Occupational Driver Impairment: Knowledge, Perceptions and Attitudes Amongst Employers in British Columbia

by

Jennifer Diep

B.A., The University of British Columbia, 2011

Capstone Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Public Policy

in the
School of Public Policy
Faculty of Arts and Social Sciences

© Jennifer Diep 2015
SIMON FRASER UNIVERSITY
Spring 2015

All rights reserved. However, in accordance with the Copyright Act of Canada, this work may be reproduced, without authorization, under the conditions for “Fair Dealing.” Therefore, limited reproduction of this work for the purposes of private study, research, criticism, review and news reporting is likely to be in accordance with the law, particularly if cited appropriately.
Approval

Name: Jennifer Diep
Degree: Master of Public Policy
Title: Occupational Driver Impairment: Knowledge, Perceptions and Attitudes Amongst Employers in British Columbia

Examining Committee:

Chair: Doug McArthur
   Director

Judith Sixsmith
   Senior Supervisor
   Professor

Dominique M. Gross
   Supervisor
   Professor

Maureen Maloney
   Internal Examiner
   Professor

Date Defended/Approved: March 30, 2015
Partial Copyright Licence

The author, whose copyright is declared on the title page of this work, has granted to Simon Fraser University the non-exclusive, royalty-free right to include a digital copy of this thesis, project or extended essay[s] and associated supplemental files (“Work”) (title[s] below) in Summit, the Institutional Research Repository at SFU. SFU may also make copies of the Work for purposes of a scholarly or research nature; for users of the SFU Library; or in response to a request from another library, or educational institution, on SFU’s own behalf or for one of its users. Distribution may be in any form.

The author has further agreed that SFU may keep more than one copy of the Work for purposes of back-up and security; and that SFU may, without changing the content, translate, if technically possible, the Work to any medium or format for the purpose of preserving the Work and facilitating the exercise of SFU’s rights under this licence.

It is understood that copying, publication, or public performance of the Work for commercial purposes shall not be allowed without the author’s written permission.

While granting the above uses to SFU, the author retains copyright ownership and moral rights in the Work, and may deal with the copyright in the Work in any way consistent with the terms of this licence, including the right to change the Work for subsequent purposes, including editing and publishing the Work in whole or in part, and licensing the content to other parties as the author may desire.

The author represents and warrants that he/she has the right to grant the rights contained in this licence and that the Work does not, to the best of the author’s knowledge, infringe upon anyone’s copyright. The author has obtained written copyright permission, where required, for the use of any third-party copyrighted material contained in the Work. The author represents and warrants that the Work is his/her own original work and that he/she has not previously assigned or relinquished the rights conferred in this licence.

Simon Fraser University Library
Burnaby, British Columbia, Canada

revised Fall 2013
Ethics Statement

The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

a. human research ethics approval from the Simon Fraser University Office of Research Ethics,

or

b. advance approval of the animal care protocol from the University Animal Care Committee of Simon Fraser University;

or has conducted the research

c. as a co-investigator, collaborator or research assistant in a research project approved in advance,

or

d. as a member of a course approved in advance for minimal risk human research, by the Office of Research Ethics.

A copy of the approval letter has been filed at the Theses Office of the University Library at the time of submission of this thesis or project.

The original application for approval and letter of approval are filed with the relevant offices. Inquiries may be directed to those authorities.

Simon Fraser University Library
Burnaby, British Columbia, Canada

update Spring 2010
Abstract

Occupational driver impairment is a public safety concern, posing a threat to drivers, workers, employers, infrastructure and governments alike. In British Columbia, the prevalence of occupational motor vehicle incidents or fatalities as a result of impairment is unclear due to data collection inconsistencies, privacy concerns and complexities among various legal entities. Data drawn from other jurisdictions however, demonstrates that occupational driver impairment is a serious problem for society.

This study examines the issue of driver impairment in the workplace by investigating employers’ knowledge and attitudes about the issue. Employers hold a crucial role in fostering workplace health and safety. Methods employed in this study include an online cross-sectional survey and semi-structured interviews with employers. Results indicate driver impairment is a problem in BC workplaces and employers often lack the adequate tools to tackle the problem. A number of themes are then discussed to inform policy measures and to analyze four policy options. The findings from this study provide a portfolio of policy recommendations to address work-related driver impairment in British Columbia.

Keywords: driver impairment; workplace health and safety; road safety; motor vehicle crashes, employers
Dedication

To those who experience hardships or adversities – I hope you continue to believe in yourself and follow your dreams.

To Alex, Nelson and Kent, my accomplishments are for you. I am forever grateful for your unending support and love.
Acknowledgements

There are so many people who have made this project possible. I would like to firstly thank Dr. Judith Sixmith for all her wisdom, reassurance and support during this process. Thank you for never allowing me to give up, even during my most trying times and for inspiring me to always strive for the best. Thank you Dr. Doug McArthur for his unending support and encouragement throughout the past two years. Thank you to Winston, whose unwavering love during these past two years has been a source of strength. Shelagh Locke and Kevin Bennett, I am grateful for your advice and friendship. Mark Ordeman, you’ve been such an incredible support, I truly appreciate it. Thank you for helping make this project possible and for always supporting all my ideas. Thank you Dr. Jeff Brubacher and Dr. Herbert Chan for helping me brainstorm ideas during the early formulation stages of this project. Dr. Daniel Savas, thank you for your encouragement and survey support. Ray Zukanovic, thank you for all your uplifting words of encouragement and kindness. Aditi Master, thank you for your encouragement. Thank you to my incredible mentors, Dr. Don McLeod and Dr. Tom Kemple for always seeing the best in me throughout the years. Wendy Casey, you saved my life and I am forever indebted. Rhea, Les, Doris and Christine, thank you for always believing in me since day one. Tina, you’re the best – I can always count on you. Ksenia, I am so lucky to have an amazing friend like you in my life. Arti, Anson and Rachelle – you all have helped keep my spirits high and have kept me sane during these past two years. Thank you to all those who participated in this research – you made all of this possible! To all my incredible MPP friends, thank you for making this program enjoyable.
# Table of Contents

- Approval ........................................................................................................................... ii
- Partial Copyright Licence ................................................................................................... iii
- Ethics Statement ................................................................................................................ iv
- Abstract ............................................................................................................................. v
- Dedication ........................................................................................................................ vi
- Acknowledgements .......................................................................................................... vii
- Table of Contents ............................................................................................................ viii
- List of Tables ................................................................................................................... xi
- List of Figures .................................................................................................................. xii
- List of Acronyms ............................................................................................................. xiii
- Glossary ......................................................................................................................... xiv
- Executive Summary ....................................................................................................... xv

## Introduction ..................................................................................................................... 1

## Chapter 1. The Problem With Occupational Driver Impairment ......................... 4
  1.1. Occupational Driving ................................................................................................. 4
  1.2. Driver Impairment ..................................................................................................... 5

## Chapter 2. The Workplace ............................................................................................. 8
  2.1. Legal Consciousness ................................................................................................. 9
  2.2. Safety Culture .......................................................................................................... 9
  2.3. The Socio-Environmental Model and the Role of ‘Minimization’ in Workplace Health and Safety .................................................................................................................. 11

## Chapter 3. Legislations, Policies and Regulations ..................................................... 13
  3.1. BC’S Current Policy Landscape ................................................................................. 13
  3.2. WorkSafeBC ............................................................................................................. 14
  3.3. Summary ................................................................................................................... 15

## Chapter 4. Research Objective ..................................................................................... 16

## Chapter 5. Methodology ............................................................................................... 17
  5.1. Overview of Methodology ........................................................................................ 17
  5.2. Online Survey Design and Structure ...................................................................... 18
    5.2.1. Objectives ............................................................................................................ 18
    5.2.2. Design ................................................................................................................ 19
    5.2.3. Recruitment ........................................................................................................ 19
    5.2.4. Pilot .................................................................................................................... 21
    5.2.5. Distribution ........................................................................................................ 21
5.2.6. Structure of Survey ................................................................. 21
5.2.7. Survey Data Analysis ............................................................. 22
5.3. Interview Design and Structure ................................................... 22
  5.3.1. Interview Objectives ............................................................. 22
  5.3.2. Design ............................................................................. 22
  5.3.3. Recruitment .................................................................... 23
  5.3.4. Structure of Interview ......................................................... 23
  5.3.5. Interview Data Analysis ....................................................... 23

Chapter 6. Data Results .......................................................................... 25
6.1. Survey Results ........................................................................... 25
  6.1.1. Employer Profile Information .................................................. 25
  6.1.2. Survey Goals ..................................................................... 27
  6.1.3. Survey Outcomes ................................................................. 28
  ........... Do employers understand the legal and regulatory responsibilities relating ...
  ........... to occupational driver impairment? ............................................................. 28
  ........... Do employers recognize and understand the factors that impair driving? .......... 31
  ........... Is driver impairment an issue in BC workplaces and industry? ......................... 34
  ........... Do employers have the tools and resources to address driver impairment? ........ 38
  6.1.4. Survey Summary ................................................................. 41
6.2. Interview Findings ....................................................................... 41
  6.2.1. Barriers and Challenges of Addressing Driver Impairment with
  ........... Workers ......................................................................... 43
  ........... Legal and Administrative Complexities ................................................. 43
  ........... Dichotomies between Management and Direct Supervisors ......................... 45
  ........... Dichotomies between Small and Medium to Large Employers ....................... 46
  6.2.2. Covert Issue ...................................................................... 48
  6.2.3. Deviant Symptomatic Behaviour ...................................................... 49
  6.2.4. Trust Sustains a Culture of Safety ..................................................... 50
  6.2.5. Enforcement and Prevention must Work in Tandem with
  ........... Regulations ......................................................................... 52
  6.2.6. A Societal Problem ................................................................ 54

Chapter 7. Policy Options ....................................................................... 57
7.1. Employer Toolkit ......................................................................... 57
7.2. Public Education and Awareness Campaign ................................... 58
7.3. Increase WorkSafeBC Board Officer Presence .............................. 59
7.4. Regulatory Amendments .............................................................. 60

Chapter 8. Measurement and Evaluation Criteria .................................... 64
8.1. Effectiveness ........................................................................... 64
8.2. Healthy Workplace .................................................................. 65
8.3. Anticipated Stakeholder Collaboration ......................................... 66
8.4. Implementation Complexity ....................................................... 67
8.5. Summary of Criteria and Measures: .......................................... 68
Chapter 9. Policy Analysis ................................................................................................................. 70

9.1. Employer Toolkit ....................................................................................................................... 70
   9.1.1. Effectiveness ....................................................................................................................... 70
   9.1.2. Healthy Workplace ............................................................................................................ 71
   9.1.3. Anticipated Stakeholder Collaboration ............................................................................ 71
   9.1.4. Implementation Complexity ............................................................................................ 72

9.2. Public Education and Awareness Campaign ............................................................................. 72
   9.2.1. Effectiveness ....................................................................................................................... 72
   9.2.2. Healthy Workplace ............................................................................................................ 72
   9.2.3. Anticipated Stakeholder Collaboration ............................................................................ 73
   9.2.4. Implementation Complexity ............................................................................................ 74

9.3. Increased WorkSafeBC Board Officer Presence ..................................................................... 74
   9.3.1. Effectiveness ....................................................................................................................... 74
   9.3.2. Healthy Workplace ............................................................................................................ 75
   9.3.3. Anticipated Stakeholder Collaboration ............................................................................ 75
   9.3.4. Implementation Complexity ............................................................................................ 75

9.4. Regulatory Amendments ........................................................................................................ 76
   9.4.1. Effectiveness ....................................................................................................................... 76
   9.4.2. Healthy Workplace ............................................................................................................ 77
   9.4.3. Anticipated Stakeholder Collaboration ............................................................................ 77
   9.4.4. Implementation Complexity ............................................................................................ 77

9.5. Scoring Summary ...................................................................................................................... 78

Chapter 10. Recommendations ......................................................................................................... 80

Chapter 11. Conclusion .................................................................................................................... 82

Chapter 12. Limitations and Future Directions ............................................................................... 83

References ........................................................................................................................................ 86

Appendix A. WorkSafeBC Letter of Authorization ......................................................................... 93
Appendix B. Survey ......................................................................................................................... 94
Appendix C. Survey Participant Consent Form ............................................................................... 108
Appendix D. Interview Schedule ................................................................................................... 111
Appendix E. Interview Participant Consent Form ............................................................................ 112
List of Tables

Table 6-1. Respondents, stratified by organization size ........................................... 26
Table 6-2. Respondents, stratified by sector .......................................................... 26
Table 6-3. Knowledge of legal and regulatory responsibilities .................................. 29
Table 6-4. Example of a scenario question ............................................................... 32
Table 6-5. Example of attitudinal statement ........................................................... 33
Table 6-6. Number of impairment-related incidents in the past 12 months, stratified by sector .......................................................... 38
Table 6-7. Interview participants, by role, industry and organization size ............... 42
Table 8-1. Summary of Criteria and Measures ....................................................... 68
Table 9-1. Scoring summary of options analysis ..................................................... 78
List of Figures

