DISTRACTED DRIVING & WORKPLACE SAFETY POLICIES: A Business Case for Employers

Canadian Coalition on DISTRACTED DRIVING

TIRF

The Traffic Injury Research Foundation

The mission of the Traffic Injury Research Foundation (TIRF) is to reduce traffic-related deaths and injuries. TIRF is an independent, charitable road safety research institute. Since its inception in 1964, TIRF has become internationally recognized for its accomplishments in identifying the causes of road crashes and developing program and policies to address them effectively.

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Drop It And Drive® (DIAD) is a Traffic Injury Research Foundation (TIRF) education program focused on preventing distraction-related road user fatalities and injuries. DIAD works with employers to make the workplace safer, protect the health of their workforce and increase community road safety, and delivers school seminars to youth. Since 2010, DIAD has delivered seminars to more than 60,000 workers and youth across North America.

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A Business Case for Employers

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Introduction

Motor vehicle collisions are a leading cause of traumatic workplace deaths in transportation, construction and health care industries. Fatalities and serious injuries resulting from distraction impose immeasurable personal costs on families and communities. Moreover, businesses are adversely affected by resulting economic losses due to employee absenteeism (due to injuries), damaged equipment and/or destroyed goods. These costs are exponential when roadways are closed, and goods are delayed and/or cannot be transported before they perish.

Preventing distraction-related crashes in the workplace is a top priority for businesses. To assist employers in strengthening workplace safety programs, the Traffic Injury Research Foundation (TIRF) and its Drop It And Drive® (DIAD) program, in partnership with The Co-operators, developed this business case. Diverse expertise was gathered from members of TIRF's Canadian Coalition on Distracted Driving (CCDD) and a broad range of stakeholders who attended the 3rd Annual Meeting. TIRF also worked closely with the Canadian Trucking Alliance (CTA), Private Motor Truck Council of Canada (PMTC), and the Infrastructure Health and Safety Association (ISHA) to refine the business case with a focus on the transportation industry.

This business case describes the costs of prevention programs and compares them to collision costs. It illustrates the value of integrating distracted driving policies into workplace safety programs and reinforcing them in day-to-day safety practices. It also contains a Call to Action for employers in this industry to implement distracted driving policies as a standard component of workplace safety programs. Tools are included to help employers estimate the costs to their business and quantify the value of distracted driving safety policies. This step can protect their staff and improve safety in the communities where they live and work.

Types of Costs & Valuation Models

The consequences, and thereby the costs of distracted driving behaviours and collisions are generally classified according to direct or indirect costs. Direct costs are immediate, tangible and can be assigned a quantifiable value whereas indirect costs are more intangible, may occur over an extended period, and are more difficult to assign a value. The aim is to demonstrate how much money would be saved if crashes were prevented. For the purposes of this report, the Real Dollar Estimates Model[1] has been utilized because these types of costs are most readily available and conservative in value. Costs are presented according to three distinct chronological periods: crash scene, post-crash short-term and post-crash long-term.

Distracted Driving Prevention Costs

Investment in preventing distracted driving in the workplace has tremendous benefits for employers. While the development and implementation of orientation and training programs, new safety technologies, and workplace safety programs cost employers in terms of financial and human resources, distracted driving collisions cost employers, and the whole transportation industry more, and are entirely preventable. There are three primary reasons employers should invest in distracted driving prevention:

- Investment creates a tremendous return on investment.

[1] Real Dollar Estimates Model aims to quantify costs incurred as a direct result of crashes; in other words, how much money would be saved if crashes were prevented or avoided. This model includes tangible, clearly understood, and readily available costs that can be directly linked to the collision, such as police, fire and ambulance services, property damage, medical expenses, legal expenses, travel delay costs and the costs associated with lost time from the workplace. To this end, results of a 2018 Alberta study of collision costs in the Capital Region estimated the direct costs of a fatal collision at $225,558. In addition, an injury collision was estimated to cost $48,341 whereas a property damage only (PDO) crash was estimated to be $14,065 (de Leur 2018). However, this model does not account for broader harm to the society resulting from a crash such as losses in terms of productivity and quality of life or the emotional stress that results from collisions (Manitoba Public Insurance 2016).

- Investment creates the foundation for a strong safety culture and safety record that attracts employees.
- Failure to invest in prevention results in much greater liability and costs.

Aside from the intangible value of prevention activities that is not easily quantified, there are many tangible investment costs which create a return on investment, including:

- **Driver training and orientation programs and materials.** This is a key investment for employers and costs are typically a function of four factors:
  - the level and length of training that is required for new employees;
  - annual or biannual driver training of drivers currently in the workforce;
  - whether transportation companies develop their own training program or use a subscription-based service; and,
  - whether companies have dedicated full-time or part-time orientation staff.
- **Safety equipment and technologies.** Investments in tie-downs, reflective vests, and flares to warn oncoming traffic of lane reductions or disabled vehicles have long-been standard safety equipment, however, in the last decade, several new safety technologies are rapidly being adopted such as:
  - mobile and phone applications that discourage distracted driving;
  - vehicle safety features such as lane-departure and forward-collision warning systems, automatic braking, and electronic stability control are most common; and,
  - driver monitoring technologies, including electronic logging devices and forward-facing cameras, are increasingly adopted and create opportunities for coaching and there is some evidence they result in fewer collisions involving entry-level drivers.
- **Workplace safety programs.** Costs for these programs vary according to company size so quantifying these costs can be challenging. However, most employers recognize they are important components of their operational budget, and consist of:
  - in-cab training;
  - general safety messages reinforcing practices;
  - online training programs; and,
  - post-incident defensive driver training programs.

Employers are encouraged to consider tracking important measures of distracted driving incidents to improve safety. Sharing these measures internally can help to focus attention on the importance of this issue and inform the development of workplace safety programs. Key metrics include: the number of distracted driving incidents, the number of drivers involved in these incidents, the number of near misses involving distracted driving, and the immediate crash costs of each of these incidents.

Distracted Driving Collision Costs

Costs related to distracted driving crashes can occur during three distinct chronological periods.

- Crash costs are incurred immediately following a collision:
  - vehicle damage;
  - towing costs;
  - loss or damage to goods;
  - cost of staff attending collision scene;
  - environmental costs (e.g., paying to clean up after a spill); and,

    - public relations and media coverage.
- Short-term crash costs are incurred within 30 days of a collision:
    - traffic tickets for driving violations;
    - legal costs;
    - fuel loss from idling during traffic delays;
    - time lost due to road closures or traffic delays (trucking industry);
    - temporary replacement of employees;
    - payments to workers' compensation as a result of a Ministry of Labour investigation;
    - repair or replacement of vehicles; and,
    - interruptions in the supply chain of goods and/or parts.
- Long-term costs are incurred more than 30 days after a violation or collision:
    - increased insurance premiums;
    - increased health insurance for employees;
    - legal costs; and,
    - replacing employees who may have been killed or injured.

Call to Action

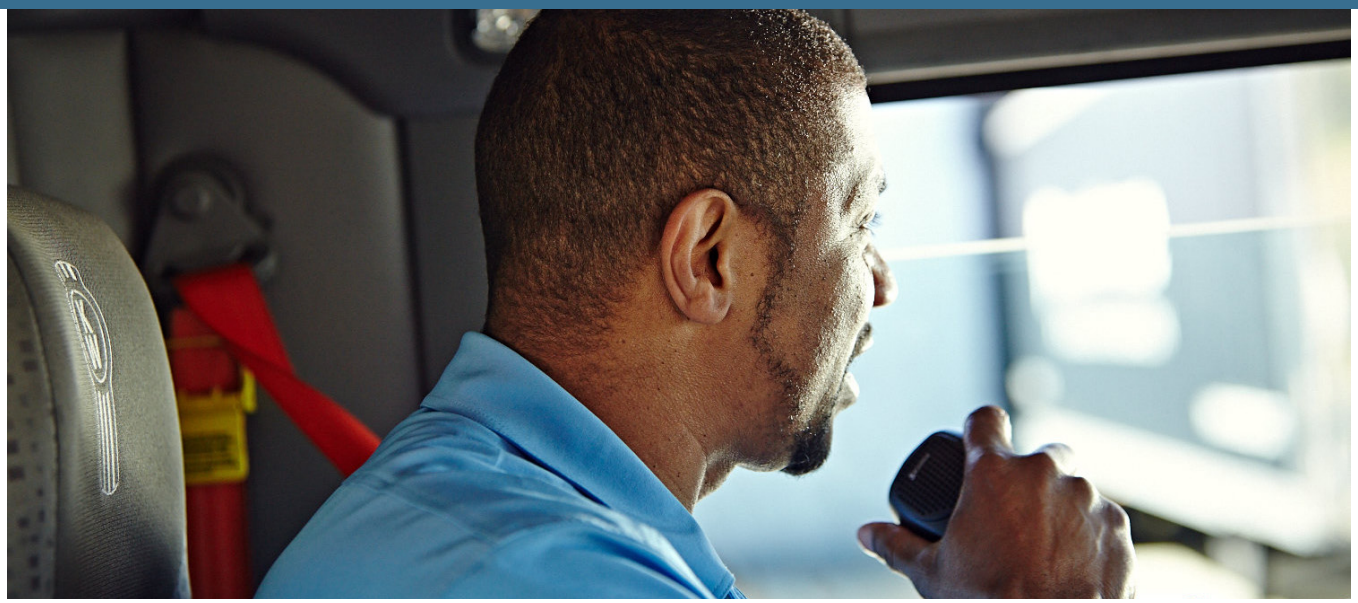
Distracted driving is a factor in one in four fatal crashes and is one of the most common behaviours that contribute to road crashes. These costs are substantial, and according to industry leaders, the greatest costs include the liability and exposure to litigation; onsite cleanup, towing, and repairs; insurance costs; and negative publicity.

However, these are not just numbers. Distracted driving collisions are preventable. To help place the costs in context, employers are encouraged to use the data and estimates shared in this report along with knowledge of their own company costs to calculate how much a single distracted driving collision may potentially cost them. This cost can be compared to the amount of money that employers invest in prevention, which is assuredly much lower.

