [11]. They reviewed studies on cell phone use and driver experience/age and found that most lacked validity and were inconclusive.

Future research needs to consider exposure data. For example, the researchers hypothesized that taking driver kilometres into account might reveal that older drivers might actually be at most at risk of a collision while using a cell phone. The authors identified that younger individuals are more likely to be experienced cell phone users and this may have some mitigating effects worth investigating.

In 2007, the U of C and the IBC conducted a study on cell phone use while driving [18]. The two-part study investigated driving performance among novice and experienced drivers and included both simulated and on-the-road driving tasks. During the simulated driving task, cell phone use by both the novice and experienced drivers restricted visual scanning and led to increased reaction times in responding to pedestrian hazards. In contrast, experienced drivers were less likely to wander within their lane and were more likely to show a slight reduction in speed, which incidentally, offered little compensatory benefit. During the on-road task, both the novice and experienced drivers reduced their speed slightly. In addition, both groups were slower to recognize hazards. The authors concluded that the increased reaction time in detecting hazards when using a cell phone while driving increases the likelihood of a collision for all drivers, regardless of driving experience. In other words, *all* drivers, not only novice drivers, show reduced driving ability, and therefore, increased collision risk when using a cell phone while driving.

All drivers, not just novice drivers, show reduced ability when on the phone

The 2006 TIRF survey found that 80 percent of Canadian respondents agreed that novice drivers should be restricted from using cell phones while driving [3]. The Alberta Motor Association (AMA) reported that in 2006, over 90 percent of AMA members surveyed supported a cell phone ban for Graduated Driver Licensing (GDL) drivers [16]. This restriction early in the driving experience may set the tone for future driving habits. However, on the road, it is difficult to distinguish between GDL and non-GDL drivers, as this group is comprised of drivers of all ages. Therefore, enforcement may be difficult. In addition, the 2005 GDL best practices reported by TIRF identified that additional research is required before making any evidence-based recommendation on the value of restricting cell phone use by GDL drivers [17].

In 2005, TIRF and the Canadian Automobile Association (CAA) hosted an international conference on distracted driving [2]. One of the priority needs and responsibilities identified was to discuss the merits of an electronic communication device ban for GDL drivers. The CCMTA STRID Sub-Group on Distraction is analyzing the potential benefits of prohibiting the use of cell phones and vehicle telematics as enhancement to GDL programs.

Cell Phones Compared To Other Sources of Driver Distraction

It is important to keep in mind that cell phone use is only one of a multitude of driver distractions. Among distractors, cell phones attract the most attention from researchers, policy makers and the public, when in fact, compared to other common distractors, cell phone use is typically associated with a lower crash risk [5,19,20]. It is likely the visibility and verifiability of cell phone use that perpetuates this distinction from the bigger issue of distracted driving [21]. It is difficult to tell when a roadside billboard distracts a driver; however, it is easier to spot a driver using a cell phone.



The Canada Safety Council and the Steel Alliance conducted a public opinion survey on aggressive driving in 2003 [22]. One in nine respondents reported frustration when they see other drivers multi-tasking behind the wheel. Reading and the use of technological devices (excluding cell phones) frustrated 73 percent of people. Grooming and cell phone use was somewhat less frustrating to respondents, at 66 percent and 65 percent respectively. Nearly 90 percent stated that they have seen other drivers multi-tasking and in the majority of situations, the other driver was using a cell phone.

In 2001, the AAA Foundation for Traffic Safety investigated driver distraction among drivers who had been involved in collisions [19]. As shown in Table 1, nearly 30 percent of drivers were distracted by an "outside person, object or event," at the time of the collision. Combined, interacting with passengers and adjusting the radio accounted for over 20 percent of distracted drivers. Only 1.5 percent of drivers involved in a collision due to distraction were using a cell phone.

Cell phone use
is associated
with less risk
than many
other
distractions

Table 1. Sources of distraction among distracted drivers involved in collisions.