Figure 2-1. Bronfenbrenner's Soci-Ecological Model describing environmental influences on employers, adapted for workplace health and safety........ 11
Figure 6-1. Awareness of WorkSafeBC impairment regulation, by sector................ 31
Figure 6-2. Perceived magnitude of driver impairment, before impairment definition................................................................. 35
Figure 6-3. Perceived magnitude of driver impairment, after impairment definition........................................................................... 36
Figure 6-4. Knowledge of workers who drive impaired.......................................................... 37
Figure 6-5. Presence of specific driver impairment policies and/or programs in place................................................................................ 38
Figure 6-6. Types of company impairment programs in place......................................... 39
Figure 6-7. Frequency of driver impairment discussion at the workplace.................... 40
Figure 6-8. Reasons for not addressing work-related driver impairment..................... 40
## List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAC</td>
<td>Blood alcohol content</td>
</tr>
<tr>
<td>BC</td>
<td>British Columbia</td>
</tr>
<tr>
<td>FTE</td>
<td>Full time employee</td>
</tr>
<tr>
<td>ICBC</td>
<td>The Insurance Corporation of British Columbia</td>
</tr>
<tr>
<td>IRP</td>
<td>Immediate roadside prohibition</td>
</tr>
<tr>
<td>JIBC</td>
<td>The Justice Institute of British Columbia</td>
</tr>
<tr>
<td>MVTA</td>
<td>Motor Vehicle Transport Act</td>
</tr>
<tr>
<td>OHS</td>
<td>Occupational health and safety</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>RCMP</td>
<td>Royal Canadian Mounted Police</td>
</tr>
<tr>
<td>UK</td>
<td>The United Kingdom of Great Britain</td>
</tr>
<tr>
<td>US</td>
<td>The United States of America</td>
</tr>
<tr>
<td>VPD</td>
<td>The Vancouver Police Department</td>
</tr>
<tr>
<td>WCB</td>
<td>The Worker’s Compensation Board</td>
</tr>
</tbody>
</table>
## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver Impairment</td>
<td>Reduced ability to perform adequately the various elements of the task of driving. Causes include, the consumption of alcohol, drugs (illegal, prescription and over-the-counter) or fatigue. (Adapted from: <a href="http://www.grsproadsafety.org/our-knowledge/safer-road-users/impaired-driving">http://www.grsproadsafety.org/our-knowledge/safer-road-users/impaired-driving</a>)</td>
</tr>
<tr>
<td>Employer</td>
<td>An adult from organizations who have direct influence on work practices. These participants should hold roles including, but not limited to, supervisor, foreman, forewoman, manager, owner, lead hands, supervisors.</td>
</tr>
<tr>
<td>Fleet</td>
<td>Groups of motor vehicles that are owned or leased by a business, agency or an organization rather by an individual. Examples include, but are not limited to, buses, taxies, and trucks.</td>
</tr>
<tr>
<td>Occupational/Work-Related Drivers</td>
<td>Any worker who drives as their occupation (professional driver) (e.g. truck driver, bus driver etc....) or workers who use their vehicles as a ‘tool’ in the course of employment, but their occupational title is not necessarily “driver” (professor, executive, nurse – all driving to work destinations) (Stuckey et al., 2013).</td>
</tr>
</tbody>
</table>

Executive Summary

Occupational driver impairment poses a significant public safety risk to workers, communities, society, families, businesses, and governments. Over the past decade, occupational road safety has gained increased international recognition (Stuckey et al., 2010). Notably, in 2008 the United Nations (UN) General Assembly “adopted a resolution on improving global road safety, [encouraging] organizations…to develop and implement policies and practices that will reduce crash risks for vehicle occupants and other road users” (Stuckey et al., 2010, p. 11).

There has also been increasing awareness for supporting the safety of workers engaged in work-related driving within the occupational health and safety field (Newnam et al., 2011). This growth is a result of many factors, some of which include, increased media attention relating to work-related driving impairment crashes and potential cost savings that can be realized as a result of effective management practices (Newnam et al., 2011).

Occupational driving involves greater risks than those typically encountered in other occupations, due to the greater annual mileage on work-related journeys, the likelihood of workers driving larger than average sized vehicles, and working conditions such as tight work schedules and time pressures. Research on the prevalence of occupational driving incidents or fatalities as a result of impairment is piecemeal and unclear due to data collection deficiencies, inconsistencies and privacy concerns.

In British Columbia, occupational driver impairment is governed by multiple laws, regulations and legal bodies. Its multifaceted nature makes it potentially challenging for workers to navigate and difficult for employers to manage. The significant risks and costs associated with occupational driver impairment to society warrant further examination and preventative measures.

The goal of this research is to contribute to road safety and workplace health and safety literature by investigating the knowledge, perceptions and attitudes amongst employers in British Columbia about driver impairment in the workplaces. A growing
body of safety literature demonstrates the critical role managers, supervisors and leaders hold in fostering health and safety in the workplace, particularly their ability to influence workplace policies. The data generated in this study serves to (1) evaluate the effectiveness of current legal instruments, (2) identify employer knowledge and attitudes and (3) foster public and workplace health and safety, by outlining policy options and recommendations that occupational health and safety bodies could adopt to address driver impairment.

This study draws from the academic literature and primary research. 456 completed online surveys and 17 semi-structured qualitative interviews with employers in BC were employed to evaluate and inform policy options. The survey found that most employers understand their legal responsibilities regarding driver impairment; many perceive occupational driver impairment as a moderate to serious problem in workplaces and most do not have policies and programs in place to address it. Key themes revealed from the interviews include: legal and administrative barriers, a covert issue, deviant symptomatic behaviour, trust sustains a culture of safety, and enforcement and prevention must work in tandem with regulations.

Four policy options were developed from the research findings to address occupational driver impairment, from an occupational-health and safety perspective. The policy options are: regulatory amendments, developing an employer toolkit, engaging in a public education and awareness campaign, and increasing WorkSafeBC Board Officer presence. These potential interventions were evaluated against four criteria: effectiveness, healthy workplace, anticipated stakeholder collaboration, and implementation complexity. The qualitative semi-structured interviews enabled employers to provide further insight and feedback on the extent of the policy problem, inform and evaluate policy options and discuss any barriers and challenges.

The analysis and evaluation of the four policy alternatives produced a set of recommended policy interventions to support workers and employers in addressing driver impairment. The first recommendation is to amend the roles and responsibilities of WorkSafeBC Board Officers to provide a greater level of enforcement and presence at workplaces. The second recommendation is for WorkSafeBC to immediately begin
developing and occupational driver impairment toolkit. The third recommendation is to liaise with external agencies such as ICBC, to deliver a public education and awareness campaign focusing on occupational driver impairment. Directions for future research are also outlined.

It is important to note that the factors that cause impairment are unique, and negatively effect the operation of motor vehicles in various ways. As such, due to limited scope, time and resources, this study takes a broad-based approach, focusing on impairment by alcohol, drugs and fatigue. Though this study’s scope is concerned with interventions through an occupational health and safety lens, the many policy interventions and ideas from this research can be translated to improve overall road safety and workplace health and safety.
Introduction

Occupational driver impairment poses significant risks to public safety and is costly to government, industry, businesses and society. Costs are related to emergency, medical, vehicle repair and maintenance costs, as well as insurance, legal and lost work-time costs (SafetyNet, 2009). Driver impairment can also cause damages to public property and employer reputation, harms to communities and families, and contribute to morbidity and mortality (SafetyNet, 2009).

Occupational driver impairment is a multifaceted issue, requiring the involvement of various organizations and intersecting many academic disciplines. As such, there is no single approach or solution to this issue. Impairment can also be due to a result of many factors. However, due to scope, time limitations and availability of evidence, this capstone focuses on alcohol, drugs and fatigue as sources of impairment. In addition, because this capstone occupies the realm of public policy, the scope is limited to interventions that can be employed by WorkSafeBC, or occupational health and safety bodies in other jurisdictions with similar governing structures. Furthermore, employers in British Columbia are the focus of this research because of the critical role they hold in fostering workplace health and safety and their ability to influence overarching workplace policies.

In BC, current available data on the prevalence and incidence of occupational motor vehicle incidents or fatalities as a result of impairment, is unclear due to data inconsistencies, privacy issues and complexities among various legal entities. Estimating the prevalence of impairment when driving for work has typically relied on worker surveys, reviews of work-related fatalities and drug testing (Frone, 2006; Ramirez et al., 2013). However, determining the prevalence of occupational motor vehicle crashes or fatalities as a result of impairment is challenging. These methods present
many limitations, such as underreporting and issues with drug testing and post-mortem testing, as not all workers are tested (Frone, 2006; Ramirez et al, 2013).

In BC, driver impairment is recognized as a road safety problem (ICBC, 2014). Academic studies and grey literature drawn from other jurisdictions demonstrates that occupational driver impairment exists and is a risk to public safety (Boufous and Williamson, 2006; OHSA, 2014; Ramirez et al., 2013). As such, addressing occupational driver impairment in BC requires taking proactive action where scientific understanding is incomplete to avoid harms to public safety. This notion of taking protective action where scientific understanding is incomplete to avoid or reduce serious threats of harm is enshrined in the approach to risk management called the precautionary principle (WHO, 2004). The World Health Organization states “the precautionary principle provides a framework, procedures and policy tools for public policy actions in situations of scientific complexity [and] uncertainty…where there may be a need to act before there is strong proof of harm in order to avoid, to reduce, potentially serious or irreversible threats to [public health or public safety]” (WHO, 2004). This principle is embodied within various environmental laws, such as the Canadian Environmental Protection Act (The University of Victoria, 2010). The social and economic costs of inaction to prevention work-related driver impairment are severe and merits further examination and prevention measures.

In this study, I investigate the knowledge, perceptions and attitudes amongst employers in British Columbia about occupational driver impairment through a socio-environmental lens. Up until now, this particular perspective of examining driver impairment through a socio-environmental lens, from a supervisory or managerial frame of reference has not been assessed. This study uses mixed-methods approach, employing a cross-sectional survey and qualitative interviews to answer the research questions. These findings serve to inform policy development and evaluation. This study offers a unique contribution to road safety and occupational health and safety literature, by providing a critical policy analysis approach to formulate and evaluate potential policy interventions.
The first chapter of this capstone outlines the problem with occupational driver impairment. I describe why driving is a risky occupation, and coupled with impairment, creates increasingly hazardous road safety conditions and is a road safety problem in BC. Chapter 2 examines the workplace and the ways in which driver impairment is embedded within dynamic and complex norms and institutional structures, making it challenging for individuals to negotiate. The socio-ecological or socio-environmental model is briefly described as a guiding framework to this capstone. The significant role of employers in espousing safe work behaviours and practices is also described in this chapter. The research questions are then presented. Chapter 3 lays out the current policy landscape in British Columbia, which is the focus in this capstone. Chapter 4 presents the research objective and research questions. Chapter 5 describes the methodology used to answer the research questions. Chapter 6 provides the data results. Survey results in the form of descriptive statistics help to understand the perceived magnitude of the issue and whether regulatory responsibilities are understood among employers, and if the presence of tools and resources exist. Results from the semi-structured qualitative interviews are also described to further investigate the policy problem, as well as to inform and evaluate potential policy options. In particular, 17 semi-structured interviews were conducted with employers from various industries. Chapters 7 and 8 describe four policy options and four policy criteria. Chapter 9 evaluates the policy options using the selected criteria and measures and provides a summary of the findings. Based on these findings a portfolio of policy options is recommended in chapter 10. Lastly, conclusions, limitations and future directions are then provided in the remaining chapters.
Chapter 1.

The Problem With Occupational Driver Impairment

1.1. Occupational Driving

Work-related transportation is essential to the functioning of governments, businesses and modern society. Modernization, urbanization and contemporary work patterns result in a greater demand for goods and services and corresponding increases in occupational travel and transport (Stuckey et al., 2007). In British Columbia, it is estimated that 24% of drivers (642,000 drivers) drive for work purposes outside of commuting to and from work (as cited in Anderson and Bowles, 2014).

The task of driving is a hazardous activity involving higher risks than those typically encountered in other occupations or many activities of daily life (ERSO, 2007; Townsend and Simcic, 2010). Literature suggests that a “work-related driver effect” exists (Newnam et al., 2011), whereby occupational drivers are more likely to be involved in road crashes compared to non-work related drivers in personal vehicles (Newnam et al., 2011). Occupational drivers are a unique group of road users who have demonstrated higher levels of risk-taking behaviours, are usually under tight work schedules and time pressure, and are more likely to driver larger than average sized vehicles (Boufous and Williamson, 2009). Elevated motor vehicle crashes for work-related drivers could also be the result of greater annual mileage on work-related journeys (Newnam et al., 2011). The level of exposure to risk is demonstrated in research about a third of all travel is work-related and fleet vehicles travel about three times the distance of the average private vehicle (Murray et al., 2003). For instance, research by Haworth et al. (2002) indicates that over the period from 1993 to 1998, 17% of all fatal crashes in Canada were associated with heavy vehicles. A survey of 447 occupational drivers and drivers of personal vehicles in the UK found that work-related
drivers had about 50% more vehicle crashes than drivers in private vehicles, even after taking into consideration demographic differences (as cited in, Mitchell et al, 2014). Cross-jurisdictional data from Australia reveals that motor vehicle incidents represents 41% (N=88) of all compensated work fatalities (Australian Government, 2007).

1.2. Driver Impairment

Occupational driving is inherently risky, and when coupled with impairment, creates an increasingly hazardous situation. Occupational driver impairment poses a danger to public safety and is a concern for workers, employers, pedestrians and infrastructure. The amplified risks associated with occupational impaired driving exist because work-related drivers regularly interact with other employees, drivers, pedestrians, property and members of the public. The terms “occupational driver impairment” and “work-related driver impairment” are often used in research and practice synonymously. For the purposes of this study, these terms are referred to interchangeably.