All employers in the transportation industry have an important role to play in reducing distracted driving collisions. Leadership from both large and small companies is essential. The value of a distracted driving workplace policy is clear, and most employers who have implemented cell phone bans and distracted driving policies report that it does not negatively impact productivity.

Employers that do not yet have a distracted driving policy in place should make this a priority. Employers with a policy in place should focus attention on its implementation, ensuring that it is reinforced through operational practices, and integrated with safety and training programs. Engaging employees to identify potential risks as well as solutions is a critical step to fit the features of the policy to the functions of the workplace.

In summary, employers agree, "If anyone thinks safety is too expensive, they need to measure the cost of an unsafe operation, workplace injuries and fatalities against the cost of education and effective policies."



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1. INTRODUCTION

Preventing and reducing distraction-related crashes in the work environment is an increasing priority across businesses in private and public sectors. Fatalities and serious injuries resulting from distraction have immeasurable personal costs for families and communities, as well as colleagues. In addition, businesses can suffer economic losses due to employee absenteeism related to injuries and damaged or destroyed goods. These costs are exponential when roadways are closed such that goods are delayed and/or cannot be transported before they perish.

Costs are also absorbed by a substantial number of agencies that are supported by tax dollars. Ultimately, costs borne by society through increases in taxes as well as costs for services and the magnitude of the problem is substantial.

- Motor vehicle collisions were the leading cause of traumatic workplace deaths in the transportation, construction and health care industries combined, according to WorkSafeBC in British Columbia. Between 2012 and 2016:
  - 344,184 total work days were lost, and claims were paid in the amount of $185,310,378.
  - 21 workers are killed and more than 1,300 are injured and are absent from work on average each year due to work-related crashes.

In the transportation, construction and health care industries combined, motor vehicle collisions were the leading cause of traumatic workplace deaths in British Columbia.

  - 33% of all work-related traumatic deaths in the province were due to collisions.
  - 62% of all claims involved transport truck drivers in the transportation sector alone.
  - 621 serious injury claims, and 59 accepted work-related deaths occurred which resulted in 3,369 total time-loss claims accepted for short- or long-term disability or survivor benefits during the year that the injury occurred or within the first quarter of the following year (WorkSafeBC 2018).
- Almost two of five (39%) persons dying in traumatic workplace incidents in 2017 were killed in motor vehicle collisions, according to the Workplace Safety and Insurance Board (WSIB) in Ontario (WSIB 2018a). And in Ontario, workers employed in the transportation and storage industries had

the highest rate (81.5 per 100,000 population) of workers who suffered traumatic brain injuries in the workplace (Colantonio et al. 2010).

- Almost one in three (29%) of persons killed in traumatic workplace incidents in Saskatchewan in 2018 were killed in motor vehicle collisions, according to Saskatchewan Government Insurance (SGI). From 2008 to 2018, an average of 23% of traumatic workplace fatalities were due to motor vehicle collisions (SGI 2019).
- Among acute hazard and occupational disease fatalities from 2008 to 2017, 21% were the result of motor vehicle incidents, according to SAFE Work Manitoba. An examination of the distribution of fatalities by occupation reveals 12% were truck drivers (SAFE Work Manitoba 2018).
- Transportation-related incidents were reported to account for 41% of workplace fatalities in the United States in 2015 (Lundin 2017).
- In the United States, it has been estimated that road crashes are the leading cause of occupational fatalities (Centers for Disease Control and Prevention 2011).
- Non-commercial drivers in field sales positions or other employees who drive for service calls, meetings, events and job-related errands are similarly exposed to crash risks as commercial drivers. In a U.S. study which matched work-related fatal crash data in 2010 from the Census of Fatal Occupational Injuries (CFOI) with that of the Fatality Analysis Reporting System (FARS), it was determined that 51% of these victims were in transportation and material moving operations (Byler et al. 2016).

More specifically, distracted driving has become a primary focus of road safety planning in jurisdictions across Canada as these fatalities have surpassed impaired driving fatalities in several jurisdictions[2] (Robertson et al. 2017). The most current national data indicate:

- In 2016, more than 300 people were killed in Canada due to distracted driving crashes according to TIRF's National Fatality Database (Brown et al. 2019).
- There are few differences between distracted drivers in terms of driver age or sex.

In 2016, more than 300 people were killed in Canada due to distracted driving crashes.

- Other road users are more often killed in distracted driving collisions, as opposed to the distracted driver (Brown et al. 2019).
- An estimated 23% of fatal crashes and 28% of major injury crashes in Canada involved distraction as a contributing factor in 2015 (Transport Canada 2018).
- 33 of 548 fatalities (6%) involving large truck occupants in 2016 in the United States reported distraction on the part of the driver of the large truck (FMCSA 2017).

In the past five years, many jurisdictions have introduced escalating fines and penalties in conjunction with initiatives to increase awareness and strengthen data collection. Legislation and regulation implemented by governments are proven tools that can have positive benefits. However, it can take considerable time to put these tools in place.

Enforcement is another tool to reduce distracted driving, and more recently police services have pursued charging at-fault drivers with criminal negligence causing injury or death. However, maintaining high levels of enforcement is resource-intensive and difficult to sustain for police services that face competing road safety and enforcement priorities. More importantly, industry leaders agree that they simply cannot wait for change.

[2] Some of this increase may be due to improvements in data collection in the past four years.

Employers in the transportation industry can effect change today by working cooperatively and providing leadership to raise industry safety standards. Training opportunities combined with the use of technologies are important areas where employers can take action to discourage complacency on the road. Workplace policies enforced by employers, and reinforced by police, can help transportation companies avoid the costs of distracted driving collisions.

This document is designed to inspire employers to take preventive action to reduce distracted driving in the workplace because, ultimately, the whole industry pays for collisions.

This document is designed to inspire employers to take preventive action to reduce distracted driving in the workplace because, ultimately, the whole industry pays for collisions.

This report summarizes available data that quantify the costs of distracted driving to individual companies. More importantly, it illustrates the value of integrating distracted driving policies into workplace safety programs and reinforcing these policies in day-to-day safety practices. Topics included are as follows:

Section 1 introduces the topic and describes the magnitude of the problem.

Section 2 describes the valuation model used as well as direct and indirect costs.

Section 3 explores the costs of distracted driving prevention and workplace safety programs.

Section 4 examines estimates of direct and indirect costs of distracted driving incidents.

Section 5 summarizes the findings and presents a call to action for transportation companies.

Appendix A contains a checklist for transportation companies to estimate the potential costs of a distracted driving collision to their own business which can be compared to the cost of up-front investments in training and workplace safety programs as well as general education programs.

The costs and estimates described in this report are shared to give employers insight into the potential consequences of distracted driving behaviours and collisions. This information can help employers create a more detailed business case that is specific to their respective company.

Of importance, some of these costs are not necessarily comparable since they have been compiled from a wide range of publications. While some data sources contained actual costs that are reported by some organizations, other data sources relied on projected costs that were developed for specific purposes. Similarly, some costs are based on all road crashes whereas other costs are specific to distracted driving crashes.

2. TYPES OF COSTS & VALUATION MODULES

The consequences, and thereby, the costs of distracted driving behaviours and collisions are generally classified according to direct or indirect costs. Direct costs are immediate, tangible and can be assigned a quantifiable value whereas indirect costs are more intangible, may occur over an extended period, and are more difficult to assign a value. The types of costs assigned to each category and included in this report are as follows:

- **Direct costs:**
  - vehicle damage or equipment repair and replacement;
  - lost or damaged goods or infrastructure;
  - higher insurance premiums;
  - fines imposed on drivers and/or employers;
  - legal costs; and,
  - medical costs related to health services.

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- **Indirect costs:**
  - reduced productivity due to a loss of skill and workplace efficiency;
  - training costs associated with hiring replacement workers;
  - collision paperwork;
  - civil suits resulting from collisions; and,
  - replacement of lost or damaged goods.

Other indirect costs are more difficult to quantify, such as declines in employee morale and unfavourable publicity for companies involved in a distracted driving collision. While some sources estimate that indirect costs can amount to between five to 50 times the amount of direct costs of collisions (Fellenstein 2013), more conservative estimates suggest the proportion of indirect to direct costs to be almost equal. For example, Parachute (2015) estimated the costs of injuries resulting from collisions to be $2.145 billion for direct costs versus $2.144 billion for indirect costs.

Of course, placing a monetary value on the loss of employment, mobility or life is quite challenging because while methods to calculate these damages are available, resulting estimates are highly variable and often debated (BTE 2000).

For the purposes of this report, the Real Dollar Estimates Model[3] has been utilized as these types of costs are most readily available and conservative in value. This model is also best-suited to enable employers to identify and estimate the quantifiable costs that distracted driving behaviours and collisions can have on their business. The costs associated with each of the three chronological periods directly impact employers and may be passed on to consumers in the form of increased costs for products and services.

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Chronological periods

Costs associated with distracted driving behaviour, violations and collisions are structured according to three distinct chronological periods:

- **Crash scene.** Costs in this category are expenditures that result directly and immediately within hours of a collision.
- **Post-crash short-term.** Costs in this category are comprised of expenses that are a direct result of a crash and that are incurred within 30 days of a collision.
- **Post-crash long-term.** Costs in this category encompass expenses that are incurred more than 30 days following a collision.

Data limitations

There are important caveats to the interpretation of data presented due to limitations associated with data sources, including:

- Projected costs using crash rates assume that the cost of a distracted driving collision is equal to the cost of other types of road crashes with similar severity, although there may be jurisdictional variations in terms of the cost of policing, on-scene visits by first responders, hospitalization, and the economic impact of road closures.
- Where data are available, costs for property damage, injury and fatal crashes are included. However, for most items data are not differentiated by crash severity. Unless otherwise indicated, costs will be based upon crashes of all severities, meaning that the average cost is provided although there are substantial differences between the costs of fatal crashes versus property damage crashes.
- Data regarding the total cost of all road crashes are most often available in published reports. As such, many of the estimates presented in this report are based on the proportion of all fatal crashes that are attributed to distracted driving. For example, if the cost of a fatal collision is estimated at $4 million, and approximately 25% of fatal collisions involve distraction, then 25% of all fatal collisions are attributable to distracted driving and the projected cost is $1,000,000.