Distraction	Drivers (%)
Outside person, object or event	29.4
Adjusting radio, cassette, CD	11.4
Other occupant in vehicle	10.9
Moving object in vehicle	4.3
Other device/object brought into vehicle	2.9
Adjusting vehicle/climate controls	2.8
Eating or drinking	1.7
Using/dialing cellular phone	1.5
Smoking related	0.9
Other distraction	25.6
Unknown distraction	8.6
Total Drivers	100

Source: AAA Foundation for Traffic Safety, "The Role of Driver Distraction in Traffic Crashes," Washington, DC: Jane C. Stutts et al. May 2001.

In 2007, TIRF also concluded that external distractions put drivers at most risk [3]. One in five Canadian drivers reported having to take evasive action in order to avoid a collision due to external distractions. This compares to one in ten for in-vehicle distractions.

A study conducted by the New Zealand Ministry of Transport, as reported by the Australian Inquiry into Driver Distraction, found that passenger distractions accounted for the highest number of collisions involving driver distraction [20]. In fact, passenger distraction was higher than both telecommunication (e.g., cell phone use) and entertainment systems combined.

An analysis conducted in 2006 by NHTSA and VTTI support the findings in Table 1. Using the data from the 100-Car Naturalistic Study, researchers factored in exposure data to establish near-crash/crash risk [5]. Table 2 contains a list of near-crash/crash odds for several sources of driver distraction.

Table 2. Odds ratio estimates to assess the likelihood of crash or near-crash involvement when engaging in secondary tasks.

#	Distraction	Odds Ratio
1	Reaching for moving object	8.8
2	Insect in vehicle	6.4
3	Looking at external object	3.7
4	Reading	3.4
5	Applying make-up	3.1
6	Dialing hand-held device	2.8
7	Inserting/retrieving CD	2.3
8	Eating	1.6
9	Reaching for non-moving object	1.4
10	Talking/listening to a hand-held device	1.3
11	Drinking from open container	1.0
12	Other personal hygiene	0.7
13	Adjusting radio	0.6
14	Passenger in front seat	0.5
15	Passenger in rear seat	0.4
16	Combing hair	0.4
17	Child in rear seat	0.3

Source: National Highway Traffic Safety Administration, "The Impact of Driver Inattention of Near-Crash/Crash Risk: An Analysis Using the 100-Car Naturalistic Driving Study Data," DOT HS 810 594. Washington, DC: April 2006.

As shown in Table 2, compared to "dialing hand-held device" five distractions have higher odds of leading to a collision. Furthermore, the conversation task, "talking/listening to a hand-held device," is tenth in the list. Although dialing is associated with a higher crash ratio, this behavior occurs less frequently than does talking on a cell phone.

At this time there appears to be a lack of published research to draw definitive conclusions around the potential crash risk associated with specific distractors. However, it is clear that distracted driving leads to crashes.

Driver distraction
leads to collisions

International Experience with Cell Phone Use While Driving

Distracted driving, in particular cell phone use while driving, is a traffic safety issue around the world. Internationally, over forty-five countries on all six inhabited continents currently restrict or prohibit the use of cell phones while driving (Table 3) [21].

Table 3. Countries that ban the use of cell phones while driving.

Africa				
Egypt	Kenya	South Africa		
Asia				
Bahrain	Israel	Malaysia	Singapore	Thailand
Hong Kong	Japan	Pakistan*	South Korea	Turkmenistan
India*	Jordan	Philippines	Taiwan	
Europe				
Austria	France	Italy	Romania	Sweden
Belgium	Germany	Netherlands	Russia	Switzerland
Czech Republic	Greece	Norway	Slovak Republic	Turkey
Denmark	Hungary	Poland	Slovenia	United Kingdom
Finland	Ireland	Portugal	Spain	
North America				
United States*	Mexico*	Canada*		
Oceania				
Australia				
South America				
Brazil	Chile			

* Bans imposed by only some sub-national jurisdictions.