In British Columbia, impaired driving is a road safety problem. On average, ninety-six people\(^1\) are killed in motor vehicle crashes involving impaired driving and approximately 29 per cent of all motor vehicle fatalities are related to impaired driving (ICBC, 2014). Factors causing impairment include alcohol, drugs, fatigue and various medical conditions. Despite the burden it causes, research on the prevalence of impaired driving for work-related drivers however, is extremely limited (Boufous and Williamson, 2006). With respect to BC, the prevalence of occupational motor vehicle incidents or fatalities as a result of impairment is unclear due to data collection deficiencies, privacy concerns and complexities amongst various legal entities. The remaining data is scant and piecemealed together, drawn from other jurisdictions and studies on truck drivers. Furthermore, the jurisdictions and contexts from which these studies are drawn are comparable to BC because of similarities in occupational health

\(^1\)5 year police reported average
and safety structure and political governance. Nonetheless, it is clear that work-related driver impairment is a dangerous problem to society.

While literature reveals a strong link between alcohol and drug use and crash risk (Drummer et al., 2003; Swann et al., 2002; Ramaekers et al., 2004), current data on the prevalence of alcohol or drug impairment causing worker injury is piecemeal and warrants discussion (Frone, 2006). For instance, Frone’s (2006) study found an overall low prevalence of drug use at work. Frone used a US National Survey of 2,806 workers to estimate the frequencies of illicit drug use at work, and the frequency of impairment at work from drugs. Results reveal 1.62% of the workforce used marijuana in the workplace and 1.74% were impaired at work.

Other studies such as Boufous and Williamson’s (2006) record linkage study, demonstrate that fatigue is implicated in a large proportion of work-related traffic crashes, and alcohol is not. Boufous and Williamson’s study linked police records and worker’s compensation data from over 13,124 drivers, who were injured or died due to a work-related crash in Australia, over a 5-year period. Results revealed fatigue was reported in 20% of work-related traffic crashes and 28% of fatalities involving heavy truck drivers in Australia. Illegal alcohol levels however, did not contribute a major role to crashes, and were only implicated in 1.1% of crashes. Males were more likely than females to have illegal alcohol levels (Boufous and Williamson, 2006). Unfortunately, drugs were not considered in their study and this can be considered a limitation. Most recently, Ramirez et al. (2013) reviewed toxicology results of 427 fatally injured workers in Iowa, U.S. Their findings demonstrate there were 98 fatalities due to MVIs, and of these, 79 had toxicology tests performed. Results indicated 18% (N=14) tested positive for any drug, including alcohol and 15% (N=12) had levels to potentially cause impairment. However, positive toxicology tests do not necessarily indicate impairment.

Additionally, grey literature produced by Occupational Health and Safety Administration in the United States reveals alcohol is a contributing factor in 39% of all work-related motor vehicle crashes (OSHA, 2014). With respect to marijuana, Ramaeker et al.’s (2004) systematic review of cannabis use crash risk suggests that recent cannabis use increases crash risk, compared to drug free drivers and especially
at higher concentrations. They also found that the effects of cannabis and alcohol “on driver performance and the risk of motor vehicle crashes appear to be additive [and] the sum can be large and potentially dangerous” (p. 117). The studies presented provide a range of data and an overview of the literature relating to the problem. However, this data is not without limitations. Therefore, further investigation on the extent of the issue through another lens is important to understanding and addressing this problem.

Though BC lacks such data, the dangers presented by occupational driver impairment and the extent of the issue, as demonstrated in the aforementioned jurisdictions and academic studies, suggest there are too many motor vehicle incidents where impairment is a factor. Furthermore, the problem of general impaired driving in BC demonstrates that the risks and costs associated with occupational driver impairment are too perilous to ignore.
Chapter 2.

The Workplace

The relationship between alcohol, drugs and fatigue and its effect on driving is well documented in research and practice (Compton et al., 2009; DeArmond and Chen, 2009; Boufous and Williamson, 2006). This study however, takes a socio-environmental approach to understanding driver impairment in the workplace. In this study, I argue that occupational driver impairment is embedded within complex, dynamic and multifaceted organizational and legal structures making it challenging for employers to govern and workers to negotiate. Ames and Delaney (1992) evidence this in their research at a machinery company in the United States where they found that the general plant population found organizational alcohol policy confusing, and front-line workers were ambivalent towards the policies. Typically, research on impairment in the workplace has predominately focused on alcohol. Ames and Delaney (1992) state that research and policies on alcohol problems in the workplace have predominately focused on the individual drinker, reflecting the “medicalization” and individualization of impairment in the workplace. Moving beyond the dominant discourse of understanding impairment in workplaces as a direct result of the individual requires acknowledging the complex power relations and organizational constraints that workers and employers negotiate daily. Work-related driver impairment is illegal, yet far too many workers continue to engage in this dangerous behaviour. My study examines the pathways by which complex organizational and legal structures interact to govern workers and employers. I focus on employers because employers hold a crucial role in fostering health and safety in the workplace. I contend that how employers understand, enact or minimize laws and regulations can have important implications for workplace safety culture and understanding occupational driver impairment.
2.1. Legal Consciousness

Ewick and Silbey (1998) state that legal consciousness are the ways in which individuals understand, negotiate and apply the law. Legal consciousness is the process where individuals give meanings to how they understand the world, which then makes up the “material world and discursive systems that limit and constrain future meaning making” (Ewick and Silbey, 1998). Social structures are formed when individuals reproduce, enact, adjust or disregard the meanings of laws (Ewick and Silbey, 1998). Consequently, in order to understand the complexities surrounding why occupational driver impairment exists, it is important to understand how employers interact with policies, regulations and laws relating to that issue. Considering how occupational driver impairment laws, policies and regulations are experienced, perceived and enacted by employers and the reasons why they engage, evade or challenge these laws is paramount to developing meaningful and effective policies.

2.2. Safety Culture

Employers occupy a central position in promoting workplace health and safety. A growing body of research supports the significance of supervisors’ safety knowledge and leadership in promoting workers’ engagement in safety (Bahn, 2013; Conchie et al., 2013). Safety culture can be broadly defined as shared values, attitudes and beliefs amongst members in an organization in relation to safety (Cooper, 2000). It is the set of behaviours, attitudes, norms, values, perceptions and thoughts regarding safety. Bahn (2013) investigated the impact frontline supervisors have on workplace safety culture and found that the value that supervisors place on safe work practises is crucial to the level of safety demonstrated in a work environment. Strong safety cultures are essential for improving safety compliance behaviour and front-line supervisors “have a direct positive relationship on employee safety participation behaviour” (Kapp, 2012). As such, the knowledge and understanding that supervisors convey, “or the standards set by that person” or team, is a key determinant of the safety culture in a workplace (Bahn, 2013). Safety culture is also in a constant state of renewal as individuals continuously interact with internal and external factors.
The mechanisms that influence work-related driver impairment are complex. Workplace safety culture is multifaceted and constantly evolving. Cooper (2002) asserts that organizational culture is a result of many goal-directed interactions between individuals (psychological); jobs (behavior); and the organization (situational). Individuals and their environments influence each other in an ongoing and dynamic manner. Choudhry (2007) states that management commitment and worker support are essential to safety culture and particularly, management commitment holds an essential role in promoting positive safety culture. Research indicates that managers influence safety-oriented behaviours through communication of salient information and supervisors, through their regular interactions with workers (Choudhry et al, 2007). Research acknowledges that safety culture involves management commitment to safety (Choudhry et al., 2007). Safety-related attitudes and behaviours among employers are very important in promoting safety culture (Parker et al., 2006). Probst and Estrada’s (2010) research of underreporting workplace injuries and incidents among employees in the US found that the number of unreported accidents was significantly higher than reported ones. Their results also reveal underreporting was higher in workplaces with poor organizational safety climate or where supervisors lacked safety leadership behaviours, such as enforcement behaviours. They also found that safety climate and supervisor safety leadership behaviours are “potentially critical to demining whether safety problems receive a “noisy fix” or a “quiet fix” and impacts whether workers are comfortable with bringing forth safety concerns and incidents to supervisors to address the root causes of the problems. They found that the degree of safety enforcement by supervisors impacts whether employees under-report workplace injuries and incidents (Probst and Estrada, 2010). Therefore, understanding employers’ conceptualizations of occupational driver impairment, their safety behaviours is important to tackling this issue due to their critical role in influencing safe work practises.
2.3. The Socio-Environmental Model and the Role of ‘Minimization’ in Workplace Health and Safety

Few studies describe the socio-environmental structures that influence employers and workers towards impairment or driver impairment at work. Bronfenbrenner’s socio-environmental or socio-ecological model considers the dynamic interactions between various “nested systems” (Bronfenbrenner, 2006, p. 796). These systems are broadly comprised of the microsystem (relationships that exist that impacts the individual), exosystem (interactions between other systems) and macrosystem (societal, cultural and social norms, laws and policies). (Bronfenbrenner, 2006). Bronfenbrenner’s socio-ecological model provides one conceptual framework through which we can examine driver impairment in the workplace as a complex process involving the dynamic interplay between workers, employers, regulations, policies and social norms. Figure 2-1 describes these relationships. Bronfenbrenner’s model also serves as a conceptual framework through which policy interventions in this capstone are situated within.

![Bronfenbrenner's Soci-Ecological Model](http://www.biomedcentral.com/1471-2458/9/94/figure/F1?highres=y)

**Figure 2-1.** Bronfenbrenner's Soci-Ecological Model describing environmental influences on employers, adapted for workplace health and safety

2 Adapted from “http://www.biomedcentral.com/1471-2458/9/94/figure/F1?highres=y”
Furthermore, Ames and Delaney (1992)’s ethnographic analysis of an assembly plant in a large manufacturing industry in the United States however, provides important insight into this connection. They examined socio-environmental risk factors for workplace drinking problems and describe how “minimization” of alcohol problems becomes systemized in the cultural organization of a workplace. Ames and Delaney (1992) define “minimization” as the “values, beliefs and practices that reduce awareness, acknowledgement, assessment of the occurrence and concrete effects of drinking and alcohol related problems” (p. 180). They focused on supervisors’ role of minimizing alcohol problems at work. Their results demonstrate that supervisors tended to minimize issues relating to alcohol at work due to environmental, policy and external factors. The researchers found that supervisors tended to inadvertently act in an ambivalent manner towards, as well as discount and minimize alcohol-related issues at work, despite the clear effects of drinking behaviour in the workplace (Ames and Delaney, 1992). Supervisors tended to minimize alcohol-issues a work due to a variety of reasons. Firstly, policies were confusing and unclear, leading supervisors, and even union leaders to be complacent in administering the policies. Secondly, a workplace culture of acceptance of alcohol was present, and as a result, supervisors were less inclined to disrupt that organizational norm. Thirdly, dealing with alcohol-related discipline is time consuming and supervisors had primary work priorities that overrode disciplinarily duties and the enforcement of such policies. Lastly, many supervisors were disinclined to become involved in alcohol-related confrontations and would rather deal with immediate workplace needs than alcohol-related problems. I reason that many of the tenents and findings from Ames and Delaney (1992)’s study regarding supervisor ambivalence and minimization of alcohol at work also apply to occupational driver impairment issues in BC workplaces. The reason being that occupational driver impairment is overseen by many legal entities and is fraught with human rights, confidentiality, and privacy concerns. Therefore, employers may not immediately be able to confront and deal with occupational driver impairment issues due to a multitude of socio-environmental factors.
Chapter 3.

Legislations, Policies and Regulations

3.1. BC’S Current Policy Landscape

Work-related driver impairment is a complex issue, overseen by multiple provincial and federal laws, regulations and legal bodies. Its multidimensional nature makes it potentially challenging for work-related drivers to navigate, and difficult for employers to manage. In BC, there are no laws or regulations specifically targeting “occupational driver impairment”. In BC, it is addressed by a myriad of provincial and federal laws and regulations.

Federally\(^3\), “it is a criminal offence to operate a motor vehicle (whether in motion or not) while impaired, which includes driving with a blood alcohol content exceeding eighty milligrams of alcohol in one hundred milliliters of blood (0.08 BAC), or impaired by a drug” (The Province of B.C., 2014). The Motor Vehicle Transport Act (MVTA) administered by Transport Canada, also regulates commercial vehicles and drivers aims to hedge against driver’s fatigue. Under the MVTA, the Motor Carrier Safety Fitness Certificate Regulations and the Commercial Vehicle Drivers Hours of Service Regulations\(^4\) bind commercial vehicles and drivers.

Provincially, the Motor Vehicle Act states that a driver can be served with an Immediate Roadside Prohibition (IRP), if an Approved Screening Device indicates a driver has Blood Alcohol Content not less than 0.05 mg/100ml (The Province of B.C., 2014).

\(^3\) The Criminal Code of Canada (s. 249-261)

3.2. WorkSafeBC

WorkSafeBC, The Workers Compensation Board of British Columbia is responsible for ensuring the health and safety of all workers in British Columbia. WorkSafeBC serves around 2.1 million workers and approximately 200,000 employers throughout British Columbia (WorkSafeBC, 2015). It is funded by insurance premiums paid by registered employers and by investment returns. In the administration of the Workers Compensation Act, WorkSafeBC is separate and distinct from government, but is accountable to the public through government in its role in protecting and maintaining the overall well-being of the workers’ compensation system” (p. 2).

When a “motor vehicle” is used for work purposes, it is considered a “workplace” under the WorkSafeBC Act. However, due to the non-traditional nature of the motor vehicle, it may not be considered as a workplace by employers, supervisors or workers. Considering the lack of research on occupational driver impairment and its devastating impact, understanding the ways in which employers understand this problem and exploring public policies to address this issue, are essential for the prevention of public injury and death.  