[3] Real Dollar Estimates Model aims to quantify costs incurred as a direct result of crashes; in other words, how much money would be saved if crashes were prevented or avoided. This model includes tangible, clearly understood, and readily available costs that can be directly linked to the collision, such as police, fire and ambulance services, property damage, medical expenses, legal expenses, travel delay costs and the costs associated with lost time from the workplace. To this end, results of a 2018 Alberta study of collision costs in the Capital Region estimated the direct costs of a fatal collision at $225,558. In addition, an injury collision was estimated to cost $48,341 whereas a property damage only (PDO) crash was estimated to be $14,065 (de Leur 2018). However, this model does not account for broader harm to the society resulting from a crash such as losses in terms of productivity and quality of life or the emotional stress that results from collisions (Manitoba Public Insurance 2016).

- There are differences across Canadian jurisdictions in terms of a minimum reporting threshold for property damage collisions.
- Other jurisdictional disparities in determining crash costs result from how compensation boards count lost time. For instance, some of these boards count a lost-time injury when a worker misses their next scheduled shift due to their injury while other boards count lost-time injuries when an injured worker leaves their current shift (Taylor and Keefe 2018). The Treasury Board Secretariat Policy on Cost-Benefit Analysis also provides guidance regarding estimates for the value of statistical life (VSL).[3]
- Costs of specific technologies have been estimated based upon consultation with experienced industry professionals. These estimated costs can vary due to fleet size, number of drivers, level of services provided, and other factors.

As such, direct comparisons of individual costs in this report are not practical.

[3] https://www.canada.ca/en/treasury-board-secretariat/services/federal-regulatory-management/guidelines-tools/policy-cost-benefit-analysis.html

3. COSTS OF DISTRACTED DRIVING PREVENTION & WORKPLACE SAFETY

Investment in the prevention of distracted driving in the workplace has tremendous benefits for employers. It is generally accepted that the development and implementation of orientation and training programs, new safety technologies, and workplace safety programs cost employers in terms of financial and human resources. However, distracted driving collisions, which are entirely preventable, cost employers, and the whole transportation industry, more.

In fact, the costs associated with distracted driving incidents are not limited to the time of the crash event and are instead far-reaching. Employers can expect to incur costs over a period of months, if not years, that can impact all areas of their business. Smaller companies have the most to lose since the cost of one distracted driving collision could possibly lead to bankruptcy.

Fleets across Canada have different customer bases. The Private Motor Truck Council of Canada (PMTC) represents private and dedicated contract truck fleets. Its members deliver food products, consumer packaged goods, and building and construction materials. The PMTC also represents electric and telecommunication utility providers, municipal public works departments, and waste management services. The PMTC estimates that although some member companies have 1,000 trucks, other members have only one truck (PMTC 2019). The Canadian Trucking Alliance (CTA) is a federation of provincial trucking associations. It represents about 4,500 carriers and industry suppliers. The CTA estimates that 32% of its member companies have 20 or fewer trucks in their fleet (CTA 2019).

There are three important reasons that employers should invest in distracted driving prevention:

- Investment creates a tremendous return on investment.
- Investment creates the foundation for a strong safety culture and safety record that attracts employees.
- Failure to invest in prevention results in much greater liability and costs.

Investment creates a tremendous return on investment. Employer investments in prevention activities are not easily quantified. In the transportation industry, employers measure prevention activities more often in terms of the return on investment (ROI) as opposed to actual dollar value. More precisely, ROI is quantified in terms of employee retention and the avoidance of crash costs which result in lower insurance and legal costs. Of course, while the monetary cost-benefit value of prevention activities is indeed important, it is not as compelling as some of the intangible benefits that can be achieved. According to

many employers, "safety doesn't cost; it pays," and investment translates into less turnover and higher retention rates of qualified and skilled drivers in an industry with a shrinking pool of potential candidates.

Investment creates the foundation for a strong safety culture and safety record that attracts employees. There is widespread consensus in the transportation industry that the creation of a safety culture starts at the top with the development and implementation of safety policies. To date, some employers have raised concerns that distracted driving policies may negatively impact productivity and have even exempted some operational staff, such as their field sales teams, from distracted driving policies. This is concerning because the high number of work-related miles travelled by employees in mobile sales operations increases their exposure and crash risk as compared to other employees (National Safety Council 2015).

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In fact, a report by the National Safety Council showed that policies restricting both handheld and hands-free cell phone use by drivers did not have a negative impact on productivity. Most employers with total ban cell phone policies reported that it did not adversely impact productivity; in fact, some of them acknowledged that productivity improved (National Safety Council 2015):

- In a 2010 survey of Fortune 500 companies that had implemented total cell phone bans, only 7% of respondents said productivity decreased, while 19% thought productivity actually increased. (National Safety Council 2011). To illustrate, when an international engineering firm with a large professional field force (AMEC), implemented its total cell phone ban, more than half of employees expected productivity to decrease. In sharp contrast, after employees adjusted to the ban, 96% reported productivity stayed the same or increased. (National Safety Council 2015, Distracted Driving Symposium 2008).

Moreover, some employers have further implemented workplace policies that specify drivers can face sanctions for distracted driving irrespective of whether the violation was detected by enforcement officials or by the employer.

The implementation of day-to-day operational practices to reinforce policies is equally essential. According to some industry employers, safety programs should not only exceed minimum standards but also promote best practices and continual improvement. To be effective, employees must truly believe that they are able to speak up and identify risky situations. For example, some trucking companies have encouraged drivers to make safe choices about their ability to drive a route or deliver a load. When a driver reports that weather or road conditions are poor, or they feel fatigued, the company contacts the customer to advise them that the delivery may be delayed for safety reasons. Some companies that have this practice in place report that customer complaints regarding a late delivery were greatly reduced when they were told that the delay was due to safety concerns.

According to some industry employers, safety programs should not only exceed minimum standards but also promote best practices and continual improvement.

Failure to invest in prevention results in much greater liability and costs. Employers equally recognize the liability that can result from not having a distracted driving policy, or merely failing to enforce it. In fact, a growing number of transportation companies take safety one step further and promote the importance of safety policies beyond the workplace because drivers who suffer distraction-related injuries on personal time are just as costly and difficult to replace. As such, the safety culture of a company should not be restricted to the driver's seat or the workplace. Companies that adopt safety policies designed to protect employees and their families both on and off the job report positive impacts on employee retention (Short et al. 2007).

Ultimately, the whole industry pays for collisions and this fact has made the widespread integration of distracted driving policies and practices across the transportation industry a top priority for employers.

Companies that adopt safety policies designed to protect employees and their families both on and off the job report positive impacts on employee retention.

Even transportation companies with the strongest safety records are still adversely affected by collisions involving large trucks in the form of negative publicity and increased insurance costs. For private fleets, these collisions can also substantially damage the company brand of the goods they are transporting. Of greatest concern, failure to adopt prevention initiatives or enforce distracted driving policies costs companies in terms of employee retention as professional drivers are reluctant to work for companies that place them at risk.

Prevention costs

Aside from the intangible value associated with prevention activities that cannot be quantified, there are a variety of tangible costs associated with an investment in safety. These costs include:

- driver training and orientation programs and materials;
- safety equipment and technologies; and,
- workplace safety programs.

The most notable costs associated with distracted driving prevention in each of these areas are briefly described in more detail below. Of course, while investment in each strategy is also related to a much broader and more generalized company safety program, it is noted that a portion of these costs is specifically associated with distracted driving prevention efforts.

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3.1 Driver training and orientation programs and materials

A key investment for employers in the transportation industry is the cost of implementing driver training and orientation programs. The cost of these programs is often a function of four factors:

- the level and length of training that is required for new employees;
- annual or biannual driver training of drivers currently in the workforce;
- whether transportation companies develop their own training program or use a subscription-based service; and,
- whether companies have dedicated full-time or part-time orientation staff.

Initial orientation for new drivers varies substantially after they have successfully completed provincial training requirements and obtained a commercial vehicle driver's licence. Presently, many companies find it challenging to hire a driver under 25 years of age. Smaller companies may be more challenged to offer formal training programs and instead offer on-the-job training with an experienced driver. Training periods can vary in length before drivers are permitted to drive independently. Larger carriers may require the completion of in-house classroom driver training programs that can range from 16 hours to three to four days, or a series of online training hours or courses. Mandatory entry level training (MELT) is being implemented across Canada for those wishing to obtain commercial vehicle licences. The MELT program was first introduced in Ontario in July 2017. Prior to taking the road test, an applicant must first complete the MELT program which consists of 103.5 hours of training (36.5 hours of classroom training, 17 hours of yard training, 32 hours of on-road training and 18 hours of off-road training behind the wheel).

More recently, Saskatchewan and Alberta introduced MELT programs in March 2019 and the MELT program was introduced in Manitoba in September 2019.

Level and length of training. An orientation period of 16 hours (two 8-hour sessions) may be required for new drivers. New drivers may complete an introductory training program that lasts between one to 12 weeks depending on their knowledge and skill which is determined by initial assessment and pre-screening. The estimated cost for both the new driver and the trainer ranges from $150 and $200 per hour per driver as a truck and trailer are out of service during training.

Classroom training may be followed by days, weeks, or even months of in-cab training, and the safety record of new drivers may be reviewed at 15, 45 and 90 days. Companies with training officers may also conduct random inspections and ride-along with drivers to observe safety practices. Some private fleet employers may send new drivers to a professionally certified training school.

Annual or biannual training of drivers currently in the workforce. Medium and larger carriers may also require the completion of continuing education and training opportunities either annually or bi-annually. These initiatives may focus on sharing updates and refreshing driving skills, describing changes to regulation, policy and legislation and include a variety of tools.

In-house vs subscription-based training and staff. Larger transportation companies measure training costs on a per-employee basis and estimate an average of $2,100 is spent training each driver. Depending on size, larger companies may have one or two dedicated staff to deliver training and/or develop training programs that can be uploaded to an internal website and accessed by all employees. However, more companies rely on subscription-based services, such as Carriers' Edge and JJ Keller, that include a training component for a per-driver subscription cost. Some employers have noted that this can be a more cost-efficient way to deliver high-quality training for drivers.