Banning cell phones is only one approach to addressing the multi-dimensional issue of distracted driving. Delegates to the 2005 International Conference on Distracted Driving agreed that current laws related to distracted driving do not adequately address the problem. They identified that research, awareness and education, and cooperative government-industry efforts are essential over the long term to influence attitudes and reduce collisions resulting from driver distraction^[2].

Unfortunately, for many of the countries listed in Table 3, English information is difficult to find; the available information is contained in Appendix A. The following sections will provide a more in depth account of international experiences for countries where English information was accessible.

Australia

Hand-held cell phone bans have existed in some Australian states for nearly two decades^[23]. The introduction of cell phones into Australia occurred in 1987 and within one year, Victoria enacted legislation banning the use of cell phones while driving. New South Wales followed suit in 1989. Ten years later, in October 1999, all Australian states and territories came under a cell phone ban when Australia's federal government adopted the *Australian Road Rules*, which prohibits all drivers from using hand-held cell phones, "while the vehicle is moving, or is stationary but not parked, unless the driver is exempt from this rule under another law of this jurisdiction"^[24].

Further to the existing federal and state/territory hand-held prohibitions, some Australian jurisdictions created additional restrictions for novice drivers. In some capacity, Queensland, New South Wales and Victoria each restrict the use of both hand-held and hands-free cell phones by novice drivers. Although the penalties vary, they generally include both a fine and demerit points.

Despite legislated bans, many drivers continue to use hand-held cell phones while driving. The Australian Broadcasting Corporation (ABC) reported that nearly one-in-five drivers in the Sunshine Coast area of Queensland admitted that they regularly use a hand-held cell phone despite the federal restriction^[25]. Furthermore, one-in-four survey respondents confessed that they commonly send or read text messages while driving. In 2006, research conducted in New South Wales and Western Australia found that 23 percent of drivers continue to use hand-held cell phones and 30 percent of young drivers text message while driving^[26].

To date, there is a lack of evidence that the Australian cell phone ban has reduced collision frequency as many drivers continue to use cell phones while driving. In 2006, Victoria's Road Safety Committee Inquiry into Driver Distraction tabled a report with the state parliament^[20]. Parliament supported, in principle, the committee's recommendation for a cell phone use prevalence study in order to

establish baseline data for future countermeasure evaluations. This may allow Australia to evaluate the effects of future public awareness and enforcement campaigns relating to their cell phone ban.

United Kingdom

In 2003, the United Kingdom prohibited the use of hand-held cell phones while driving [27]. While the UK permits drivers to use hands-free cell phones, a careless driving charge can be laid for not maintaining proper control of the vehicle while using a hands-free phone. In February 2007, fines were doubled to £60 (approximately \$120 CAD) and three penalty points were added. Drivers that accumulate six penalty points within the first two years after their driving test are required to retake the test. Drivers who contest the charge in court risk a maximum fine of £1000 (approximately \$2000 CAD). Finally, employers may be prosecuted if they require or allow employees to use a cell phone while driving.

United States

In the United States, 28 states and the District of Columbia (DC) have legislation relating to cell phone use while driving. Six jurisdictions prohibit all drivers from using a hand-held phone. However, in many states, a complete (hand-held and hands-free) ban applies only to novice and/or school bus drivers [28]. Six states permit local jurisdictions to impose their own bans, while eight states prohibit local jurisdictions from imposing bans. Refer to Appendix B for specific information relating to each state.

Of the 29 jurisdictions with bans, 21 are primary enforcement laws. Drivers may be stopped solely because they violated the law. In the eight jurisdictions with secondary enforcement laws, the bans may only be enforced if the driver was stopped for another infraction.

Comprehensive compliance evaluations have occurred in two jurisdictions: New York and DC. In New York, pre-legislation cell phone use while driving was estimated at 2.3 percent. Despite an initial post-implementation decline to 1.1 percent, cell phone use returned to pre-legislation levels (2.1%) within one year [29]. Based on experiences implementing earlier traffic laws, publicized enforcement activities during implementation increase long-term compliance. While there was significant free publicity in the run-up to the legislation's implementation, there was no statewide enforcement effort.