Within the occupational health and safety realm, the WorkSafeBC Act provides a general duty clause stating employers must ensure the health and safety of their workers and workers must ensure they are not impaired by alcohol, drugs or other causes while at work. WorkSafeBC’s Occupational Health and Safety Regulation also address physical or mental impairment and impairment by alcohol, drugs or other substances in a workplace.

The non-traditional work environment of a motor vehicle, legal nuances and lack of occupational guidelines specifically addressing work-related driver impairment

http://www2.worksafebc.com/publications/OHSRegulation/workerscompensationact.aspx#SectionNumber:Part3Division3

http://www2.worksafebc.com/publications/OHSRegulation/workerscompensationact.aspx#SectionNumber:Part3Division3
presents a potential source of uncertainty of responsibility amongst workers and employers. Ensuring employers incorporate understandings of occupational driver impairment into their workplace safety cultures is crucial for prevention and ensuring public health and safety.

Furthermore, understanding and preventing work-related driver impairment is aligned with the objective outlined in BC’s Guiding Framework for Public Health of “building a culture of safety at work by increasing awareness of injury risks and prevention activities” (Ministry of Health, 2014). BC’s Guiding Framework identifies seven goals and key areas of focus for BC’s public health system over the next 10 years. Motor vehicle incidents are embodied with “Goal 5: Injury Prevention: from unintentional injuries. Data from 2010 indicates that falls and transport related incidents were the leading cause of hospitalization from unintentional injuries (Ministry of Health, 2014). In addition, the use of alcohol and other substances is identified as a risk factor for injuries from events such as motor vehicle incidents (Ministry of Health, 2014). Therefore, by understanding the perceived magnitude of the issue in BC among employers, and whether resources currently in place are effective, will provide a unique perspective on addressing occupational driver impairment.

3.3. Summary

- Occupational drivers have an elevated crash risk compared to non work-related drivers
- Impairment increases crash risk and can be caused by a variety of factors, including alcohol, drugs and fatigue
- Current data on the prevalence of alcohol or drug impairment causing worker injury is unclear
- Employers hold an important role in fostering workplace health and safety
- It is uncertain whether employers have the adequate resources to address driver impairment in workplaces
Chapter 4.

Research Objective

This study addresses the policy problem that there are too many occupational driving incidents where impairment is a factor. Accordingly, I examine this issue in BC by finding out how important employers perceive the magnitude of this problem to be. Data deficiencies and limited research on work-related driver impairment, especially in BC, warrants further investigation. Therefore, my study contributes to this body of literature by investigating the knowledge, perceptions and attitudes amongst employers in British Columbia about driver impairment in their workplaces. The data generated from this project: (1) serves to evaluate the effectiveness of current legal instruments, (2) identify employer knowledge and attitudes, and (3) foster public and workplace health and safety by outlining policy options and recommendations that occupational health and safety bodies like WorkSafeBC could adopt to address work-related driver impairment.

In particular, this project explores the following research questions:

• How do employers understand legal responsibilities relating to occupational driver impairment in BC?
• What are employers’ knowledge and attitude towards factors that impair driving, which include drugs, alcohol, fatigue and medical conditions?
• To what extent do employers perceive occupational driver impairment as an issue in BC workplaces or their workplaces?
• What tools and resources do employers presently have in place to address occupational driver impairment?
Chapter 5.

Methodology

The purpose of this research is to investigate the aforementioned research questions. This section describes the research questions identified in the course of this study and the approach used to answer these questions. The research questions also guided survey and interview development.

5.1. Overview of Methodology

Primary research for this study employed a mixed-methods approach to data collection:

- Cross-sectional online survey with employers
- Semi-structured stakeholder interviews with employers

A mixed-methods approach is appropriate for this study because it provides both a broader approach to investigating the issue and yields in-depth information. The main purpose of the survey is to collect primary data on the knowledge, understanding and attitudes of employers on issues relating to occupational driver impairment. This survey measures employer knowledge on legal responsibilities, attitudes and perceptions about factors that contribute to impairment. It also measures the perceived magnitude of the issue in BC workplaces and industries according to employers, and examines whether the occupational health and safety programs that currently exist in workplaces which address work-related driver impairment issues. Data collected in this survey provides information to understand employer experiences relating to driver impairment in the workplace, identify areas where education and resources are needed to prevent impaired driving at work, and aid in the development of policy measures and evaluation criteria.
Stakeholder semi-structured interviews were used for primary research to gain a comprehensive understanding of key issues identified in the survey. Stakeholders, for the purposes of the interviews, are defined as employers, or individuals who have responsibility over decision making in an organization. The interviews complemented the survey and served to fill in any information gaps about the context of the issue. Interviews allowed employers the opportunity to share their experiences about driver impairment at their workplace, in order to gain insight on how situations are handled. Interviews also provided greater depth on how legal responsibilities are understood and the practicality and/or challenges of potential policy options.

This research was approved by the Simon Fraser University Office of Research Ethics, in compliance with the internal policies of the University Research Ethics Board, and WorkSafeBC The Worker’s Compensation Board of British Columbia (See Appendix A).

5.2. Online Survey Design and Structure

I chose to conduct an online cross-sectional survey with employers in order to gain a sense of the magnitude of work-related driver impairment in BC and to understand the prevailing attitudes, knowledge and understandings relating to driver impairment in the workplace amongst this group. Employers play a significant role in fostering workplace health and safety because they have the authority to encourage, influence and change workplace safety culture and policy (Choudhry, 2007). The online survey format also provided me with an opportunity to efficiently survey a large sample of a targeted population that I would have had difficulties reaching without this medium.

5.2.1. Objectives

I identified four objectives for the focus of the survey:

- To reveal the perceived magnitude of work-related driver impairment in BC workplaces through an employers’ perspective
- To reveal understandings of contributing factors to driver impairment
• To reveal the tools and resources employers have in place to address driver impairment
• To reveal perceived need for resources and tools to address the issue

5.2.2. Design

Survey research is a method to collect primary data for “describing a population too large to observe directly” (Babbie and Benaquisto, 2010). Surveys are used for a variety of purposes, and are typically used to measure attitudes of a large population by operationalizing defined objectives. The survey was administered on the online survey platform Qualtrics. A pilot survey was sent out on the week of November 17, 2014 to 108 employers in BC to try to identify any potential practical problems with the research procedure, record the time taken to complete the survey, assess whether each question gives an adequate range of responses, shorten and revise, and improve the internal validity of the questionnaire. I released my full survey on December 1, 2014. Based on the pilot survey responses, Monday in the morning yielded the best responses and as a result, I released my survey on Monday at 8 am.

Advantages of using online survey methods include the flexibility in questions asked on a given topic, potential to sample a large population, the standardization of data collection and the cost effectiveness of the administration by elimination postage, paper and data entry costs (Wright et al., 2005; Wright et al., 2008). Also, responses are entered directly into the online survey platform and can be easily organized and the ability to send reminder notifications is available. Disadvantages of surveys can include response bias, the tendency to answer questions from a particular manner, selection bias, or responses from individuals who are more likely than others to complete the online survey. (Wright et al., 2005).

5.2.3. Recruitment

The target population for this survey are employers who are currently registered with WorkSafeBC as of January 1, 2014. I limited the size of employers to those with 4 or more full time employees (FTES) to try and eliminate the release of any personal email addresses and mitigate potential privacy concerns.
There are approximately 50,000 employers with 4 or more FTES registered with WorkSafeBC. WorkSafeBC segments employers according to FTE count as follows:

- Small (4-19 FTES)
- Medium (20-99 FTES)
- Large (100 or more FTES)

Because there may be possible differences in knowledge, perceptions and capacities relating to occupational driver impairment amongst large employers versus small to medium employers, I oversampled “large” employers. Large employers are more likely than small employers to have in place, comprehensive safety policies and programs.

I also stratified employer groups based on the FTE count categories small, medium and large and requested from WorkSafeBC, for the following sectors and subsectors to be sampled:

- Primary resources + subsector
- Manufacturing + subsector
- Construction + subsector
- Service + subsector
- Transportation and warehousing + subsector
- Public + subsector

These are the sectors that typically employ work-related drivers. As a result, in 2013 there were 209,000 employers registered in rateable sectors. When employers with less than 4 FTES were removed, the sample size was N=60,024. The number of employers in this group with email addresses was N = 30,309. Within each sector, I requested from WorkSafeBC for a 20% random sample drawn from small and medium employers and a 40% random sample drawn from large employers. I oversampled large employers as small and medium employers make up a disproportionately larger segment of businesses in BC.

As such, WorkSafeBC provided me with a sample size of 6,100 employer email contacts. I also requested for subsectors to be identified to draw out any variances or
similarities between different sectors that could be of potential interest in the survey. All contact with employers and call for participation was delivered through the email platform within Qualtrics.

5.2.4. Pilot

Prior to sending the survey, I piloted the survey twice, once on Friday November 21, 2014 at 10:00 am to 50 respondents, and the again on Monday November 24, 2014 at 8:00 am to 50 respondents. The purpose of sending out a pilot survey was to gather feedback on the survey and survey process, gain insight on the day of the week and time of the day that respondents were most likely to open and complete the survey, obtain the average time respondents took to complete the survey, and to examine whether the responses were skewed or evenly distributed.

5.2.5. Distribution

The survey was distributed via email at 8 am on December 1, 2014 to all respondents, including the 50 pilot respondents. To encourage responses, reminder emails were sent out on December 8, 2014 and finally on December 15, 2014. The survey and reminder emails were sent out at 8 am on a Monday because this was the day and time the pilot survey indicated respondents were likely to open and complete the survey.

5.2.6. Structure of Survey

The survey was structured according to the research objectives in the form of the following topics:

- General demographic information
- Perceived magnitude of the problem
- Knowledge
- Perceptions and attitudes
- Practice
- Recruitment for interviews
5.2.7. **Survey Data Analysis**

The data from the survey was analyzed using descriptive statistics. General descriptive statistics was analyzed using the software STATA 13.

5.3. **Interview Design and Structure**

The interviews provided context to issues and topic areas identified in the survey. It also gave employers an opportunity to evaluate existing and potential policies and programs relating to work-related driver impairment.

5.3.1. **Interview Objectives**

The data generated from my interviews were used to answer my research questions, as well as the following policy-based questions. These questions also served as key topic areas.

- What are the prevailing opinions on the perceived extent of the issue in BC industries?
- What are the current actions taken by the organization to prevent or mitigate work-related driver impairment?
- What are the challenges and barriers of addressing work related driver impairment?
- What are the possible solutions to address work-related driver impairment?
- What are the limitations to policy development in this area?
- What are the opinions regarding potential policy options?

5.3.2. **Design**

Semi-structured interviews provided participants an opportunity to offer their unique insight into issues that that particular population holds (Braun and Clarke, 2006). I chose to conduct interviews with employers in order to obtain greater insight concerning the viability of potential policy options, and the challenges and barriers of addressing driver impairment in the workplace. Interviews were audio-recorded and transcribed in order to identify themes and patterns within participant responses.
5.3.3. Recruitment

At the end of my survey, I advised participants that I would be conducting follow-up interviews with those interested, to discuss their perspectives to evaluate potential policies and programs to address this problem. I provided a space for participants to input their name, email address and phone number. Participants were told they would be chosen at random to participate in a follow-up interview and if they agreed to be contacted, they were able to decline the request when contacted. A total of 53 respondents expressed interest in participating in follow-up interviews and left their contact information. I then randomly chose 20 respondents to contact. I first emailed all 20 respondents an interview consent form and information sheet outlining the topics of discussion. I then followed up by phoning all 20 respondents to schedule either a face-to-face or telephone interview. 3 respondents declined to be interviewed expressing time constraints or that were no longer interested. 17 participants agreed to be interviewed via the telephone.

5.3.4. Structure of Interview

The interviews were conducted using the semi-structured interview guide approach (Patton, 1990). Semi-structured interviews are constructed from topic areas or issues, allowing interviewees to express their thoughts and attitudes freely. An interview schedule used to facilitate conversation. Wording and order of the topics can vary making semi-structured interviews more conversational than other types such as structured interviews. The advantage of the semi structured interview style is that data collected tends to be comprehensive and rich (Minter, 2003). In addition, there is opportunity to probe interviewees for further insight. Interviewees are also able to expand and elaborate on ideas.

5.3.5. Interview Data Analysis

Data from my interviews were analyzed using the thematic analysis technique. The interviews were transcribed to identify themes and patterns. Braun and Clarke (2006) describe thematic analysis as “a method for identifying, analyzing and reporting patterns (themes) within data”. This study uses the Six Phases of Thematic Analysis
identified by Braun and Clarke (2006). Thematic analysis lends itself to multiple theoretical and epistemological frameworks, and can therefore be applied to many different research objectives.

Key themes were drawn from telephone interviews with 17 employers. The purpose of my interviews was to supplement the survey by obtaining insight on the viability of potential policy options, further explore the challenges and barriers of addressing driver impairment in the workplace and understand dominant attitudes on the perceived extent of the problem of driver impairment in the workplace from an employers’ perspective. These interviews provided the opportunity to explore in greater depth issues identified from my survey. To protect the privacy of those being interviewed, interviewees’ personal and company names are not used in analysis.
Chapter 6.

Data Results

6.1. Survey Results

WorkSafeBC provided 6,100 employer business email addresses for contact. 764 email contacts were undeliverable, 8 respondents asked to be removed from the survey and 6 respondents indicated they were no longer registered as an employer. As a result, the survey was successfully delivered to 5322 employers.