Examples of training. More employers in the commercial trucking industry are teaching new drivers about the risks and consequences of distracted driving as part of entry-level driver education and training programs. These programs may involve classroom and in-vehicle components, and, increasingly, a clear connection is made between orientation sessions and workplace safety policies. For example, as part of initial training, some companies instruct drivers not to respond to customer calls/texts until it is safe to do so (e.g., pulled over safely out of the flow of traffic with the vehicle in park) and then make the link with workplace policies (CTA 2017b).

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The cost to implement standard prevention training for all new employees is still less than the cost of post-incident training for the small number of employees that may require it.

An emphasis is placed on helping new drivers identify distractions in the workplace, recognize when they are distracted, and avoid or minimize distractions behind the wheel (Robertson & Brown 2017). For example, students at the New England Tractor Trailer Training School are taught that the first step to preventing distracted driving is to recognize and be aware of hazards in the workplace (Knodler et al. 2017). Bison Transport uses a driver training simulator to show its employees the dangers of distracted driving. In addition, a video has been released which shows professional drivers taking a driving test on a simulator (CTA 2017c). Liberty Linehaul provides safety training videos that they share with all employees on their intranet (see Appendix B).

To put the costs of prevention training in perspective, employers agree that the cost to implement standard prevention training for all new employees is still less than the cost of post-incident training for the small number of employees that may require it.

3.2 Safety equipment and technologies

Investments in safety equipment such as extra tie-downs, reflective vests, cones and flares to warn oncoming traffic of lane reductions or disabled vehicles have long-been standard equipment in large trucks. However, in the last decade, a variety of new safety technologies are rapidly being adopted by transportation companies. Examples include:

- **Mobile applications** that discourage distracted driving may be installed in company vehicles. Some of them silence cellphones while the vehicle is in motion.
- **Vehicle safety features** such as lane-departure warning systems and forward-collision warning systems have been increasingly adopted due to the safety benefits. A small survey of a cross-section of CTA members in different parts of the country and different industries revealed that forward-collision warning systems, automatic braking systems and electronic stability control features were more common.
- **Driver monitoring technologies** that are gaining in acceptance include electronic logging devices and forward-facing cameras. While there is a consensus that there are benefits and cost-savings associated with these technologies, these are more difficult to quantify since their implementation has been relatively recent. However, according to some companies that are using these technologies, benefits have included:
  - opportunities for coaching safe behaviours that have significantly reduced driver following time incidents;
  - fewer collisions involving entry-level drivers;
  - reductions in collisions and collision costs;
  - efficiencies completing logs and inspection reports; and,
  - return on investment or dollar savings.

Some examples of the costs of safety equipment and their benefits are below:

- **Lane-departure and forward-collision warning systems.** Several studies have evaluated the effectiveness of lane-departure warning (LDW) systems which is estimated to cost approximately $2,500 to $3,500 per truck. Estimates from the United States indicated that if every large truck were equipped with this technology, there would be a 3% reduction in all crashes and a 6% reduction in fatal crashes (Jermakian 2012). In addition, a review of fleet data from 14 carriers showed there was a 48% reduction in crashes among large trucks equipped with lane-departure warning technology compared to those trucks not equipped with LDW systems (Cicchino 2017).
- **Forward-facing and inward-facing cameras.** Forward-facing cameras are rapidly being adopted by transportation companies. More recently, some insurance companies have offered camera units at no charge to their client companies at policy renewal time as a safety incentive.

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These devices may be leased for approximately $35 per month. The cost of a camera system is estimated to be approximately $700 for the camera and $40 per month for monitoring service. The cameras in the trucks have both the outward- and inward-facing lenses. The installation time is about an hour, which may cost approximately $90, based on the shop rate. There is also the time required to review the event triggers and to provide feedback on events to drivers.

Employers have reported that these cameras are an important cost-saving measure that has enabled companies to reduce legal fees as well as negative publicity by demonstrating that their drivers are not at fault.

Inward-facing cameras are activated by events such as hard braking. The camera begins recording and a monitoring company reports events that meet specific criteria to employers. Other inward-facing cameras can detect if the driver's head is nodding or eyes are closing. If the driver is doing either of these behaviours, the seat vibrates. Employers generally agree that this technology is an important training tool.

One of the barriers to the installation of inward-facing cameras is that employees often express privacy concerns since they may have a sleeper berth in their vehicle, and concerns about punitive consequences that may affect job security. Furthermore, there have been court challenges by unions who argue that such a technology violates privacy rights. However, clear communication to employees regarding the objectives of the technology and use of data can help overcome reluctance and engage employees in these safety practices. Some employers have also noted that policy features may be necessary to indicate that driver interference with the technology (e.g., covering in-vehicle cameras) is a violation.

- **Electronic logging devices.** There is perhaps the greatest support for the use of this measure within the industry. The estimated cost of in-cab units is between $600 to $2,000 per truck plus installation costs ranging from $150 to $300. The monthly monitoring fee is approximately $50 per unit, and the software needed to manage ELDs is an additional cost. Employers noted an important consideration associated with the use of this technology is ensuring the supplier's software is compatible with the company's dispatch network platform.

Electronic logging devices (ELDs) can achieve reductions in distracted driving, improve the accuracy of driver data, and reduce the probability that drivers are assessed for a logbook violation.

In particular, it was noted that electronic logging devices (ELDs) can achieve reductions in distracted driving, improve the accuracy of driver data, and reduce the probability that drivers are assessed for a logbook violation. These findings are similar to those from a U.S. study sponsored by the Federal Motor Carrier Safety Administration (FMCSA) in which data were collected from Class 7 and Class 8 trucks in order to determine the effectiveness of ELDs on safety and hours-of-service violations. Results showed that ELD-equipped trucks had a lower total crash rate (11.7% reduction) and a lower preventable crash rate (5.1% reduction) than trucks that were not equipped with ELDs (Hickman et al. 2014).

- **On-board safety monitoring systems.** These systems are comprised of telematics devices which passively gather data related to steering, braking and speed, and movement around the vehicle from a variety of vehicle sensors. Some systems provide audible and visual alerts to drivers when the vehicle is backing up or departing from its lane. There are several examples of subscription-based systems that can provide driver monitoring services to inform workplace safety programs and the estimated monthly cost per vehicle is nominal.

  These technologies can improve driver safety and reduce crash involvement (and its associated costs) by helping managers address unsafe driving behaviours before they result in a collision (Horrey et al. 2012). Notably, data can be useful to provide drivers with feedback on their performance and to understand critical events. Although some companies have experienced initial reluctance among drivers regarding the use of driver monitoring systems, implementation has not resulted in the loss of drivers when it is clearly communicated that the objective is to support and improve driver safety and data are used constructively.

- **Fleet management systems.** Many larger companies rely on fleet management systems. Estimated costs for the installation of fleet management unit in each truck ranges from $1,175 to $3,000. Monthly subscription costs for fleet management systems are estimated to be $40-$60 per month. These systems can check hours of service and monitor driver performance in terms of starts, stops, sudden movement, speed and hard braking. Employers report that these systems create

significant operational efficiencies by enabling employers to take preventive action to manage potential risks and respond to changing environmental conditions and critical events.

- **Navigation systems.** Navigation systems are available in a variety of formats. They can be a built-in component of a truck (similar to passenger vehicles), they can be an add-on module to a fleet management system, or they can be a stand-alone GPS device. Alternatively, drivers can also use a securely mounted cellphone with Google Maps for this purpose. The cost of a navigation system that is integrated with the fleet management system ranges from $4 to $13 per month per truck.

  These systems help drivers stay focused on the road, providing audible instructions to enable drivers to keep their eyes on the road and their hands on the wheel at all times. These systems are also available to provide alternate routes in the event of road closures and construction.

- **Communication technologies.** Companies are increasingly adopting a range of technologies to help drivers manage communications and reduce distractions on the road. However, more companies have adopted satellite systems that are estimated to cost $10 to $20 per month per trucks.

  While some companies report that cell phone applications can work well with drivers, other companies have expressed concerns about privacy, particularly if drivers own the phone they are using. Larger companies that utilize dispatch systems opt to notify drivers of important messages that can only be retrieved when the vehicle is not in motion. Going further, one employer established a call centre specifically, so that family members could contact drivers with urgent personal messages without placing them at risk.

More generally, the added benefit of these technologies is that data captured by devices can be instrumental to establish safety ratings for employers and individual drivers. Data can also be used to identify and address driver training issues and identify areas where safety technologies can create benefits. In addition, events captured by these technologies can provide insight into broader training issues and trigger the delivery of tailored safety messages as part of workplace safety programs which are discussed in the next section.

3.3 Workplace safety programs

Costs for workplace safety programs are quite variable depending on the size of the company. As such, it is challenging to quantify these costs, although most employers are familiar with them as an important line item in their operational budget. Safety programs are generally comprised of:

- in-cab training;
- general safety messages reinforcing practices;
- online training programs; and,
- post-incident defensive driver training programs.

These programs are an essential prevention tool to help employers increase awareness among employees about the dangers of distracted driving. Programs may be expanded to include the employees' families and the local community, with some employers incentivizing safe driving practices. Some transportation companies have also reported that company events to celebrate safety can have many positive benefits in terms of team-building, risk identification, and morale. Generally speaking, engaging drivers and employees in workplace safety policies is important to build buy-in and ensure their widespread adoption.

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For example, Westcan Bulk Transport identified employee distraction as a workplace safety issue. They encouraged their employees to discuss distraction avoidance and held a colouring contest for children and grandchildren of Westcan employees. Winning entries were printed on T-shirts and sent to family members. The company has also staged safety days where family members

can try using a driving simulator (Canadian Occupational Safety 2016) to experience first-hand the risks associated with distraction.

Similarly, Manitoulin Transport has helped the Ontario Provincial Police's Operation Lookout campaign on Manitoulin Island. The company has provided funding for billboard advertisements on the island which urged drivers not to drive while impaired or while distracted (McCutcheon 2014).