Similarly, DC experienced a significant decrease in cell phone use during the first post-legislation year [30]. They reported pre-legislation use at 6.1%, 3-month post-legislation use at 3.5% and 12-month post-legislation use at 4.0%. However, in contrast to New York, cell phone usage rates remained well below pre-legislation

levels. Based on the increases in cell phone use in two nearby states without bans, the authors estimated that the decrease in DC represented a 53% reduction compared to what would have been expected without the ban. The authors speculate that the difference in the two jurisdictions may be DC's more stringent enforcement standards.

In addition to their cell phone legislation, DC also prohibits distracted driving. According to the District of Columbia Official Code 2001 Edition the definition of distracted driving is:

"Distracted driving" means inattentive driving while operating a motor vehicle that results in the unsafe operation of the vehicle where such inattention is caused by reading, writing, performing personal grooming, interacting with pets or unsecured cargo, using personal communications technologies, or engaging in any other activity which causes distractions^[31].

Finally, although Utah does not have legislation banning the use of hand-held phones, their careless driving legislation specifically identifies in-vehicle distractions unrelated to driving^[32]. This legislation came into effect in the summer of 2007. Careless driving charges can be applied if a driver commits a moving violation (other than speeding) while distracted by a hand-held cell phone or other electronic device, searching for an item in the vehicle or grooming. Utah and DC are rare examples of jurisdictions with legislation that specifically relates to distracted driving in general, opposed to just cell phones.

Current Situation in Canada

Alberta surveyed CCMTA members on the current situation in their jurisdiction. A summary of the results is presented in Appendix C. Because cellular service is unavailable throughout most of their jurisdiction Nunavut did not fill in the survey and are not included in the results below.

Six of the eleven jurisdictions reported that they are reviewing the issue of cell phone use while driving. As part of a review of their overall traffic safety initiative, Northwest Territories is reviewing driver cell phone use policy; however, this is not a major issue for Northwest Territories at this time. British Columbia is closely reviewing this issue and is considering new information as well as other public policy considerations in their jurisdiction. Yukon is contemplating a ban at this time; it is under review. Cell phone use while driving is under review in Nova Scotia. Manitoba expects to take action on cell phones this fall. Quebec is expecting legislation that will ban all drivers from using hand-held cell phones while driving to come into effect in 2007-2008. The proposed penalty is an \$80 to \$100 fine and three demerit points.

To date, only one jurisdiction in Canada has implemented legislation restricting the use of cell phones, by all drivers, while driving. In 2003, Newfoundland and Labrador banned all drivers from using hand-held cell phones^[33]. They continue to allow the use of a hands-free cell phone while driving. To date, Newfoundland and Labrador have not conducted an evaluation of their ban and have not indicated any plans to do so.

In Prince Edward Island, drivers in the GDL program cannot use headphones or hand-held electronic devices, such as cell phones or mp3 players while driving.

The Taxicab Regulation in Manitoba has prohibited the use of cell phones by taxi drivers while transporting passengers since 1999. This ban restricts the use of both hand-held and hands-free phones. There are exemptions for medical emergencies and vehicle breakdowns.

Each jurisdiction in Canada has legislation similar to Alberta's careless driving charge. This charge can be laid when driver distractions, including cell phone use, affect driving performance. Fines typically range from \$100 to \$2000 and include 2-6 demerit points. Additionally, the court may impose a jail term or suspension.

British Columbia has conducted prevalence studies and public opinion surveys on driver distraction. Manitoba recently compiled a driver distraction review, with a focus on cell phone use, for their Minister. Nova Scotia will include the topic of distracted driving in their road safety public attitude survey, which is scheduled for

fall 2007 / winter 2008. All three of these jurisdictions indicated that driver distraction and cell phone use while driving is a public issue in their province.