From the 5322 emails successfully delivered, a total of 596 responses were opened, partially started and therefore, captured in the data (11.1% response rate). 9 respondents declined participation, and 131 did not complete the survey, leaving a total of 456 completed surveys (completion rate of 76.5% on opened survey link). Because I advised survey respondents they could skip questions they did not wish to answer, they were able to stop the survey at any time or leave questions unanswered. As a result, there are minor variations in the completeness of responses to questions received.

6.1.1. Employer Profile Information

The survey found that 77% (N=430) of employers have responsibility for supervising or managing employees in their firm or organization. The remaining respondents identified as administrative staff, human resources personnel or as safety coordinators. When asked to identify their role within their organization, most respondents identified as managers (31%, N=171), or owners (39%, N=215). This is important because managers and owners have the capacity to influence workplace health and safety culture.
60.5% (N=321) of respondents were small employers with 4-19 employees (See Table 1). Medium employers accounted for 18.7% (N=121) of respondents and large employers made up 16.6% (N=88) of respondents.

Table 6-1. Respondents, stratified by organization size

<table>
<thead>
<tr>
<th>Size of Organization</th>
<th>Response (N)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (4-19)</td>
<td>321</td>
<td>60.5%</td>
</tr>
<tr>
<td>Medium (20-99)</td>
<td>99</td>
<td>18.7%</td>
</tr>
<tr>
<td>Large (100+)</td>
<td>88</td>
<td>16.6%</td>
</tr>
<tr>
<td>Total</td>
<td>530</td>
<td>100%</td>
</tr>
</tbody>
</table>

As illustrated by Table 6-1, 43% (N=232) of employers who answered the survey belonged to the service sector, 13% (N=73) construction sector, 12% (N=64) to the trade sector, 10% (N=50) to manufacturing, 7% (N=38) primary resources, 3% (N=21) to transportation and warehousing, 1% (N=7) to the public sector and 11% (N=56) to other.

Table 6-2. Respondents, stratified by sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of Employers (N)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Resources</td>
<td>38</td>
<td>7%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>50</td>
<td>10%</td>
</tr>
<tr>
<td>Construction</td>
<td>73</td>
<td>13%</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>21</td>
<td>3%</td>
</tr>
<tr>
<td>Trade</td>
<td>64</td>
<td>12%</td>
</tr>
<tr>
<td>Service</td>
<td>232</td>
<td>43%</td>
</tr>
<tr>
<td>Public</td>
<td>7</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>56</td>
<td>11%</td>
</tr>
<tr>
<td>Total</td>
<td>532</td>
<td>100%</td>
</tr>
</tbody>
</table>
6.1.2. Survey Goals

In order to gain a sense of the magnitude of work-related driver impairment in BC and to have an overall sense of whether employers currently have the resources to address the issue, I developed 4 research goals. The research goals of my survey were to answer the following questions:

- Do employers understand the legal and regulatory responsibilities relating to occupational driver impairment?
- Do employers recognize and understand the factors that impair driving?
- Is occupational driver impairment an issue in BC workplaces and industry?
- Do employers have the tools and resources to address occupational driver impairment?

I investigate these research objectives by examining if there are any differences among sectors and size of organizations in relation to the research questions. Firstly, with respect to organization size, human resources and management literature demonstrates that smaller firms face different organizational challenges than larger firms (Cardon and Stevens, 2004). Smaller firms may have greater barriers with employee recruitment and often lack formal workplace policies (Williamson et al, 2002). Cardon and Stevens (2004) contend that smaller firms are more likely than larger firms to lack the human and material resources due to financial constraints. As such, these firms may be less likely to rely on formalized training and formalized systems of rules and policies (Cardon and Stevens 2004). Cardon and Stevens (2004) further indicate that smaller firms have “potentially haphazard employee management systems” (p. 297) that include unstructured and informal job training. To this end, smaller firms may lack the resources to tackle health and safety concerns in the ways that larger employers can.

Secondly, examining survey responses as a function of sector draws out any potential differences between industries, particularly where the potential harm from impairment is especially severe, such as the transportation, construction and manufacturing industries. In these industries, the likelihood of use and exposure to motor vehicles, heavy equipment and greater average annual miles are greater and thus, pose a greater threat to employees and public safety (Boufous, 2006; Newnam et al., 2011). For instance, using data from the US 1984 National Longitudinal Survey of
Youth aged 19 to 27, Gleason et al.’s (1991)’s research provides insight into the patterns of drug and alcohol use in the workplace among youth and reveals the entertainment/recreation (13.9%), and construction industries (12.9%) have the highest rates of overall drug use and alcohol use. In the transportation industry, 13.1% of young workers reported using drugs on the job. In addition, Ames et al. (1985) conducted a study of heavy machinery assembly workers in the United States and found that on the job drinking was a common occurrence in this particular industry.

6.1.3. Survey Outcomes

*Do employers understand the legal and regulatory responsibilities relating to occupational driver impairment?*

Survey results illustrate that overall; employers understand their legal and regulatory responsibilities concerning driver impairment. For instance, a majority of employers 83.9% (N=400) agreed that as employer they should definitely be involved in matters when their workers are impaired when driving for work purposes. With respect to the responsibilities vested in other legal bodies, many respondents are aware of the distinct roles occupied by The Insurance Corporation of British Columbia (ICBC) and the justice system in relations to managing work-related impairment. 66.3% (N=316) of employers identified that ICBC is not responsible for the health and safety of their employees where 70.5% (N=337) of employers indicate that the justice system is not responsible for employees when they drive for work purposes.
Table 6-3.  Knowledge of legal and regulatory responsibilities

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>As an employer, I should not be involved in matters where my employee is impaired when driving for work.</td>
<td>54.72% (N=261)</td>
<td>29.14% (N=139)</td>
<td>6.50% (N=31)</td>
<td>5.24% (N=25)</td>
<td>4.40% (N=21)</td>
</tr>
<tr>
<td>The Insurance Corporation of British Columbia is responsible for the health and safety of my employees when they drive for work.</td>
<td>35.43% (N=169)</td>
<td>30.82% (N=147)</td>
<td>20.96% (N=100)</td>
<td>9.43% (N=45)</td>
<td>3.35% (N=16)</td>
</tr>
<tr>
<td>The justice system is responsible for the health and safety of my employees when they drive for work.</td>
<td>36.61% (N=175)</td>
<td>33.89% (N=162)</td>
<td>17.36% (N=83)</td>
<td>8.58% (N=41)</td>
<td>3.56% (N=17)</td>
</tr>
<tr>
<td>When my employees drive, they are responsible for their own health and safety.</td>
<td>9.68% (N=46)</td>
<td>14.74% (N=70)</td>
<td>16.84% (N=80)</td>
<td>37.26% (N=177)</td>
<td>21.47% (N=102)</td>
</tr>
<tr>
<td>Health and safety is the shared responsibility of the employer and employee.</td>
<td>3.34% (N=16)</td>
<td>2.09% (N=10)</td>
<td>6.26% (N=30)</td>
<td>38.41% (N=184)</td>
<td>49.90% (N=239)</td>
</tr>
<tr>
<td>If an employee drives hung over, it is fine as long as they are not involved in a motor vehicle crash.</td>
<td>50.73% (N=242)</td>
<td>36.48% (N=174)</td>
<td>9.85% (N=47)</td>
<td>1.89% (N=9)</td>
<td>1.05% (N=5)</td>
</tr>
<tr>
<td>Statement</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neither Agree nor Disagree</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>------------</td>
<td>----------------------------</td>
<td>----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>When a worker is suspected of impaired driving, I feel comfortable discussing this with them directly.</td>
<td>3.56% (N=17)</td>
<td>7.11% (N=34)</td>
<td>10.46% (N=50)</td>
<td>41.00% (N=196)</td>
<td>37.87% (N=181)</td>
</tr>
<tr>
<td>When a worker is suspected of impaired driving, the justice system can address this issue with them.</td>
<td>16.56% (N=79)</td>
<td>15.72% (N=75)</td>
<td>22.01% (N=105)</td>
<td>31.45% (N=150)</td>
<td>14.26% (N=68)</td>
</tr>
</tbody>
</table>

With respect to being aware of WorkSafeBC’s Act and Regulations however, though 48% (N=216) of employers respond they are aware of impairment-related regulations and legislation, 29.4% (N=132) of employers indicate they are unaware of The Board’s regulations and legislation relating to impairment, demonstrating a window of opportunity for WorkSafeBC to provide information and resources to employers.

From the total number of employers (N=130) who indicated they were unaware of the impairment-related Act and Regulations, 50% (N=65) were from the service sector, 16.9% (N=22) from the trade sector, 10.8% (N=14) from the construction sector, 6.2% (N=8) from the manufacturing sector, 2.3% (N=3) from the transportation and warehousing sector, 3.1% (N=4) from the public sector and 10.4% (N=49) respondents indicated their business was not in any of the designated sectors.

The distribution of employers who are aware, unaware and neutral within each sector are as follows:
In conclusion, employers generally understand the distinct roles ICBC and the justice system serves with regards to managing driver impairment. However, many employers are unaware of WorkSafeBC’s Act and Regulations relating to impairment.

**Do employers recognize and understand the factors that impair driving?**

The survey results show that employers largely recognize and understand the factors that impair driving. Three questions provided respondents with hypothetical situations to elicit perspectives on whether they recognized the signs of impairment from fatigue, alcohol and prescription medication (See Appendix B). Employers were asked to choose the best answer concerning a hypothetical employee that is potentially involved in an impaired driving incident at work. In all 3 questions, respondents overwhelmingly selected responses in the survey that reflected safe work driving practices. For example, one statement reads, “Your employee Jared is a truck driver. Jared reports he took NyQuil instead of Dayquil for his cold. Dayquil often causes drowsiness. What do you do?” As illustrated in the table below, 98% of respondents...
chose appropriate responses that reflect safety – either “send him home until he is fit to work” or “put Jared on office duties”.

Table 6-4. Example of a scenario question

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow him to continue driving</td>
<td>6</td>
<td>1%</td>
</tr>
<tr>
<td>Send him home until he is fit to work</td>
<td>262</td>
<td>56%</td>
</tr>
<tr>
<td>Put Jared on office duties</td>
<td>198</td>
<td>42%</td>
</tr>
<tr>
<td>Total</td>
<td>466</td>
<td>100%</td>
</tr>
</tbody>
</table>

Respondents were also asked to indicate the degree to which they agreed or disagreed with statements relating to alcohol, fatigue and substance use while driving. Overall, employers recognize that using stimulants to stay awake while driving, having a beer before driving, and driving hung over are hazardous behaviours. However, when asked to rate the statement “smoking a joint and driving is dangerous”, over one-third of respondents, or 35% of respondents indicated that they strongly disagreed that the behaviour is dangerous.

Further analysis of employers in specific sectors that disagreed with smoking a joint and driving is dangerous is provided. 41.9% (N=72) of employers in the service industry, 12.8% (N=22) in trade, 12.2% (N=21) in construction and 11.0% (N=19) in manufacturing, indicated that they disagreed with statement, and that smoking a joint and driving is not dangerous.
This is alarming because marijuana or cannabis is “the most widely used illicit drug in Canada” (Beirness and Porath-Waller, 2009) and has profound effects on the cognitive mechanisms required for safe driving. Marijuana has been demonstrated to distort sensory perception, coordination, delay reaction time, impair memory, distort the sense of time and compromise one’s ability to handle unexpected events (Beirness and Porath-Waller, 2009). These results could also be indicative of the shifting public view to legalize marijuana. A 2010 Angus Reid poll of 1,010 adult Canadians indicated that 53% supported legalizing marijuana (Angus Reid, 2010).
Is driver impairment an issue in BC workplaces and industry?

Understanding whether occupational driver impairment is an issue in workplaces across BC, in specific industries and in actual workplaces, is important to gain a sense of the magnitude of the issue and to direct prevention efforts. In order to assess whether driver impairment is an issue for employers, I asked questions about the number of impairment-related incidents and asked employers to evaluate the extent of the problem themselves.

Across all sectors, when asked “In the last 12 months, approximately how many driver impairment-related incidents have there been in your workplace”, employers responded that there were 82 incidents within the last 12 months⁷. Whether these incidents translated into injury or mortality is unknown because it was not addressed in this survey due to scope. However, the potential for these 82 incidents to cause public safety issues is of particular concern. One respondent answered there have been 100+ incidents, though, this response is likely an outlier because it falls outside the normal distribution of responses and has not been considered in the analysis.

Employers were also asked to evaluate the degree to which they thought driver impairment is or is not a problem in BC workplaces, in their industry and in their workplace, early on in the survey and again after a general impairment definition was provided.

The purpose of this was to (1) have respondents evaluate the existing situation based on their own perceptions of impairment, (2) gauge employers’ perspectives on factors that impair driving and to (3) discern whether their perspectives changed by providing employers with a specific impairment definition. As illustrated in Figures 6-2 and 6-3, there were no significant changes in responses, signifying that, (1) most employers generally recognize the factors that impair driving with or without an impairment definition, (2) the extent of the reported problem remained relatively constant

⁷ Number of incidents were aggregated through survey results where employers were asked to indicate the exact number of driver impairment-related incidents in the last 12 months
even after a definition was given and (2) employer recognize it is an industry and overall workplace problem, but not at their own workplace.

Amongst all employers in all sectors, after a definition was provided, 43% (N=198) of employers indicate it is a moderate problem in BC workplaces, 17.1% (N=79) indicate it is a serious problem in BC workplaces, 22.8% (N=105) indicate it is a moderate problem in their industry and 9.8% (N=45) suggest it is a serious problem in their industry. Within their own workplace, 6.5% (N=34) indicate it is a moderate problem and 7.3% (N=30) indicate it is a serious problem. The following figures depict employer responses before (Figure 6-2) and after (Figure 6-3) an impairment definition was provided.