Workplace safety programs can also be guided by data collected from onboard monitoring and driver monitoring systems, according to some employers. The analysis of critical events can be important training tools to provide examples of driving errors and strategies to avoid them.

- **In-cab training.** Practical, hands-on training is essential to help drivers become familiar with vehicle and safety features. Elements of in-cab training include performing safety checks prior to driving, practicing vehicle maneuvers and gaining familiarity with safety features, communication and navigation equipment and record-keeping tools.
- **Safety messages.** Routine reminders of safe workplace practices and safety messages can be delivered by satellite to vehicles daily when the vehicle is not in motion. Messages can be accessed by drivers when the vehicle is stopped or parked. Some companies use these systems to also send weather bulletins, warnings about high winds, or updates on road conditions.
- **Online training programs.** Employers may provide drivers with access to web-based training modules through a company intranet system. Alternatively, they may also offer access to computers at the job site, so employees can complete courses if they do not have a personal computer. Training programs may also incorporate positive feedback to drivers by recognizing safe drivers or use a recent distracted driving incident as a testimonial to educate employees.

- **Post-incident defensive driver training.** After critical events, employees may be required to complete additional training targeted toward specific skills deficits. Employers can work with employees to analyze these incidents and retrain drivers.

Post-incident training may be limited to a few hours or may require three to four days and include driver simulator training. Depending on the nature of the incident, re-training can range from an hour of training to multi-day training that includes online courses and/or in-cab instruction. If the same behaviour (e.g., hard braking) persists, this may be an indication of driver inattention. This could lead to drivers being called in for a review of their driving performance.

For example, a company could administer additional training if a driver's high-risk driving behaviours have been identified either through crashes, event recordings, violations or inspections. The amount of additional training ranges from one to 16 hours, depending upon the behaviour that needs modification.

3.4 Summary

Employers agree that investment in safety reduces costs, mitigates risk and protects the company name and reputation. A favourable record for the National Safety Code (NSC) carrier profile and safety ratings and the provincial motor carrier safety monitoring system means that companies pay lower insurance costs and incur fewer legal costs. It also results in a variety of intangible benefits such as employee retention and goodwill.

Driver training, increased use of safety equipment, and workplace safety programs are certainly associated with costs. Employers are encouraged to calculate these prevention costs by reviewing the types of costs described in this section and drawing upon information contained in operational budgets. This information can help employers place the costs of crashes, presented in the next section, in context and increase understanding of the value of distracted driving workplace safety policies.

4. CRASH COSTS

As mentioned in Section 2, costs related to distracted driving crashes can occur during three distinct chronological periods. First, there are expenditures that result directly and immediately from the **crash scene** within hours of the incident occurring. Subsequently, there are **post-crash short-term costs** that are incurred within 30 days of the crash. Lastly, **post-crash long-term costs** would be those that occur more than 30 days after the crash.

4.1 Crash scene costs

Employers may immediately incur direct costs at the scene of a collision or traffic violation. Costs can vary upon the degree of culpability on the part of the employee, the extent of damage that the employer incurs, and the severity of the crash. These costs include:

- vehicle damage;
- towing costs;
- loss or damage to goods;
- cost of staff attending collision scene;
- environmental costs (e.g., paying to clean up after a spill); and,
- public relations and media coverage.

More information about the scope of these costs is summarized below.

4.1.1 Vehicle damage

Vehicle damage is a significant cost that can vary substantially depending on the severity of the collision. For each day that the employer does not have or cannot secure a replacement truck, the company loses one day of revenue that the truck is out of service.

4.1.2 Towing costs

Towing costs that are incurred due to distracted driving collisions can be substantial for transportation companies. In fact, the costs can be exponential for companies that conduct business across multiple jurisdictions within Canada as well as the United States. Notably, the distance between the collision/spill and the Canadian head office, labour costs at a collision/spill scene, the repair and replacement of vehicles, and whether litigation is necessary are all important factors that can rapidly escalate cost.

In some cases, companies do not get to pick the towing company, particularly when incidents occur in other jurisdictions that may be less familiar to the employer. There are negotiated rates for drivers in a particular jurisdiction but not for trucks. In Ontario, the OPP uses a 'first available system' and the trucking company may not have a contract with the towing company.

Some of the common towing costs that may result from distracted driving collisions involving heavy trucks are briefly summarized in the list below. Costs are presented according to the following categories:

- types of towing equipment;
- types of labour provided by the towing company; and,
- vehicle or cargo storage.

Types of towing equipment. The types of equipment that the towing companies need at a crash scene and the number of hours a piece of equipment is on site is dependent on several factors, including road conditions, weather conditions, terrain, distance from the towing company to the crash scene, and how the truck is situated (e.g., upright, on its side, in a ditch with possible environmental considerations if there is a creek nearby, partially or fully over an embankment).

For example, a wrecker truck (which is most commonly used in passenger vehicle collisions) may be the only equipment needed to simply remove a vehicle, albeit a much heavier vehicle, from a ditch or roadside. Estimated costs for this type of vehicle can range from $350 to $550 per hour, and the equipment may be on site between five and 10 hours depending on the nature of the crash scene. Conversely, a sliding rotator truck may be dispatched if a heavy truck has rolled over. Estimates of the cost for this type of vehicle can vary from $400 to $800 per hour; again, the number of hours it may be on site is dependent on the complexity of the crash scene. The use of a skid steer to move damaged cargo or debris from a heavy truck is estimated to cost $100 to $200 per hour, and hours required are determined by the size of the load. Crash scenes that may require any combination of these pieces of equipment are estimated to cost between $650 to $1,850 per hour depending on specific factors.

Transportation companies can incur additional costs if towing companies provide a substitute tractor-trailer and move goods or livestock from the disabled truck to the replacement vehicle. Estimated hourly rates for this type of equipment can vary between $200 and $300 per hour, and on average it may take from six to 10 hours to transfer an average load to replacement vehicle and secure it properly.

Collisions that involve fuel spills can also escalate costs for transportation companies. Towing companies may charge an estimated $400 to $600 to apply a spill kit to the affected area. If this work is undertaken during late-night hours in unlit areas, transportation companies may also need to rent lighting equipment for the scene which can add between $800 to $1,200 to the other towing costs.

Types of labour. One of the less predictable and quantifiable costs related to services provided by towing companies is labour. At some scenes, a crew of just two persons may be adequate to attend a typical crash scene whereas a complement of up to 15 workers may be required to manage a more complex crash scene. On average, just one worker on a cleanup crew is estimated to cost between $50 to $200 per hour and it may take one to eight hours for a crew to restore a crash scene. If a supervisor is also required on site, the hourly labour cost may be double that of the cleanup crew.

If traffic control services are also required at the crash scene, towing companies may charge a flat rate for a flag crew. These costs are estimated to range from $700 up to $2,000. Crash scenes that involve a fuel spill are more likely to require a flag crew on site.

There may be situations where towing a replacement truck to crash site is cheaper for the company than towing a disabled vehicle to their nearest office.

Vehicle or cargo storage. The cargo or goods that were being transported by heavy trucks involved in a distracted driving collision can also increase crash costs. It may be necessary for cargo to be retrieved from a crash scene and stored until it can be loaded onto a replacement trailer and transported. Damaged cargo may have to be collected and disposed of safely.

The minimum cost of cargo is estimated to be $90,000. Some loads are time-sensitive such as food or livestock. The use of third-party carriers to deliver a load can be $1,000 to $1,200 per day.

When crashes are a considerable distance from company headquarters or warehouses, this means that the damaged trailer and/or goods may be stored by the towing company until alternative arrangements can be made by the owner of the truck or the shipping company. Estimated costs for storage can vary based upon whether the tractor, trailer, or the entire unit is placed in storage. Furthermore, if the vehicle is still loaded with cargo, this may result in even higher storage costs. In most cases, vehicle storage is calculated on a per-day basis with fees ranging, on average, from $60 to $200 per day.

4.1.3 Loss or damage to goods

If the cargo on a truck is damaged, spoiled, or no longer compliant with transport regulations, costs may be incurred to properly dispose of the cargo at a private dump or municipal dump. The weight of the cargo or size of the load that must be disposed of impact cost, with average fees estimated from $500 to $3,000.

4.1.4 Cost of staff attending collision scene

For some companies, there is an additional cost of sending supervisors or other employees to the crash scene depending on the nature of the collision. They may oversee the cleanup of material that may have been spilled at the crash scene. In addition, they may consult with the client to determine what to salvage and/or dispose.

4.1.5 Environmental costs

There is a challenge to quantifying environmental costs. Once a company is aware that one of their trucks has spilled its load, it has to contact a contractor. The contractor needs to ensure that the cleanup is done promptly and properly. The difference between a spilled product being safely contained and the product finding its way into a roadside creek, sewer, lake or natural system can be the difference between the company being charged a $2,000 fee to a fee in the hundreds of thousands of dollars.

4.1.6 Public relations and media coverage

Anecdotal evidence suggests that crashes involving commercial vehicles (e.g., large trucks, tractor-trailers, buses) and police vehicles receive more media attention than crashes that involve smaller passenger vehicles. An Ontario study examined how workplace fatalities and injuries were represented in newspapers compared with official government statistics. It also examined the types of individuals or organizations that received more media coverage, which in turn, could lead to public perception of the dangers of interacting with certain work sectors. Results suggested that goods-producing, transportation and resource extraction occupations were over-represented in news coverage (Gawley & Dixon 2016).

4.1.6 Summary

Distracted driving crash costs related to the towing and removal of heavy vehicles and cargo from crash scenes are significant and can rapidly escalate as a result of extenuating circumstances. Equipment, labour and storage or disposal costs are influenced by many different factors such as ease of access to the site, traffic volume, distance to the crash scene, number of vehicles involved and of course, the presence of injuries or fatalities. Protocols to manage crash scenes also impact costs simply because the removal of vehicles and collection of cargo is secondary to health and safety issues. This often results in tow company staff and equipment essentially "waiting" on scene until they are able to provide their services.