British Columbia, Saskatchewan, Manitoba, Nova Scotia and Prince Edward Island currently have public awareness campaigns directed at distracted driving and/or cell phone use.

Finally, Transport Canada reports that like other driving behaviors cell phone use while driving is best dealt with provincially. However, they do have a corporate policy against the use of telematics when driving while on duty.

According to Transport Canada, cell phone use while driving is an issue for Canadians. Of those surveyed, 80 percent believe that more awareness materials are required.

Transport Canada has conducted research concerning cell phones and is involved in an ongoing research program investigating the assessment of distraction due to telematic devices other than cell phones.

Current Situation in Alberta

Currently in Alberta, police can lay a charge of careless driving when driver distractions, including cell phone use, cause a driver to "drive a vehicle on a highway in a manner that constitutes driving carelessly" ^[34]. This penalty (\$402 and 6 demerits) is among the highest penalties under the Alberta Traffic Safety Act and Regulations ^[35,36]. Therefore, due to the relative severity of this penalty, police may be reluctant to use this charge except in extreme circumstances. It is not possible to determine how often this charge occurs in relation to distracted driving or cell phone use. Anecdotal evidence suggests this charge is only laid when distraction results in a collision.

It has been suggested that Alberta consider introducing a lesser charge with lower penalties in place of a charge of careless driving when distractions (not only cell phones) affect a person's driving. Alberta Infrastructure and Transportation queried some representatives from Alberta's police services regarding this suggestion. Their initial response indicates a general feeling that police might be more inclined to lay a charge if there was a lesser penalty. However, concern was expressed about the likelihood of conviction given the necessity to prove driver distraction. In this respect, a cell phone ban may be somewhat easier to enforce than legislation for distractions that affect driving behavior. Although it might be somewhat easier to enforce, research finds that compliance requires a commitment to public awareness and continued, publicized enforcement ^[25,26,29,30].

Future Directions

Delegates to the 2005 International Conference on Distracted Driving agreed that current laws related to distracted driving do not adequately address the problem. Legislation alone will not effectively address an issue that goes beyond driving issues to lifestyle issues [2]. Based on the available research and experience it is impossible to conclude that a law banning cell phone use will reduce collision rates over the long term. Especially when the evidence suggests that regardless of a law, a large number of people continue to use cell phones while driving [25,26,29,30].

While driving, one must continuously deal with distractions of varying degrees. Unlike seat belt use, which requires a single brief "click," the persistent nature of driver distractions make it more difficult to influence. The International Conference delegates concluded that research, awareness and education, and cooperative government-industry efforts are essential over the long term to influence attitudes and reduce collisions resulting from driver distraction [2]. The CCMTA STRID Sub-Group on Distraction also recommends enhanced public education around driver distraction [1]. This is only one of the sub-group's ten recommendations for immediate action; the complete list is in Appendix D. The 2006 public opinion survey conducted by TIRF found that, "Canadians overwhelmingly support more educational and awareness efforts on the broader issue of distracted driving [3]." A concerted effort to change public attitudes towards driving while distracted is expected to provide a long-term solution to the issue. However, this approach requires a long-range strategic plan in order to bring about social change.

Public
education is
key to reducing
distracted
driving

As awareness and education is one of the three key strategies to reducing distracted driving, Alberta may wish to proceed by educating children and youth. Currently, schools across Alberta use "Walk the Talk" and "Getting into Gear" materials in their classrooms. These materials could be adapted to include information about the risks associated with distracted driving. There is also some discussion to include distracted driving information in the "Driver's Handbook." This could increase awareness among future drivers that distracted driving is associated with increased crash risk and is not an acceptable behavior.

Some companies have developed policies banning employees from using cell phones while driving, while on duty. This type of policy may assist in overcoming the attitude that an individual must be connected at all times. Initiatives like Work Safe Alberta, which are designed to expand and strengthen partnerships among employers, workers and government in health and safety program development and

injury prevention, could be utilized to reinforce the message that distracted driving is not acceptable [37].