![Perceived Magnitude of Driver Impairment, before impairment definition](image)

**Figure 6-2.** Perceived magnitude of driver impairment, before impairment definition
When employers were asked whether or not they knew workers in their industry and workplace who drive while impaired, 22% (N=104) of employers know of workers who drive while impaired in their industry. 7% (N=33) indicated they know workers who drive while impaired in their workplace. These results could be indicative of the fact that employers may be less inclined to report workers who drive impaired in their workplace, and therefore, underreport due to the social stigma attached to driver impairment (Shults et al., 2002).
Do you know of workers in who drive while impaired?

<table>
<thead>
<tr>
<th></th>
<th>In your industry</th>
<th>In your workplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>22%</td>
<td>82%</td>
</tr>
<tr>
<td>Maybe</td>
<td>7%</td>
<td>61%</td>
</tr>
<tr>
<td>No</td>
<td>17%</td>
<td>11%</td>
</tr>
</tbody>
</table>

**Figure 6-4. Knowledge of workers who drive impaired**

Additional examinations between sectors reveals that 31.7% (N=32) of respondents in the service sector, 26.7% (N=27) from the construction sector, 14.9% (N=15) from primary resources, 10.9% (N=11) from trade, 5% (N=5) transportation and 5% (N=5) indicated they know workers in their industry who drive while impaired. The underreporting of workers who drive while impaired “in your workplace” could be due to the social desirability bias as this study involves “socially sensitive issues” that encompasses impairment (Grimm, 2010).

In examining the number of incidents in the last 12 months across different sectors and organization size, I grouped the number of incidents in increments of 10’s for presentation purposes. Dividing the data based on organization size and the number of driver impairment-related incidents in the past 12 months reveals that 94.3% (N=481) reported no incidents, however, 5.1% (N=26) employers reported between 1-10 incidents and 0.4% (N=2) reported 11-20 incidents in the past year. Of those employers who reported 1-10 incidents, 50% (N=13) were small employers, 42.3% (N=11) were large employers and 7.7% (N=2) were medium employers. Although the prevalence of driver impairment-related incidence is low as depicted in this question, underreporting could be due to the social stigma attached to driver impairment (Shults et al., 2002).
Do employers have the tools and resources to address driver impairment?

Results indicate that employers do not have adequate tools to address driver impairment. In an effort to assess whether employers have the tools and resources to address driver impairment, I asked employers a series of questions in the survey. In terms of having specific programs and/or policies to address driver impairment, 49% (N=220) of employers indicated they did not have policies and programs in place, revealing a clear need for tools and resources.

Figure 6-5. Presence of specific driver impairment policies and/or programs in place
Furthermore, 39.3% (N=177) of employers agreed that their company would benefit from more resources from WorkSafeBC in handling driver impairment, 33.5% (N=151) indicated they were neutral and 27.3% (N=123) disagreed with this statement.

Employers were also asked to specify the types of driver impairment programs they had in place. Programs mentioned include safety meeting topics, specific work related policy and resources, and employee and family assistance programs.

![Company Driver Impairment Programs](image)

**Figure 6-6. Types of company impairment programs in place**

37% (N=164) of employers never discuss driver impairment issues during meetings, 26% (N=116) rarely discuss it, whereas only 13% (N=56) report that they ‘often’ or ‘always’ discuss it.
Figure 6-7. Frequency of driver impairment discussion at the workplace

Reasons that companies may not directly address driver impairment, include: “it isn’t an issue” (79%: N=173) and “we don’t have policy to address it” (22%: N=48). Of those with specific policies, 92% (N=176) indicate they actively enforce these policies. Of those who indicated they don’t directly address work-related driver impairment, 79% (N=173) indicate “it isn’t an issue”, 22% (N=48) indicate they “don’t have policy to address it”, 6% (N=12) indicate it is challenging to deal with.

Figure 6-8. Reasons for not addressing work-related driver impairment
6.1.4. Survey Summary

- Driver impairment is perceived as an issue for employers in all sectors and sizes surveyed
- Small employers from the service, construction and primary resources sectors reported a greater number of driver impairment related incidents than other sectors in the past year
- Many employers do not have policies to address the issue
- Most employers do not discuss driver impairment during meetings
- Many employers do not address driver impairment because it isn’t an issue at their workplace or they don’t have policy to deal with it
- Most employers reveal they recognize and understand the factors that impair driving
- Many employers indicate they would benefit from more resources from WorkSafeBC in handling driver impairment

6.2. Interview Findings

Interviews allowed employers the opportunity to elaborate and provide greater depth on the challenges of addressing driver impairment at work. Employers were also able to provide insight on the benefits and shortcomings of potential policy options. Results illustrate that from the total of 17 interviewed participants, 41% (N=7) were small employers, 24% (N=4) were medium employers and 35% (N=6) were large employers. 10 participants held management roles, including human resources personnel, vice-president, and occupational health and safety officer and 8 respondents identified as owners.

6 employers were from the services industry, 6 from construction industry, 5 from transportation industry and 1 from the manufacturing industry. Because respondents occupied various industries and roles, there was a wide range of perspectives to draw themes from.

The table below describes participants’ interview code number, organizational role, industry and organization size.
### Table 6-7. Interview participants, by role, industry and organization size

<table>
<thead>
<tr>
<th>Participant</th>
<th>Role</th>
<th>Industry</th>
<th>Organization Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Owner</td>
<td>Construction</td>
<td>Large</td>
</tr>
<tr>
<td>2</td>
<td>Owner</td>
<td>Construction</td>
<td>Medium</td>
</tr>
<tr>
<td>3</td>
<td>Owner</td>
<td>Construction</td>
<td>Medium</td>
</tr>
<tr>
<td>4</td>
<td>Owner</td>
<td>Construction</td>
<td>Small</td>
</tr>
<tr>
<td>5</td>
<td>Owner</td>
<td>Construction</td>
<td>Small</td>
</tr>
<tr>
<td>6</td>
<td>Management</td>
<td>Construction</td>
<td>Small</td>
</tr>
<tr>
<td>7</td>
<td>Management</td>
<td>Manufacturing</td>
<td>Large</td>
</tr>
<tr>
<td>8</td>
<td>Owner</td>
<td>Services</td>
<td>Large</td>
</tr>
<tr>
<td>9</td>
<td>Management</td>
<td>Services</td>
<td>Medium</td>
</tr>
<tr>
<td>10</td>
<td>Management</td>
<td>Services</td>
<td>Small</td>
</tr>
<tr>
<td>11</td>
<td>Owner</td>
<td>Services</td>
<td>Small</td>
</tr>
<tr>
<td>12</td>
<td>Management</td>
<td>Services</td>
<td>Small</td>
</tr>
<tr>
<td>13</td>
<td>Management</td>
<td>Services</td>
<td>Small</td>
</tr>
<tr>
<td>14</td>
<td>Management</td>
<td>Transportation</td>
<td>Large</td>
</tr>
<tr>
<td>15</td>
<td>Management</td>
<td>Transportation</td>
<td>Large</td>
</tr>
<tr>
<td>16</td>
<td>Management</td>
<td>Transportation</td>
<td>Large</td>
</tr>
<tr>
<td>17</td>
<td>Owner</td>
<td>Transportation</td>
<td>Medium</td>
</tr>
</tbody>
</table>

**Total 17**

Six key themes that emerged from the interviews with employers are described in the following section. The key themes and sub-themes are:

- Barriers and challenges of Addressing Driving Impairment with Workers
  - Legal and Administrative Complexities
  - Dichotomies between Management and Direct Supervisors
• Dichotomies between Small and Medium to Large Employers
• Covert Issue
• Deviant Symptomatic Behaviour
• Trust Sustains a Culture of Safety
• Enforcement and Prevention must Work in Tandem with Regulations
• A Societal Problem

6.2.1. Barriers and Challenges of Addressing Driver Impairment with Workers

Employers identified many challenges in relation to handling driver impairment at work and are described in detail below.

Legal and Administrative Complexities

Findings illustrate that among employers, dealing with driver impairment in the workplace is filled with legal and administrative complexities. Employers acknowledge that driver impairment is embedded within multiple layers of legal discourse, serving as an impediment for employers to manage. Virtually all interviewees described various legal and administrative concerns, as barriers to addressing driver impairment in the workplace. For instance, one employer states,

A lot of supervisors, especially now with the privacy act and human rights act, or whatever, they’re just scared to do anything…they don’t want to get accused of harassment, discrimination or whatever.  
(Medium-sized service employer)

Legal challenges involve privacy concerns, human rights issues and liability fears (Raskin, 1993). Administrative complexities mentioned include lack of human resource capacity and lack of formalized reporting systems. Despite acknowledging the importance of ensuring workers are not impaired while at work, most employers expressed concerns with maintaining the balance between ensuring safety in a manner as to not “infringe” on employees’ privacy rights. Some employers stated it would be helpful if employers could legally engage in alcohol and drug testing, recognizing that in Canada, there is no legislation that specifically addresses drug and alcohol testing
(Raskin, 1993). Therefore, identifying an impaired worker requires discretion by employers. One employer describes the fear of legal prosecution stating,

We’ve had many instances of impairment in the past and we’ve had workers and drivers be impaired but we couldn’t do much about it because of the legal and union issues…the lines between what we can and can’t do is blurred and we can’t condemn someone without proper evidence, it’s hard. (Large-sized manufacturing employer).

Participants also frequently cited the Canadian Human Rights Act as a challenge to dealing with driver impairment at work. Many employers indicated that when they are made aware of suspected impairment, they are often reluctant to inquire and reprimand in the event the individual has dependency issues. This is because the Canadian Human Rights Act prohibits discrimination of employment on the basis of an existing or previous dependency on alcohol or a drug (Canadian Human Rights Act, 1985). The narrative below expresses these concerns,

In terms of dealing with workers, the major challenge would be the Human Rights Act…at the end of the day, if you’re dealing with a worker that is impaired, um, you have to handle that very carefully because if you know they have a substance abuse problem, at that point you need to provide them assistance, it’s not just a matter of termination and I think that’s the biggest obstacle. (Large-sized transportation employer)

Similarly, some employers stated that union representation also deters them from confronting workers suspected of impairment until “hard evidence” is provided. Interestingly, many employers mentioned that typically the “direct” supervisor or “direct” manager is especially reluctant to directly deal with impairment issues, often deferring to upper management or human resources. Many employers also expressed they often face a dilemma, where if they do not address the issue, they could face legal ramifications if their worker is involved in a motor vehicle incident while impaired. While if they confront workers of suspected impairment, they fear they could be accused of discrimination. Furthermore, addressing driver impairment in the workplace requires a certain level of human resources available with the knowledge and skills to mitigate these complexities. Many smaller employers indicated that they are ill-equipped with the human resource personnel available to ensure this.
Dichotomies between Management and Direct Supervisors

All 17 participants interviewed held roles in management and/or were owners of their respective organizations. This is important because these individuals are typically in decision-making roles and shape workplace policies. From the employers interviewed, those from medium to large organizations revealed that very often, direct supervisors and direct managers in their companies are uncomfortable dealing with impairment issues in the workplace. “Direct” meaning a person who frequently interacts with employees on a day-to-day basis. They also expressed that these direct supervisors are uncomfortable and unsure of how to deal with driver impairment issues in the workplace and often defer potential issues and incidents to management, human resources personnel, owners, occupational health and safety officers, first aid attendants or corporate lawyers. For instance, one participant explains,

Supervisors and managers don’t know what to do when they have employees who are impaired or possibly impaired, it’s confusing for them and they don’t know what to do so they call me.

(Large-sized manufacturing employer)

One possible reason that a dichotomy between management and direct supervisors exists could be due to the different job demands experienced by management and direct supervisors. Job demand differences are more typical in medium to large organizations where roles are often structured in hierarchical ways. Individuals in management roles are often responsible for administrative functions, including, recruitment, budgetary duties, and shaping workplace policies. Whereas direct supervisors tend to be focused on daily job demands and often work alongside frontline workers. Because direct supervisors are less immersed in administrative duties, direct supervisors may not hold the requisite expertise on company policies and protocols when dealing with complex issues such as impairment. As one employer put it:

...supervisors and the people that work with [their] employees on a daily basis aren’t adequately trained in understanding and recognizing an impairment and don’t know how to deal with it appropriately.

(Large-sized construction employer)
Another employer echoes this point, reporting that, at his organization, health and safety programs not only focus on workers, but also focus on “supervisors to ensure they have the adequate knowledge to make good decisions when dealing with safety” (large-sized transportation employer). It is clear that bridging the gap in training and knowledge for direct supervisors in how to deal with driver impairment is a key concern for employers interviewed. In this respect, one employer contends that:

In general, supervisors and managers don’t have the experience in dealing with [work-related driver impairment], and also they are reluctant to deal with it because they are afraid to make a mistake on the side of caution. And what I mean by that is that they think that accusing somebody of being under the influence of alcohol, recreational drugs, prescription drugs, or some other level of impairment...um they don’t know how to handle it, so they would much rather not deal with it because they’re afraid to make a mistake...now as a manager and a supervisor, if you look the other way, you really haven’t done your job.

(Large-sized transportation employer)

This employer acknowledges that direct supervisors and managers often lack the experience and confidence handling suspected work-related driver impairment incidents. This is consistent with safety literature research. For instance, The Construction Industry Review Committee, (as cited in Choudhry et al., 2007) describes that “middle managers may turn a blind eye or...actively encourage the use of short cuts in order to meet deadlines” (p. 1005) as a result of work pressures.