4.2 Short-term costs

Employers may encounter the following costs in the short-term (within 30 days of a collision or violation):

- traffic tickets for driving violations;

- legal costs;
- fuel loss from idling during traffic delays;
- time lost due to road closures or traffic delays (trucking industry);
- temporary replacement of employees;
- payments to workers' compensation as a result of a Ministry of Labour investigation;
- repair or replacement of vehicles; and,
- interruptions in the supply chain of goods and/or parts.

4.2.1 Traffic tickets for driving violations

Similar to drivers of passenger vehicles, drivers of large trucks can be fined for distracted driving violations related to a collision or the spilling of dangerous goods. In Ontario, drivers may be fined up to $1,000 and receive a three-day suspension and three demerit points for a first offence. In Saskatchewan, drivers receive a $280 fine for distracted driving and are assessed four demerit points; for multiple offences, the vehicle may be impounded.

- Current penalties for distracted driving violations in each Canadian jurisdiction are available at TIRF's Drop It And Drive® website (http://diad.tirf.ca/ehub/legislation-data-2/).
- Costs associated with fines for a wide range of traffic violations in Ontario is available at http://www.ontariocourts.ca/ocj/how-do-i/set-fines/set-fines-i/schedule-43/. The driver licensing authority in each jurisdiction posts the current cost for various fines at their website.

Officers also have the authority to lay a charge against a transportation company, in addition to the driver. In Ontario, the Commercial Vehicle Operator's Registration (CVOR) system monitors commercial carrier safety. Employers can be assessed five points for careless driving or for other moving violations (e.g., following too closely, unsafe lane change). In addition, companies can be fined up to $50,000 for a first offence and up to $100,000 for a subsequent offence. Convictions are attached to the company's CVOR abstract, and point values are assigned based on the severity of the offence. Point values are available in the CVOR conviction table published by the Ministry of Transportation. Similar systems are in place in other jurisdictions in Canada.

4.2.2 Legal costs

Litigation can happen quickly as a result of a crash and may be initiated in as little as 24 to 48 hours following a crash or spill. Costs can also escalate quickly depending on the nature of the crash and the magnitude of the damage, and cases may take years to resolve. However, these costs may be significantly mitigated with safety technologies such as forward-facing cameras to demonstrate the driver of the large truck was not at fault.

4.2.3 Time spent in court to address crashes/violations

In Ontario, specific Highway Traffic Act (HTA) charges data were not provided separately for commercial vehicle drivers on the Ministry of Attorney General website. In addition, data on trial length did not distinguish between HTA and non-HTA offences. However, it is estimated that 80% of Part III charges in Ontario courts relate to HTA offences (Stewart 2019). Court data show that only 8% of persons charged with driving while using a handheld communications device went to trial (Ontario Court of Justice 2019). Although it is difficult to quantify these costs, collisions or violations can result in a loss of morale among employees.

4.2.4 Fuel loss from idling during traffic delays

Higher fuel consumption costs resulting from travel delays at fatal crash scenes cost an average of $1,484 per crash (de Leur 2018).

4.2.5 Time lost due to road closures or traffic delays

It is estimated that for every hour that Highway 17 in Ontario is closed, the national economy loses $1 million (Andrews 2018).

4.2.6 Temporary replacement of employees

In Manitoba in 2017, 3.9% of truck drivers lost time at work due to a work-related injury (SAFE Work Manitoba 2018). Industry representatives have estimated that the replacement costs for a driver for one day is, on average, $270 or $400 for overtime.

Considering the persistent labour shortage in the trucking industry, employers report it is incredibly challenging to find temporary drivers. Suspended drivers also negatively impact smaller companies more so than larger companies, particularly if replacement drivers cannot be located. A 30-day driver suspension could mean a 30-day hiatus from business for a small company.

4.2.7 Payments to Worker's Compensation

In Ontario in 2017, the average number of days lost for transportation employees injured within one month of a workplace incident was nine days (WSIB 2018b).

4.2.8 Repair or replacement of vehicles

Delay-related costs can be incurred if a new truck must be purchased or special vehicle parts must be located. These costs are measured by key-to-key calculations (time of the collision to time that the vehicle is repaired), and high-end vehicles are more likely to be associated with expensive repair costs. Similarly, obtaining replacement parts can be cost-prohibitive depending on the availability of parts and the location of the incident.

In addition, vehicles carrying hazardous loads such as oil, gas and waste are also associated with significant costs resulting from environmental spills. It is estimated that costs associated with environmental clean-up can range from $20,000 to $100,000 or more depending on the extent of the spill and the substance involved. While these costs may eventually be recouped from at-fault drivers, this can take considerable time.

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The Insurance Institute for Highway Safety also reports rising repair costs associated with vehicles with new safety technologies. In a series of interviews with stakeholders, it was suggested that in the short-term, insurance costs could increase as it could cost $5,000 to fix a vehicle bumper or panel with a sensor. In the medium-term, costs may decline as the number of collisions decreases, but this has yet to happen. A long-term goal for manufacturers of automated vehicles/and or safety features may be to prove that this technology reduces crashes (Anderson et al. 2016).

Typically, companies estimate an expected daily revenue per truck. For each day that the truck is off the road due to repairs or replacement, the company's bottom line is adversely affected (Canadian Trucking Alliance 2019).

4.2.9 Interruptions in supply chain

There is considerable variability associated with this cost. For example, if a truck that is scheduled to make a delivery to several stores is involved in a crash, several types of costs may be incurred. These will vary based upon:

- whether or not a third-party carrier is needed and how expensive it is to hire one; and,
- the distance between the disabled truck, the home office, and each of the stores.

For example, employees delivering perishable goods may cost an employer $45,000 to $50,000 to deliver the goods if a company truck is involved in a crash. Depending on the type of goods that are being

transported, the cost of damaged goods that must be replaced can easily exceed $100,000. For other types of goods, the replacement cost may be based upon the declared value of goods that customers write on the bill. If the cargo has no declared value, the estimated value is $2 per pound which can mean that employers are unable to recoup losses. In addition, delays in the timely delivery of perishable goods and hazardous materials can cost more than delays associated with other types of goods.

In Edmonton, short-term employer/workplace costs related to disruption of productivity were $5,169 for each fatality and $20,253 for each injury (de Leur 2018). However, it should be considered that depending on the specific skills and role of the employee and the volume of goods being transported, these costs within the transportation industry would be significantly higher.

The total loss claim should also be taken into consideration. Some clients may not want to include any salvaged material because the merchandise has a private label. Furthermore, if the client has a sound return policy, they do not want any damaged or defective material to reach the market. Major retailers do not want to see a third party buy and resell damaged goods.

4.3 Long-term costs

There is a wide range of long-term costs (more than 30 days after a violation or collision) resulting from distracted driving collisions that directly impact employers. The effects of some of these costs may last for years after the event. These costs include:

- increased insurance premiums;
- increased health insurance for employees;
- legal costs; and,
- replacing employees who may have been killed or injured.

4.3.1 Increased insurance premiums

In Canada, it is estimated that the average claims cost in the trucking industry is substantial for property damage only crashes, and much higher for collisions resulting in an injury or fatality. According to leading insurance professionals, estimates for 2018 are as follows:

- $20,917 for property damage only;
- $270,222 for injury; and,
- $4,988,379 for fatality.

For many smaller companies, costs of this magnitude can result in bankruptcy. In addition, insurance premiums will certainly increase as a result of short-term costs that an insurer covered for a trucking company. For example, premiums will increase in 2020 based on an insurance payout to cover the loss of perishable goods that were spoiled due to a collision in 2019.

Of importance, insurers track the claims activity on large and small commercial policies (i.e., loss run) and this affects future premiums. Key factors that are included in a loss run report are: claims activity including the number of claims and coverages involved, reserving activity, and payments. Some insurance companies may not only consider the number of crashes or their severity but also compare premiums earned with claims paid out (i.e., 'dollars in' vs 'dollars out'). This measure enables both insurers and companies to track how much money is paid out in settlements versus premiums collected.

A pattern of collisions and claims is an indicator of risk and ultimately results in much more expensive insurance costs. Unfortunately, many smaller companies are not fully aware of the consequences of a blemish on their National Safety Code record which can have long-lasting effects. Over time, it will become more difficult for companies to obtain insurance and companies with less than satisfactory safety records may be limited to insurance from the Facility Association for high-risk drivers which is much more expensive for commercial vehicle drivers than passenger drivers. The Facility Association is comprised of all auto insurance companies and its purpose is to ensure that drivers who cannot otherwise obtain insurance in the competitive marketplace due to a history of high-risk behaviours are still able to obtain insurance required to drive legally.

In Ontario and many other jurisdictions, licensing authorities also routinely notify insurers about CVOR violations incurred by trucking companies. It is standard practice for insurers to review a company's CVOR record on an annual basis, or every two years if no claims have been filed. Insurers may also require an audit of company offices and job sites as part of this review. The CVOR system retains demerit points on an employer's record for two years and companies with a history of violations will face increased insurance costs.

As a final consideration, insurance premiums are also based upon exposure to liability and this is reflected in annual costs. This means that companies with larger vehicle fleets have higher premiums. In addition, companies and drivers working locally or in a single jurisdiction often have lower premiums compared to companies and drivers that travel across Canada, or into the United States.

4.3.2 Increased health insurance for employees

In Ontario, the WSIB has premium rates for companies in different rate groups. One of these rate groups is 'general trucking' which employers who lease, own, or operate trucks, truck tractors, or trailers in order to transport goods for customers. Services are provided by using either the employer's own drivers, equipment and/or drivers of an associated firm, or owner-operators who transport freight under contract for the employer's operating authority/licensing as a carrier. In this category:

- the premium rate was $4.88 per $100 of insurable earnings in 2019 which represents a 30% decrease from $6.97 in 2018.[3]

This applies to all companies in this rate group. Thus, a company's premium rate is largely dependent on the safety record of all the companies in its rate group.

4.3.3 Legal costs

As described in the short-term costs section, legal costs can be substantial and last several months or even years. Legal costs can be incurred in relation to criminal proceedings as well as civil proceedings.

- For example, cases involving traffic violations (Part III offence) that went to trial averaged 312 days from the date of the first hearing to the final court appearance in Ontario (Ontario Court of Justice 2019).