In November of 2006, the Alberta Traffic Safety Plan was unveiled with the mission of saving lives on Alberta's roads. One of the guiding principles of the Plan is to introduce a multi-dimensional "systems approach" which will enhance the safety of the road transportation system. This approach will be based upon research and evidence from the traffic safety literature, best practices and theories in other jurisdictions (where evidence is lacking), behavior change principles, intelligent transportation technology, enforcement, infrastructure and engineering, communications and education. Efforts to reduce distracted driving, including cell phone use should be undertaken within this context.

Conclusion

Driver distraction occurs when the driver's focus is on something other than the primary task of driving. This increases the risk of driver error and collision involvement. Although cell phones attract the most attention, there are many in-vehicle and external sources of driver distraction. In fact, cell phone use is typically associated with lower crash risks than are many other common distractors. For example, interacting with passengers, reaching for a moving object, adjusting entertainment systems, and attending to external events/objects are associated with higher collision risk.

Drivers who talk on a cell phone while driving are four times more likely to be involved in a collision. Although some jurisdictions have implemented a hand-held cell phone ban, evidence reveals that hands-free phones are no safer than hand-held phones. Internationally, some jurisdictions have restricted novice drivers from using cell phones while driving. In Canada, there is public support for restricting GDL drivers from using cell phones; however, this support is not evidence based as the available research finds that all drivers, not just novice drivers increase their collision risk if they use a cell phone while driving.

Despite cell phone bans in over 45 countries, there is no available research suggesting that such legislation has contributed to a reduction in the number of collisions. Internationally, those jurisdictions who continue to run post-legislation public awareness campaigns and who have strict, publicized enforcement campaigns tend to have better, longer-term compliance. However, compliance with cell phone legislation in general is not strong.

In Alberta, police have the option of laying a charge of driving carelessly when driver distractions affect driving performance. In fact, this is the case across Canada as only one jurisdiction has legislation banning the use of cell phones. To date, Newfoundland and Labrador have not conducted research to determine what effect the ban has had on collision frequency.

Although the focus in this report was to consider recently available research related to driver distraction and cell phone use, previous studies have reached very similar conclusions:

- There is little or no difference between using hands-free or hand-held cell phones when driving;
- Competing cognitive processing affects driving behavior;
- There are many sources of driver distraction that reduce driving ability;

- Driver distractions increase collision risk;
- Cell phones are not associated with as much risk as other distractions;
- Public awareness and education is more likely than legislation to reduce distracted driving in the long term.

It is important to consider all the research and information available, as well as the experience in jurisdictions with cell phone bans, before determining whether to develop legislation related to cell phone use while driving in Alberta. Although there are numerous studies linking driver cell phone use with increased collision involvement, there is no evidence that any jurisdiction has achieved high levels of compliance with cell phone bans, and therefore, a reduction in the number of collisions. There is consensus that research, awareness and education, and cooperative government-industry efforts are essential to successfully reducing distracted driving.

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Appendix A - Countries With Cell Phone Bans