**Dichotomies between Small and Medium to Large Employers**

Another theme to emerge from the interviews concerns a dichotomy between small employers and medium to large sized employers and their approaches when dealing with driver impairment. Although all employers interviewed reveal disapproval of driver impairment, there are distinct differences between the approaches taken. Employers from small organizations had policy that was informal and haphazard. “Haphazard” in this context means that the policy described was informal “common knowledge” which was not written down, and was usually only invoked when an incident requiring discipline emerged. Owners of small organizations described that they were also not only responsible for the overall administrative duties of the organization, but also for recruitment, staffing and as well as maintaining daily operations. As such,
smaller organizations face scarce resources, competing organizational demands, alongside resource constraints (Cardon and Stevens, 2004). These competing demands make it challenging to shift current resources to address driver impairment in the workplace unless it emerges as a pressing concern.

For example, when asked to describe how driver impairment-related incidents are handled at their organization and whether specific policy is present, an employer stated,

No...not really, it’s more general, like if we are noticing an issue with somebody, we’ll have a conversation with them, but we don’t just, like as part of our safety meetings or toolbox meetings, lunchbox meetings, that’s never really been a topic of discussion, so that’s what I kinda said in the survey....this is the first time I’ve done a survey like this, so I’ve never thought about this issue other than dealing with past situations where I had to deal with an employee like, I had to let him go cause he can’t make it to payday, and as soon as you pay him, he doesn’t show up so obviously he has some problems, so like other than that, in my core group there aren’t any issues, so I don’t really think about it.  

(Small-sized construction employer)

Furthermore, many small-sized employers acknowledged the lack of formal policy as a shortcoming that their organization should re-examine and consider developing. They also mentioned that policy concerning driver impairment is understood as “common knowledge”, rarely included in safety manuals only addressed when the situation requires it. One employer illustrates this,

I think a barrier would be coming to terms that we don’t have a policy written down to guide us on what to do next, on how to handle any procedures or protocols of um, whether or not there are any progressive disciplinary actions required, what that progressive discipline might be, there are no measures to put in place and then in terms of protection for the employee, and for protection for the employer because, if anything, an employee could say well my employer didn't tell me I couldn't or shouldn't so that's a problem.  

(Small-sized service employer)

In contrast, when asked to describe their organizational procedures, medium to large employers all indicated they had to some extent, various formalized systems of policy, as well as training and progressive disciplinary measures in place. Medium to
large employers indicated that formalized policies are often housed in safety manuals and handbooks, and revealed that driver impairment is often discussed during scheduled safety meetings and seminars. Moreover, most of these employers had specific work-related driver impairment policy and resources. All medium to large sized employers interviewed also described their progressive disciplinary programs and policies relating to anyone suspected of driver impairment or impairment in the workplace. These disciplinary measures include, suspension pending investigation, referral to counselling or an employee and family resources program, the use of short term disability leave and/or return to work contingent upon an agreed to, random drug testing program. One employer demonstrates these measures where he describes,

If someone misses a work shift cause they smoked up or had too much wine or whatever the case, then they’re suspended pending investigation...we also provide avenues of assistance for the worker, assessment to substance abuse professionals, and if it's determined that the individual may have a dependency, and the individual isn’t terminated, then there are accommodations that we put in place, and a two year monitoring process, and these systems have not failed us yet. (Large-sized transportation employer)

As such, these types of progressive disciplinary systems are characteristic of the formalized systems and protocols that medium to large employers have in place to address driver impairment and general workplace impairment.

### 6.2.2. Covert Issue

Employers often face a plethora of competing demands, priorities and safety issues. As a result, driver impairment is not often prioritized or made salient until an incident occurs. Interviewees indicate that all employers acknowledge driver impairment in the workplace as an incredibly serious, yet covert issue. Employers also state that though they understood driver impairment at work is a common occurrence, the incidence of fatality is likely low. Despite this view, all employers acknowledge that the downstream impact of work-related driver impairment is devastating to workers, societies and families. Employers also express a clear consensus that driver impairment at work requires widespread acknowledgement by industry, government and employers as real issue with the potential for devastating consequences. Employers reveal that
there this issue requires “more awareness” (large-sized manufacturing employer), requiring further acknowledgement and preventative action by government and society. One employer also states,

...we’d be very naïve to say we don’t have an impairment issue on our roads and considering the number of kilometers driven by work trucks, I would say there is a real issue out there...we need to address the issue and get our heads out of the sand, we have to acknowledge it is an issue.  (Large-sized transportation employer)

Acknowledging driver impairment as a workplace and road safety issue, predicates action. When asked whether driver impairment is an issue in their industry and workplaces, all employers acknowledge that it is an issue, and at one point in time or another, incidents have occurred. Furthermore, most employers view current understanding of the issue as an issue that is underreported and not likely to come to light until tragedy occurs.

I think we are probably touching the tip of the iceberg with this problem, I think it’s huge, I think it’s much bigger than we think and that’s a concern.  (Medium-sized construction employer)

6.2.3. **Deviant Symptomatic Behaviour**

There was a clear consensus amongst employers that driver impairment is not just a form of deviant behaviour, but that it is often a symptom of underlying personal issues. Intriguingly, though employers interviewed represented various industries and organization sizes, all mentioned that addressing driver impairment is not limited to addressing the behaviour, but that employers and employees must also address the “cause of the issue”, as they acknowledge recidivism will likely occur:

Usually impairment masks underlying problems, I don’t think workers mean to do drugs and come to work high or whatever, but usually it’s because they have issues at home or other problems...we aren’t trying to punish employees for wrong doings, a lot of the time it isn’t malicious but it’s cause of home issues, like fights at home or addiction.  (Large-sized manufacturing employer)
Interviewees recognize that impairment stems from multiple causes, often involving personal issues, which includes addiction, recreational use, fatigue and lack of sleep, and substance use as a coping mechanism for personal home issues:

You see, the issue of impairment you know, there is so much focus right now on illicit drugs and alcohol, and everyone thinks that's the only impairment there is, absolutely not. Because, for example, you and I are married, we fought and now we left it and you are mad at me, I am mad at you and then I go to work, I'm not focused on my job, because I am thinking of the fight that you and I had and what’s going to happen when I get home and I didn’t get any sleep at night...so that’s a level of impairment, you know um I stay up all night and party with my buds, I am certainly not in control of my faculties, we are also dealing with prescription drugs, a lot of people misuse over-the-counter medications, and these things are symptoms.

(Large-sized transportation employer)

These points demonstrates that addressing driver impairment in the workplace calls for proactive and collaborative approaches by employers and workers to address the cause of such impairments, with a focus on human factors. Employers interviewed all acknowledged when an impairment incident occurs, their primary goal is not to punish workers but to understand the underlying causes and work together with workers to remedy the cause so that it does not become a recurrence. Addressing the behavioural aspect of impairment in isolation does not seek to improve workplace safety culture or affect long-term changes.

6.2.4. Trust Sustains a Culture of Safety

Every employer interviewed emphasized that the key to preventing and addressing safety concerns is through maintaining a culture of safety by fostering trust and well-being with their workers. This message emerged from every employer, in all sectors and companies. For instance, an employer emphasized that; “...employees are usually more compliant when you treat them with respect” (large-sized manufacturing employer). Another describes the ways in which mutual trust and concern for employees aid in advancing safety outcomes:

One of the things that we try to do is that we try to help our managers and supervisors, we have a lot of young managers with not as much
experience as they should have but what but one of the things we tell them is, try to get to know your people, you see them everyday...say, “Hey Frank how's it going?”. “I'm feeling a little bit tired”. Next day, “Hey Frank how's it going?”. “Ah crap I didn't sleep very well”. You know how your dispatch works, you know what schedule you got them on so next time ask, “Hey Frank why are you not sleeping well?”. “Ah well we just had a baby or whatever”. Then you know his issues, or if he says “I wake up 29 times a night”. Then you know his sleep is fragmented. One of the things we try and do is that if you're not sure, call a regional manager, get a second opinion, then we try to help, you know what you're not gonna catch everybody but if you do know your people, but I’m not saying, get into their business and go for dinner every night, but at least as you see them you know when something is not right, and the other thing is you know that maybe they're a little later than they used to come in. I say get to know your workforce, that's sorta what a supervisors’ and managers’ role is. Yes you have a company to run, yes you have activities to make sure that goals are met. (Large-sized transportation employer)

Familiarity was important such as being a family figure, looking out for employee safety and building trust was deemed to be essential to ensuring the health and safety of the workforce:

I feel like more of a family figure than a boss, so I am straight up with them, you gotta have the balls to tell them...I have no qualms, if they’re doing something wrong I’m not gonna shrink away and hide about it...it’s about trust cause they might have more issues. (Small-sized construction employer)

Another employer also shares this view, stating that building trust with employees through collaboration and employer support is an effective approach to dealing with health and safety issues at work. He describes his successes dealing with health and safety issues in the transportation industry as being contingent on mutual trust being developed between workers, supervisors and management.

You’re responsible for other men and women’s lives while working in hazardous atmospheres and conditions, and we have to know you can be counted on, are you prepared to inhibit or cut back and stop, and if you’re prepared do you need help with it? And I just let the person think or swim on their own, I take a collaborative approach cause it works, I build that trust, cause if you lose trust, all you got left is RUST, it just works. (Large-sized transportation employer)
Employers contend that by establishing good rapport with their employees, and learning about their normal level of functioning and demeanour provides them with the ability to prevent dangerous workplace behaviours. Employers also expressed empathy for their workers when they are confronted with workplace impairment issues:

Well for me...when I was a worker, I was you know a worker for a long time so I have a real good understanding of what people are going through, so you know I try my hardest to step back to when I was in their position and understand that uh, what could be the cause of their alcohol or drug or stress or whatever problem...and I try to alleviate their issues by taking them on as my own and try to help them out on my end...saying look, we got your back on this end your job is to focus.  
(Small-sized construction employer)

6.2.5. Enforcement and Prevention must Work in Tandem with Regulations

When discussing potential solutions and policy options for addressing work-related driver impairment, employers overwhelmingly responded that regulations alone cannot, and will not work, without adequate enforcement, education and prevention. Many recognized that regulations are important in legitimizing driver impairment as a public concern; however, all employers acknowledged they cannot exist without prevention and enforcement efforts. One employer states:

More education and awareness needs to happen first, so people know like, we know we are responsible to have a policy on this, so we know we have to discuss it with our employees.  
(Small-sized construction employer)

As such, bringing awareness of the issue to employers is important because it empowers employers allowing them to feel comfortable having that discussion with their employees.  

Some employers also likened driver impairment in the workplace to the recent WorkSafeBC workplace anti-bullying and harassment campaign, as exemplified by a medium-sized employer:

We definitely need education for employers and some sort of education or awareness for workers, we need a bullying and harassment type
campaign, somehow that needs to happen with this problem.  
(Medium-sized service employer)

Employers also expressed that education for young workers, such as students in 
apprenticeship programs and high schools, are just as important as regulations. As one 
put it:

You gotta educate the young people, the young workers, send the 
message that they can jeopardize their whole livelihood if they’re 
impaired at work.  (Small-sized construction employer)

Many employers echo this message emphasizing that in their experiences, many 
young workers and apprentices were ill-equipped when it came to safe work knowledge, 
particularly when it came to impairment. One employer states that there is “not enough 
emphasis on safety training or any sort of impairment training of what could happen to 
[workers]” (large-sized transportation employer) if they come to work hung over or 
impaired.

Others emphasized the need for further support and resources by WorkSafeBC 
to enable employers to be comfortable and have the confidence to speak to their 
workers. One employer states that “some tools and information from WorkSafeBC 
would help cause then [he] can print it out” (small-sized construction employer) and have 
meaningful conversations with his employees.

Employers further described providing resources to employers on how to 
recognize and handle potential driver impairment incidents would represent a significant 
step in grappling with this issue. For example, one potential tool could involve 
resources, which help employers recognize the signs of, and triggers of fatigue. Another 
employer also states that “lack of training in understanding how to deal with impairment 
and how to recognize impairment would be the biggest downfall within our organization” 
(large-sized transportation employer).

In terms of regulations, interviewees acknowledge that there is a role for 
regulations, “but they have to be able to be enforced” (large-sized transportation 
employer). Regulations are cited as one tool, but not the main driver of change.
Changing the safety culture and societal norms relating to driver impairment is imperative for an enduring solution. The same employer mused, “Does regulation provide a reason for change? It’s one tool we can use that we can say, hey the regulators are agreeing with, that we need to stop crashes on the highway”.

Another common theme that emerged in terms of ways to address driver impairment at work concerns greater WorkSafeBC presence at actual workplaces. Most employers described that they would see it beneficial if WorkSafeBC board officers could provide a consultative and educational role to their workers and supervisors, building rapport and communication between WorkSafeBC and employers. One employer states,

…it would be great if WorkSafeBC could stop by and do a little talk, talk to our workers about this. (Small-sized service employer)

Collaborations between agencies with vested interest in this issue were also viewed as essential in addressing driver impairment at work:

...wouldn’t it be great if there could be some sort of coordination with WCB and ICBC, cause I mean, they’re really good at promoting these sorts of things and they could work together, I mean this problem is scary. (Small-sized construction employer).

Working collaboratively with other vested agencies by providing specific resources and tools to empower and educate employers and young workers are approaches employers discussed as complementing regulations:

I don’t know what the tools look like, but we need some. (Medium sized service sector company)

### 6.2.6. A Societal Problem

The most dominant theme that emerged during interviews with every interviewed employer is the clear consensus that occupational driver impairment is not just a workplace or road safety problem, but is a societal problem. Roads are public places shared amongst members of the public, workers and employers alike. This topic, by
virtue of its implications for public safety elicited from employers, strong moral and ethical responses:

...driver impairment at work is definitely a problem, it doesn’t happen often, but when it does, it’s devastating and it changes lives...I’ve had a personal experience myself, my close friend died from a drunk driver so I think you have a moral obligation as an employer above everything to your worker and their families .