The time that drivers and other company employees are required to spend in court translates into diminished productivity.

In the event of criminal charges, the accused person or company can also expect to spend a significant amount of time in court.

- The median number of court appearances for a non-impaired driving Criminal Code offence in criminal provincial courts was six in 2015/2016, and the average number of days in between these appearances was 30.

[3] See (http://www.wsibresources.ca/PremiumRatepdfs/WSIB2019PremiumRatesBackgrounderWebEN-RG570.pdf).

- The median number of court appearances for an accused for cases heard in criminal superior courts was 12 appearances, and the average number of days between appearances was 56 (Maxwell 2018).

Trucking companies can also incur significant legal costs as a result of negligence as determined based on the five following criteria:

- A driver's actions behind the wheel;
- Negligent hiring (an examination of an employer's hiring criteria and processes to determine if the company ignored its own selection criteria to hire a driver);
- Negligent supervision (an examination of how companies have managed inappropriate driver behaviour in the past, based upon the 2019 US Department of Justice test to determine whether the safety/compliance program is an effective and enforceable program);
- Negligent entrustment (an examination of whether the company knew about a driver's history and still authorized the driver to operate their equipment); and,
- Negligent maintenance of equipment (Claimspro 2019).

Employers can also be held responsible through their Board of Directors or executive officers of the company. For example, an officer of a transportation company could be named in a lawsuit if the company was found to be condoning unsafe practices. As this is more likely to occur in some jurisdictions than others, it is a responsibility that carriers need to consider. The responsibility of indemnification may be assigned to a vice-president in a medium or larger company whereas safety and its costs are the responsibility of owners in smaller companies.

4.3.4 Replacing employees who have been injured or killed

While no employer wants to find themselves in the position of temporarily or permanently replacing employees who have been injured or killed on the job, this is a reality and a cost that many employers anticipate.

However, it is important to note that even employees who suffered 'minor' injuries may be more prone to absenteeism. Brubacher et al. (2017) reported that 28.9% of drivers who suffered a minor injury had not yet returned to work within six months following a collision.

4.3.5 Summary

The costs contained in this section illustrate the profound consequences of distracted driving collisions. When combined with the costs described in previous sections, it is easy to understand how a single event can significantly impact an employer's ability to conduct business. Smaller companies, which represent a substantial portion of the trucking industry truly have the most to lose as such events can result in bankruptcy.

In sharp contrast, the costs of prevention are much less and can be scaled as companies grow. To this end, many larger employers are willing to share safety materials and strategies to benefit smaller companies as this is a sound investment that protects the entire industry and not just individual companies

Photo credit/copyright: P&R Truck Centre Ltd.

5. CALL TO ACTION

Distracted driving is a factor in one in four fatal crashes and is one of the most common behaviours that contribute to road crashes. As mentioned previously, an analysis of fatal crashes involving distracted driving revealed that distracted drivers are more likely to kill other road users as opposed to themselves. Taking steps to address this problem protects employers, their workforce, and improves safety in the communities where employees live and work.

The costs of these collisions are substantial. According to industry leaders, the greatest costs of these collisions and spills include:

- liability and exposure to litigation;
- onsite cleanup, towing, and repairs;
- insurance costs; and,
- negative publicity.

Often, values associated with the costs of crashes are met with skepticism simply because there are many different methods to quantify these costs which produce dramatically different values. There is also a plethora of costs included, many of which range considerably depending on lower versus upper estimates. There are also very real differences between the costs of fatalities and injuries as compared to property damage only crashes, which are still significant.

However, these are not just numbers and these crashes are preventable. The measures described in this report are based on current data sources and represent the most tangible and real costs that can be quantified and directly affect the bottom line for employers in the transportation industry.

To help place the costs in context, each employer is encouraged to use the data and estimates shared in this report along with knowledge of their own company costs to calculate how much a single distracted driving collision may potentially cost them. This cost can then be compared to the amount of money that employers invest in prevention, which is assuredly much lower. Hence the widespread belief among employers that "safety doesn't cost; it pays." A checklist template is provided in Appendix A for this purpose.

All employers in the transportation industry have an important role to play in reducing distracted driving collisions. Leadership from both large and small companies is essential. The value of a distracted driving

workplace policy is clear, and most employers who have implemented cell phone bans and distracted driving policies report that it does not negatively impact productivity.

Employers that do not yet have a distracted driving policy in place should make this a priority. Examples of policies have been developed by several safety organizations and are contained in Appendix B.

Employers that have already developed a policy should focus attention on its implementation, ensuring that it is well-supported and reinforced through operational practices, and integrated with workplace safety and training programs. Engaging employees to identify potential risks as well as solutions is a critical step to fit the features of the policy to the functions of the workplace. It also serves to increase buy-in and translate the policy into practice.

Depending on the status of attitudes and beliefs about distracted driving that exist within each company, and the presence of a distracted driving policy, education messages should be customized. For example, if knowledge about distracted driving is limited and managers and staff are not yet convinced of the urgency of this issue, more fact-based messages about risks may resonate better with staff. Conversely, in companies with well-developed policies, more customized messages with specific safety strategies may be more effective. Similarly, the types of educational messages may also vary depending on company size and the number of drivers that are employed, and some costs may be more compelling than others for each employer. Safety messages should be developed with these considerations in mind.

Employers are also encouraged to consider tracking important measures of distracted driving incidents to help customize education campaigns and safety strategies. Tracking and sharing these measures internally can help to focus attention on the importance of this issue and inform the development of workplace safety programs. Key metrics may include:

- the number of distracted driving incidents;
- the number of drivers involved in distracted driving incidents (both at-fault and not-at-fault);
- the number of near-misses involving distracted driving; and,
- the immediate crash costs of each distracted driving incident.

New technologies and telematics devices can help in this regard. Incentives for the use of driver monitoring and external monitoring cameras with a clear focus on driver coaching and training can help overcome reluctance. Companies that have implemented these technologies report that particularly because drivers of large vehicles are often assumed to be at fault in collisions, data from devices can prove otherwise and do so quickly.

In summary, employers agree:

"If anyone thinks safety is too expensive, they need to measure the cost of an unsafe operation, workplace injuries and fatalities against the cost of education and effective policies."

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APPENDIX A: DISTRACTED DRIVING CRASH COSTS & PREVENTION COSTS CHECKLIST

Distracted Driving Crash Cost Checklist

Employers are encouraged to use this checklist along with the Prevention Costs Checklist in order to compare the value of investing in prevention versus the cost of collisions. Additional lines are provided at the end of the checklist for any additional costs that may be specific to your industry/operation.

Description	Direct	Indirect	Amount
Crash scene costs			
Vehicle damage	✓		$
Towing costs (including towing operator labour)	✓		$
Loss or damage to goods	✓		$
Replacement of lost or damaged goods (e.g., not covered by insurance)		✓	$
On-site staff/supervisor attending scene	✓		
Environmental costs (e.g., spill clean-up)	✓		$
Negative publicity (incl. Public relations services, media management)		✓	$
Short-term costs			
Fines imposed on drivers and/or employers	✓		$
Legal costs (litigation)	✓		$
Time spent in court for affected personnel			
Vehicle storage	✓		$
Cargo storage	✓		$
Fuel loss	✓		
Road closure/delay time lost		✓	
Training costs (e.g., replacement/temporary workers)		✓	
Vehicle/equipment repair or replacement	✓		
Supply chain interruption	✓		

Description	Direct	Indirect	Amount
Long-term costs			
Increased insurance premiums	✓		$
Increased health insurance	✓		$
Legal costs (ongoing criminal/civil proceedings)			
Employee replacement due to injury or death			
Reduced productivity (e.g., loss of skill and workplace efficiency)		✓	$
Collision paperwork (e.g., office administration hours)		✓	$
Liability and exposure to external litigation (e.g., civil suits resulting from collisions)		✓	$
Other costs			
Sub-total (Direct costs):	✓		$
Sub-total (Indirect costs)		✓	$
TOTAL			**$**

Distracted Driving Prevention Costs Checklist

Employers are encouraged to use this checklist along with the Collision Costs Checklist in order to compare the value of investing in prevention versus the cost of collisions. Additional lines are provided at the end of the checklist for any additional costs that may be specific to your industry/operation.

Description	Direct	Indirect	Amount
Driver training and orientation programs/materials			
New driver training & orientation			
In-house	✓		$
Subscription-based	✓		$
On-the-road/on-the-job	✓		$
Workplace safety programs			
In-house	✓		$
Trainer fees & expenses	✓		$
Production shutdown		✓	$
Workforce travel & accommodation	✓		$
Subscription-based	✓		$
On-the-road/on-the-job	✓		$
Policy review and updates		✓	$
Workforce notification & corporate culture integration			
Safety messages/materials (e.g., posters, decals, electronic)	✓		$
Ongoing training for each worker (annual)	✓		$
Post-incident / repeat incident training			
Driver support / coaching	✓		$
Out-of-service vehicle		✓	$

Description	Direct	Indirect	Amount
Driver safety equipment and technologies			
Fleet upgrades (e.g., new vehicles, vehicle safety features)	✓		$
In-vehicle apps/driver monitoring technologies			
Lane-departure warning system	✓		$
Forward-collision warning system	✓		$
Forward-facing camera (e.g., dash cam)	✓		$
Inward-facing camera	✓		$
Electronic logging device (ELD)	✓		$
On-board monitoring system	✓		$
Fleet management and navigation systems	✓		$
Communication technology	✓		$
Software			
Monthly monitoring fees	✓		$
Other costs			
Available discounts			
Insurance premium discount for training compliance (if applicable)	✓		-$
Other:			-$
Sub-total (Direct costs):			$
Sub-total (Indirect costs)			$
TOTAL			**$**

APPENDIX B: SAMPLE DISTRACTED DRIVING POLICIES

Road Safety at Work

Jurisdiction: British Columbia
Access: Downloadable Word documents
Bans: Handheld (hands-free ban included as an option)
Year: 2014
URL: https://roadsafetyatwork.ca/tool-kits/distracted-driving/distracted-driving-policy-examples/