Country	Banned	Notes
Australia	Yes	Banned in all states - fines vary though.
Austria	Yes	Fines vary - up to US\$22 per incident
Bahrain	Yes	Offenders face fines - possibly prison
Belgium	Yes	Phones can be used without a hands-free unit when the car is stationary - but not while in traffic (such as at traffic lights)
Brazil	Yes	Ban imposed Jan 2001
Botswana	Being debated	The attorney general is drafting the legislation
Canada	Variable	Banned in Newfoundland (Dec 2002) fines up to US\$180. Discussed again Oct 2006.
Chile	Yes	
China	Yes	Reported to be covered by general "good driving practice" legislation.
Czech Republic	Yes	
Denmark	Yes	Ban imposed Jul 1998 - US\$60 fine for infringements
Egypt	Yes	Fines of about US\$100 per offence.
Finland	Yes	Ban imposed Jan 2003 - US\$55 fine for infringements
France	Yes	Banned 2003, EUR40 fine per infraction
Germany	Yes	Ban imposed Feb 2001 - usage allowed without a hands-free unit only when the engine is switched off. Fine of 40 per infraction
Greece	Yes	
Hong Kong	Yes	
Hungary	Yes	Not often implemented by the police
India - New Delhi	Yes	New Delhi - Ban extended to ban all use of cell phones when driving, including use with a hands-free unit - Jul 2001. Andhra Pradesh - Ban now enforced with prison sentences
Ireland	Yes	Banned, with a US\$380 and/or up to 3 months imprisonment on a third offence. Hands-free kits allowed, although that is subject to review.
Isle of Man	Yes	Banned since Jul 2000
Israel	Yes	

Country	Banned	Notes
Italy	Yes	Fines of up to US\$124 per infraction
Japan	Yes	Ban imposed Nov 1999
Jersey	Yes	Ban imposed Feb 1998
Jordan	Yes	Ban imposed Oct 2001
Kenya	Yes	Ban imposed late 2001
Malaysia	Yes	
Mexico	Partial	Ban in Mexico City
Netherlands	Yes	Fines up to €2,000 or two weeks in jail
New Zealand	Being debated	Under debate - consultation being sought from interested parties
Norway	Yes	Fines of over \$600 per infraction
Pakistan	Partial	Banned in Islamabad
Philippines	Yes	
Poland	Yes	Fines can be as high as US\$1,000
Portugal	Yes	
Romania	Yes	
Russia	Yes	Ban imposed by Prime Minister - Mar 2001
Singapore	Yes	
Slovak Republic	Yes	
Slovenia	Yes	
South Africa	Yes	
South Korea	Yes	Ban imposed Jul 2001 - US\$47 fine + 15 points on the license.
Spain	Yes	
Sweden	Yes	
Switzerland	Yes	
Taiwan	Yes	If the driver is using a reflective screen on the car, local privacy laws forbid stopping the car for violating the ban.
Thailand	Yes	Bill proposed in May 2000
Turkey	Yes	
Turkmenistan	Yes	Signed into law with effect from May 2003, by President Saparmyrat Turkmenbasy
UK	Yes	Banned from Dec 2003
Zimbabwe	Yes	Ban imposed in Sept 2001, announced via official news agency only though, so not confirmed

Source: http://www.cellular-news.com/car_bans/

Appendix B - United States Cell Phone Policies by State

State	Hand-Held Ban	Hand-Held and Hands-Free Cell Phone Ban
Alabama	no	no
Alaska	no	no
Arizona	no	school bus drivers
Arkansas	no	school bus drivers
California	yes (effective 07/01/08)	school and transit bus drivers
Colorado	no	learner's permit holders
Connecticut	yes	learner's permit holders, drivers younger than 18, and school bus drivers
Delaware	no	school bus drivers and learner's permit and intermediate license holders
District of Columbia	yes	school bus drivers and learner's permit holders
Florida	no	no
Georgia	no	school bus drivers
Hawaii	no	no
Idaho	no	no
Illinois	by jurisdiction	learner's permit holders, drivers younger than 19, and school bus drivers (effective 01/01/08)
Indiana	no	no
Iowa	no	no
Kansas	no	no
Kentucky	no	school bus drivers
Louisiana	no	no
Maine	no	learner's permit and intermediate license holders
Maryland	no	learner's permit and intermediate license holders
Massachusetts	by jurisdiction	school bus drivers
Michigan	by jurisdiction	no
Minnesota	no	learner's permit holders and provisional license holders during the first 12 months after licensing
Mississippi	no	no
Missouri	no	no
Montana	no	no
Nebraska	no	learner's permit and intermediate license holders younger than 18 may not use a cellphone or other wireless communication device (effective 01/01/08)