National Safety Council Safe Driving Kit

Jurisdiction: United States
Access: Submit online form to access
Bans: TBD
Year: Unknown
URL: http://safety.nsc.org/safe-driving-kit (Note: not specific to distracted driving)

Infrastructure Health & Safety Association

Jurisdiction: Ontario
Access: Download Word document(s)
Bans: Handheld and hands-free
Year: Unknown
URL: https://www.ihsa.ca/Road-Safety-Solutions/Steps-on-Building-Your-Program/Step-2-Do.aspx

HR Insider

Jurisdiction: Canada
Access: Download Word policy development guidance document
Bans: Handheld and hands-free
Year: 2014
URL: https://hrinsider.ca/wp-content/uploads/2014/07/distracted-driving_sample_company_policy.docx

CNA

Jurisdiction: United States
Access: Download PDF
Bans: Handheld and hands-free
Year: 2019
URL: https://bit.ly/CNACellPhoneUseGuide

Mason Contractors Association of California

Jurisdiction: United States
Access: Download PDF
Bans: Handheld, hands-free and other electronic devices
Year: Unknown
URL: https://www.mca-ca.org/attachments/article/132/Sample_Distracted_Driving_Policy.pdf

OHS Insider

Jurisdiction: United States.
Access: Downloadable PDF and customizable Word documents
Bans: Handheld and hands-free devices
Year: 2017
URL: https://ohsinsider.com/wp-content/uploads/2017/11/Distracted-Driving-Policy.pdf

APPENDIX C: EXAMPLES OF WORKPLACE SAFETY MATERIALS

Infrastructure Health & Safety Association

Distractions and Solutions for Commercial Vehicle Drivers https://www.ihsa.ca/roadsafetysolutions

Liberty LineHaul

Liberty Linehaul Inc. gives permission for anyone to use in part or as whole as needed.

Videos used for distracted driving campaigns

https://www.youtube.com/watch?v=CUhhx5GMrXw

https://www.youtube.com/watch?v=E9swS1Vl6Ok

https://www.youtube.com/watch?v=AZVc9XSH7pA

Liberty LineHaul - Letter from Employers: See Appendix C-1

Liberty LineHaul - Distractions Pledge: See Appendix C-2

APPENDIX C-1: LIBERTY LINEHAUL LETTER FROM EMPLOYERS

Liberty Linehaul Inc. gives permission for anyone to use in part or as whole as needed.

CLARIFICATION ON CONFIRMATION OF RECEIPT OF DISTRACTION AVOIDANCE POLICY

1. Attached are a confirmation receipt and a copy of the new Distraction Avoidance Policy that goes into effect immediately.

2. Employees are advised to read the policy and then sign the confirmation of receipt and return the receipt to their Supervisor within ten (10) days.

This is to acknowledge that I received a copy of LIBERTY LINEHAUL INC.'S Distraction Avoidance Policy.

I understand that compliance with the Distraction Avoidance Policy is a condition of employment.

Failure to adhere to **LIBERTY LINEHAUL INC.'S** Distraction Avoidance Policy will result in disciplinary action up to and including termination.

_____
SIGNATURE

_____
NAME (PRINTED)

_____
DATE

Please hand into to the Safety Department once signed. Thank you.

DISTRACTION AVOIDANCE POLICY (Policy)

The Company currently has policies limiting/prohibiting certain behaviour in order to keep our employees/contractors and the general public safe. While the use of cellular phones/electronic devices is a growing cause of driver distraction, other types of distractions also have the potential to cause accidents when a person's attention to their job is diverted. This Policy sets out specifics on what the Company considers to be best practices in focusing on the moment and avoiding distractions.

This Policy if adhered to is designed to make our Company, including its employees and contractors as safe as possible. It will also keep the public that interacts with us safe from incident or injury.

Object of the Policy

The objective of the Policy is to prevent three main distractions:

- Visual: Taking your eyes off the task you are performing;
- Manual: Taking your hands off the task you are performing;
- Cognitive: Taking your mind off the task you are performing.

FOR ALL EMPLOYEES/WORKERS/CONTRACTORS

Types of Distracted Behaviour Prohibited

Distracted behaviours prohibited under this Policy include the use of all electronic devices (including cell phones), eating, drinking, smoking/grooming, reading, reaching for fallen items, and other activities that take attention away from driving/operating equipment or any workplace activity.

As a point of clarification, electronic devices are defined as wireless and/or portable electronic handheld equipment that may be hands-free or not. This includes, but is not limited to, cellular phones, smartphones (including Blackberries and i-Phones), two-way pagers, portable internet devices, MP3 players, iPods, Bluetooth devices or headphones or earbuds of any type, and any other portable electronic devices. Use of an electronic device includes, but is not limited to, making or receiving telephone calls, texting, playing games, reading, e-mailing, Internet browsing, or listening to music or other audio content.

Further Specifics on How to Avoid Distractions

Electronic devices are responsible for most incidents/accidents. Therefore anyone driving/operating equipment/working in the warehouse for our Company should not only avoid the use of electronic equipment but should ensure that these devices are turned off and stored away. The only electronic devices approved to be in operation are On Board Computers and mounted GPS and approved devices that never require operation while equipment is in motion. As new devices/technology enter the market, pre-approval for use will be required from the Company's Safety Department and added to this Policy.

These distractions are not only concerns while operating any equipment, they also are safety risks when working at your desk or walking in the office/warehouse/yard. To prevent slips, trips and falls the focus must be on your job function. The following are specific potential distractions which apply to everyone:

- To prevent slips, trips and falls and to avoid being distracted in high traffic areas, walking and using electronic devices in traffic areas is prohibited. (Stop in a safe area and take necessary calls, if required.)
- Always step back and ensure zero distractions in the work area: stop and take personal time if your mind is not focused on the task you are performing. LMRA (Last Minute Risk Assessment) should be performed before starting a task; if task changes, stop and perform a second LMRA;
- Always avoid knowingly sending texts, or speaking on a phone with employees or contractors operating equipment or performing a task on duty. This can cause both parties to be in violation of this Policy;
- Never have animals/pets or unauthorized individuals with you while performing a Company task at hand;
- Never perform grooming activities while performing a Company task;
- Never allow objects to be in the way of your task;
- Never perform more than one task at a time unless you are sure there is zero risk of incident (avoid multi-tasking, not keeping your eyes and mind on the task).

Family Contact/Emergencies

It is your responsibility to provide family members with the Company's emergency hotline. This allows a family member to reach you through the emergency line in the event of a family emergency. Furthermore, most employees will still be able to access their cellular phones to check for messages and make calls if necessary on breaks.

ADDITIONAL RULES FOR DRIVER OF COMMERCIAL MOTOR VEHICLES OR OPERATORS OF ANY EQUIPMENT

- Do not reach for something that would cause you to move your body and hands from their proper positions, or that would cause you to take your eyes off of the road or in your path;
- If you must drink something, use a straw and avoid open cups that might easily spill;
- Pre-select radio stations;
- If conversing with a passenger or co-driver, keep your eyes focused on the road ahead. Do not look at the person to whom you are speaking. Avoid any discussion, or conversation, that is controversial or causes you to lose focus on your driving responsibilities;
- Never write or handle paperwork while the vehicle/equipment is in motion;
- Do not read a map or atlas while the vehicle is in motion. Study your map and directions while parked;
- Pre-program your GPS with origin and destination points, before moving your vehicle;
- Before starting the vehicle, all objects in the vehicle are to be secured, placed on the floor or other locations where they will not fall or otherwise distract the driver;
- Drivers are to avoid any activity that diverts attention from the driving task such as reading, writing, adjusting controls, etc. unless the vehicle is stopped or parked;
- Loose objects can become a distraction if having to brake quickly, or travelling on rough roads or equipment is being moved;
- Always ensure prior to performing a company task that snacks and drinks are prepared and accessible without your mind or eyes leaving the task;
- Avoid reaching for anything while equipment is in motion;
- Never reach for anything with both arms while equipment is in motion;
- If you are a Company-approved passenger/trainer, do not distract operator from the task at hand;
- In some cases, to help investigators in determination of root cause and prevention of future incidents, always allow at any time while conducting investigation into the alleged use of electronic devices the Managers or Safety Department the opportunity to review your actual device for usage logs and in some cases, work with the Company and/or government officials to gain logs from your service provider.

Tips on Preventing Distractions

- Inform family and friends of your work schedule and share the risks of distractions with them;
- Provide the Company with an Emergency number to family members so they can reach you in case of an emergency;
- Use your breaks to check and respond to messages;
- Turn off electronic devices while performing a Company task;
- Have a daily plan or journey management plan so that you are prepared for weather, directions, food/snacks, break downs, fuel, work load, time and can remain focused on the task at hand;
- Always perform a Last Minute Risk Assessment before starting a new task or if the task changes;
- Work with your Manager or Supervisor on a plan that does not contravene this Policy if you are expecting an urgent call/text (notification must be made prior to any violation);
- If you are not sure how to prevent a distraction, speak with the Safety Department or your Manager;
- Keep items that can cause distractions such a communications devices, loose objects, hanging objects, things stuck in windows; floors should be clean and free of debris and all properly stored to prevent distraction.

APPENDIX C-2: DISTRACTIONS PLEDGE

DISTRACTIONS

LIBERTY LINEHAUL INC.

I PLEDGE TO:

- Adhere to Liberty'sDistraction Avoidance Policy at all times while on the job.
- Protect lives by never texting and always avoiding the phone while driving or performing any company task.
- Be a good passenger and speak out if the driver in my car is distracted.
- Encourage my friends and family to drive phone-free.

I DEDICATE MY PLEDGE TO:

_____

SIGNATURE: _____

DATE: _____

We will work together to keep our employees, customers, and the public we work around each and every day safe from incident or injury.

NOTES

NOTES

Traffic Injury Research Foundation (TIRF)
171 Nepean Street, Suite 200
Ottawa, Ontario
Canada K2P 0B4
www.tirf.ca
Toll Free: 1-877-238-5235
Fax: 613-238-5292
Email: tirf@tirf.ca
Registered Charity No. 10813 5641 RR0001