State	Hand-Held Ban	Hand-Held and Hands-Free Cell Phone Ban
Nevada	no	no
New Hampshire	no	no
New Jersey	yes	school bus drivers and learner's permit and intermediate license holders
New Mexico	by jurisdiction	no
New York	yes	no
North Carolina	no	Drivers younger than 18 (effective 12/01/06) and school bus drivers (effective 12/01/07)
North Dakota	no	no
Ohio	by jurisdiction	no
Oklahoma	no	no
Oregon	no	learner's permit and intermediate license holders (effective 01/01/08)
Pennsylvania	by jurisdiction	no
Rhode Island	no	school bus drivers and drivers younger than 18
South Carolina	no	no
South Dakota	no	no
Tennessee	no	school bus drivers and learner's permit and intermediate license holders
Texas	no	bus drivers when a passenger 17 and younger is present; intermediate license holders for first six months
Utah	no	Note: driver distraction specifically covered under careless driving laws
Vermont	no	no
Virginia	no	intermediate license holders
Washington	text messaging prohibited (eff. 01/01/08); hand-held ban (effective 07/01/08)	no
West Virginia	no	learner's permit and intermediate license holders
Wisconsin	no	no
Wyoming	no	no

Source: <http://www.iihs.org/laws/cellphonelaws.aspx>

Appendix C - Summary of Canadian Survey

Summary of Canadian* Legislation, Public Awareness and Research Related to Cell Phone Use While Driving September 2007

Province	Applicable Legislation				Current Public Awareness Campaign	Research & Analysis Conducted
	Handheld Ban For All Drivers	Driver Specific Ban	Careless Driving	Considering Legislation		
BC			Y	Under Review	Y	Public Opinion Survey and Prevalence Study
AB			Y	Under Review		Driver Distraction Review - Focus on Cell Phones
SK			Y		Y	
MB		Taxi Drivers	Y	Action Fall 2007	Y	Driver Distraction Review - Focus on Cell Phones
ON			Y			
QC			Y	Expected in 07/08		
NB			Y			
PE		GDL Drivers***	Y		Y	
NS			Y	Under Review		
NL	Y					
NT			Y	Under Review**		
YT			Y	Under Review		

*Because cellular service is unavailable throughout most of Nunavut, cell phone use while driving is not currently an issue.

**As part of their overall traffic safety initiative review, driver cell phone use is being reviewed; however, it is not a major issue for NT at this time.

***Applies to Stage 1 and newly licensed GDL drivers.

Appendix D - STRID Recommendations for Immediate Action

The Canadian Council of Motor Transport Administrators (CCMTA), Strategy to Reduce Impaired Driving (STRID), Sub-Group on Distraction has identified the following recommendations from the complete set for immediate implementation or action:

- 1) Assess the distracting potential of current and emerging technologies for devices designed as original equipment, as well as after-market devices
- 2) Monitor public opinion, attitudes and behaviour regarding the issue of driver distraction on a regular basis
- 3) Develop educational materials specifically to guide the use of emerging telematic systems in vehicles
- 4) Provincial and territorial authorities should include a section on distracted driving in their driver's licence manuals
- 5) Initiate/continue dialogue between Transport Canada and provincial/territorial governments on regulatory options to ensure consistency of information/legislation/regulation and practice across Canada
- 6) Determine and recommend best practices for provincial regulations to address dangerous instances of driver distraction and the use of aftermarket devices
- 7) Encourage employers to adopt policies for their employees to reduce potential driving distractions
- 8) Support a joint government-industry memorandum of understanding on the safety of telematic devices
- 9) Ensure that the strategy has the full support and commitment of all key players and engage key players in the implementation of the strategy work plan
- 10) Encourage cooperation among stakeholders in the sharing of resources and in order to reach as broad an audience as possible

Retrieved: September 17, 2007

Source: <http://www.ccmta.ca/english/committees/rsrp/strid-distraction/strid-distraction-strategy.cfm>