   (Large-sized manufacturing employer)

Driver impairment is an issue evoking emotional responses from many employers who drew from personal experiences about the devastation it causes. For instance, many employers describe how driver impairment negatively impacts families, workplaces and communities. One employer described how when a worker is injured or fatally injured in a motor vehicle crash, often times, they leave behind families and co-workers who are all affected.

Furthermore, despite the legal concerns cited as barriers, employers also agree that driver impairment is an issue that concerns all stakeholders involved and should be addressed in a collaborative manner.

...this is a joint issue that both management and union cares about...unions want their members to be paying dues and be healthy, employers care and workers care...overall its an liability to everybody and dangerous.  (Large-sized manufacturing employer)

Despite many challenges, employers recognize that the safety of their workers and the public supersedes any legal and administrative barriers.

...your right to privacy is superseded by my right to provide a safe workplace only by a miniscule amount and I am going to exercise that right to provide a safe workplace. I didn't create the problem but I am not going to enable it... it doesn't matter if you're in a unionized environment or not, when it comes to safety and providing a safe environment, whose gonna argue with you? You know what we are doing these things cause we want people to be productive, we want people to be safe... You know I went to meetings with WorkSafeBC and I said, “I don't care about your regulations I could give a crap because you know what I deal with people”, the more good things I do for my people, I am going to exceed the minimum requirements of the regulation.  (Large-sized transportation employer).
Similarly, other employers share the perspective that public and worker safety trumps potential legal barriers, such as privacy and human rights. This employer states,

I’m not gonna put up [with impairment], if it’s an ongoing thing that person’s is not gonna be here. They’re not gonna be one of our employees if that’s an issue…I’m not sure if that whether completely deals with the human rights or whatever else but too bad, you know. Cause peoples’ safety is more important than abuse so...that is a major point of the whole issue. It has to do with safety of those people and everyone around. All you have to do is be with someone who is impaired and you can see their reaction is slow and they’re not thinking properly and all that it becomes a safety issue right now in my mind. (Small-sized construction employer).

Therefore, though barriers are recognized, when a driver impairment incident potentially occurs, moral and safety obligations to workers and the general public supersede those concerns. As one large transportation employer explains when concluding his interview that, “we try to do the right thing, we care about our people” (Large-sized transportation employer).

Interviews with employers provided valuable insight on the potential reasons why driver impairment is often overlooked and possibly underreported. Interview results assist to inform policy options, allowing for the evaluation of potential interventions that can effectively address this important issue in workplaces and on public roads.
Chapter 7.

Policy Options

Policy options to address driver impairment in workplaces are described below. These policy options emerged from a synthesis of the academic literature, best practices from other jurisdictions, and from the survey and interview results. Bronfenbrenner’s soci-environmental model allows for the framing of these options. Options occupying the microsystem include, developing of an employer toolkit and increasing WorkSafeBC presence. These options facilitate the relationships between employers and workers. Options at occupy the macrosystem include implementing a public education and awareness campaign and regulatory amendments because they represent efforts to alter social and cultural norms, societal attitudes and law and policy.

7.1. Employer Toolkit

The overwhelming consensus among interviewees indicates the value and necessity of employer tools and resources in addressing driver impairment at work. A toolkit and resources targeting this issue would ideally include, (1) templates for policy development, (2) an online website, (3) reporting procedures, (4) training guides and (5) information sheets. Developing an employer toolkit is an option administered at the organizational level and directly impacts employers and workers. An employer toolkit aims to help employers and workers understand their legal duties to prevent and address work-related driver impairment. Research reveals workplace safety systems, such as safety policies, are imperative in supporting a workplace safety climate (Flin et al., 2000). International occupational health and safety bodies such as SafeWork Victoria and the Transport Accident Commission from Australia, provides employers with resources and tools to tackle this issue by producing a report that summarizes key activities and developments in Australia on drug and alcohol use in the workplace.
SafeWork Victoria has also produced a best practises handbook for employers called “Guide to Safe Work Related Driving”, which outlines occupational health and safety responsibilities for work-related driving safety for employers and drivers, providing information on managing risk factors on the road, which include, fatigue, mobile phone use, adverse conditions, drugs and alcohol (WorkSafe Victoria, 2008). This guide provides non-binding guidelines on how to develop work-related driving safety policies and encourages employers where driving is a requirement on the job, to aim to develop and implement policies and practices based on these guidelines. A toolkit for work-related driver impairment can be modelled on the WorkSafeBC Bullying and Harassment Prevention Toolkit (WorkSafeBC, 2015). A toolkit would be available on WorkSafeBC’s online website and include templates on developing a policy statement, reporting procedures, investigation procedures and investigation guides (WorkSafeBC, 2015). A work-related driver impairment toolkit can include information resources for employers to use in training workers and supervisors. A toolkit can also contain toolbox meeting guides, handbooks, fact sheets on how to recognize signs and symptoms of impairment, and guides to assist small business in meeting their legal duties. This strategy will empower employers and provide for tangible tools and resources to prevent and handle work-related driver impairment issues.

7.2. Public Education and Awareness Campaign

Implementing a general education and awareness campaign aims to alter societal norms by emphasizing the social harms and unacceptability of driving impaired at work. Impaired driving increases the risk of incident, injury and death. Workers who drive impaired threaten public safety, public property, and negatively impact families and communities through the likelihood of arrest, detention and job dismissal. Interviews in this study also reveal driving impairment in the workplace is a covert issue that is often lost amid a plethora of competing demands and priorities. A majority of employers interviewed in this study recognize that impairment is not confined to the workplace, but is a societal problem, intersecting place and space and should be addressed as such. Interview results also reveal that employers acknowledge that the impact to families and society is devastating requiring a collaborative and public effort to alter societal norms
about driving impaired at work. As such, campaigns that underscore social unacceptability and impact on family and society may resonate with individuals. Alamar et al.’s (2006) research on effective methods of reducing cigarette consumption demonstrates a strong relationship between social unacceptability messages and reductions in cigarette consumption. However, research on mass media campaigns indicates that campaigns should occupy a supporting role to other campaign activities, such as enforcement (Wolley, 2001). This strategy would be implemented to the public through mass media and social media platforms, (Facebook, Twitter, Instagram, SnapChat), thereby having the potential to reach large audiences. The Industry and Labour Services department (the consulting arm of WorkSafeBC), would take the lead and partner with external agencies to increase visibility and message retention. This option would build on existing strategic partnerships with agencies with vested interests, including ICBC, RCMP, VPD, JIBC and the Ministry of Justice.

7.3. Increase WorkSafeBC Board Officer Presence

Many employers, in the interviews, indicated that increased WorkSafeBC board officer presence would prove beneficial to preventing and tackling work-related driver impairment. This strategy would have a two-fold advantage by: (1) creating ongoing presence to engage and reinforce the harms attributed to the issue through consultation and enforcement and (2) establishes a deterrent effect. This is a proactive approach to tackle health and safety issues before they potentially occur. Prevention officers have the knowledge, skillset and authority to provide inspections, education and issuing of occupational health and safety orders under Part 3 of the Worker’s Compensation Act (WorkSafeBC, 2015). WorkSafeBC prevention officers’ roles include inspection, enforcement, consultation and education (WorkSafeBC, 2015). This option is grounded in the bounded rationality model, which argues that enforcement and penalties makes socially undesirable behaviours salient helping individuals interpret legal duties in concrete situations (Scholz, 1985). Under this option, WorkSafeBC could assign prevention officers to visit safety-sensitive industries where the risks of violations and impact on worker and public safety are particularly high, such as the service, construction, primary resources and transportation sectors. Safety sensitive industries
are industries where impaired performance could result in a significant incident affecting the health and safety of employees, property, the public and the environment (Martin, 2010). In addition, in 2014, special administrator Macatee also recommended increasing WorkSafeBC board office presence in response to the Babine and Lakeland mill explosions that killed two workers, and injured 20 others in 2012. As a result of this tragedy, The Honourable Shirley Bond requested a review of WorkSafeBC’s organizational structure and investigations process (Macatee, 2014). As such, Macatee recommended WorkSafeBC increase its visibility and presence with employers, by creating an ongoing and effective level of presence in the workplace to encourage and ensure compliance with occupational health and safety requirements (Macatee, 2014).

7.4. Regulatory Amendments

Currently, Part 4, Sections 4.19 and 4.20 of WorkSafeBC’s Occupational Health and Safety Regulations state:

4.19 Physical or mental impairment

(1) A worker with a physical or mental impairment which may affect the worker's ability to safely perform assigned work must inform his or her supervisor or employer of the impairment, and must not knowingly do work where the impairment may create an undue risk to the worker or anyone else.

(2) A worker must not be assigned to activities where a reported or observed impairment may create an undue risk to the worker or anyone else.

4.20 Impairment by alcohol, drug or other substance

(1) A person must not enter or remain at any workplace while the person's ability to work is affected by alcohol, a drug or other substance so as to endanger the person or anyone else.

(2) The employer must not knowingly permit a person to remain at any workplace while the person's ability to work is affected by alcohol, a drug or other substance so as to endanger the person or anyone else.

(3) A person must not remain at a workplace if the person's behaviour is affected by alcohol, a drug or other substance so as to create an undue
risk to workers, except where such a workplace has as one of its purposes the treatment or confinement of such persons.

Note: In the application of sections 4.19 and 4.20, workers and employers need to consider the effects of prescription and non-prescription drugs, and fatigue, as potential sources of impairment. There is a need for disclosure of potential impairment from any source, and for adequate supervision of work to ensure reported or observed impairment is effectively managed.

However, this study demonstrates these current definitions do not adequately assist employers in administering these regulations. Therefore, a need for specific guidelines exists to allow for more effective enforcement. This option will provide specific work-related driver impairment guidelines to deliver legitimacy to the issue. The Occupational Health and Safety Regulations are constantly evolving and contingent to growing workplace safety concerns. For example, as a result of increased public concern and attention to workplace bullying and harassment, WorkSafeBC implemented 3 new Occupational Health and Safety bullying and harassment policies in November 2013 (WorkSafeBC, 2013). These policies were designed to “clarify the obligations of employers, workers and supervisors” (WorkSafeBC, 2013). Additionally, interview findings suggest that medium to large employers are likely to have the resources available to interpret and respond to regulatory amendments. Moreover, recognizing the safety-sensitive nature of occupational driving has prompted jurisdictions such as the US and the UK to introduce industry-specific regulations and employer assessment guidelines outlining safe work driving practise and impaired driving at work (U.S. DOT, 2011; HSENI, 2013). For example, occupational health and safety agency in the United States, OSHA, has an industry-specific regulation with respect to commercial motor vehicle drivers that specifically acknowledges occupational driver impairment and the safe operations of a “motor vehicle” (U.S. DOT, 2011). Recognizing that commercial transportation encompasses elements of both public and worker safety, the U.S. Federal Motor Carrier Safety Association’s Code of Federal Regulations addresses industry-specific occupational driver impairment in the following sections:

8 Policy D3-116-1, Worker duties, Policy D3-117-2, Supervisor duties, and Policy D3-115-2, Employer duties
§ 392.3

Ill or fatigued operator.

No driver shall operate a commercial motor vehicle, and a motor carrier shall not require or permit a driver to operate a commercial motor vehicle, while the driver's ability or alertness is so impaired, or so likely to become impaired, through fatigue, illness, or any other cause, as to make it unsafe for him/her to begin or continue to operate the commercial motor vehicle. However, in a case of grave emergency where the hazard to occupants of the commercial motor vehicle or other users of the highway would be increased by compliance with this section, the driver may continue to operate the commercial motor vehicle to the nearest place at which that hazard is removed.

§ 392.4

Drugs and other substances.

(a) No driver shall be on duty and possess, be under the influence of, or use, any of the following drugs or other substances:

(1) Any 21 CFR 1308.11 Schedule I substance;

(2) An amphetamine or any formulation thereof (including, but not limited, to “pep pills,” and “bennies”);

(3) A narcotic drug or any derivative thereof; or

(4) Any other substance, to a degree which renders the driver incapable of safely operating a motor vehicle.

(b) No motor carrier shall require or permit a driver to violate paragraph (a) of this section.

(c) Paragraphs (a) (2), (3), and (4) do not apply to the possession or use of a substance administered to a driver by or under the instructions of a licensed medical practitioner, as defined in § 382.107 of this subchapter, who has advised the driver that the substance will not affect the driver's ability to safely operate a motor vehicle.

(d) As used in this section, “possession” does not include possession of a substance which is manifested and transported as part of a shipment.

(Federal Motor Carrier Safety Administration, U.S. Department of Transport, 2011)
Similarly, The Transport and Works Act, 1992 in United Kingdom, requires certain rail and tram workers be fit for duty and that their employers have due diligence in place to ensure workers do not use drugs or alcohol (HSENI, 2013), demonstrating occupational driver impairment issues are embodied within OHS regulations in the UK.
Chapter 8.

Measurement and Evaluation Criteria

8.1. Effectiveness

An effective policy will ultimately result in fewer impaired drivers endangering other road users, and contributing to less motor vehicle incidents, injuries and damage. Effectiveness in this context refers to a reduction in the number of workers who drive while impaired in BC. This is beneficial for government and the general public. Effectiveness will be double weighted because it is the most important criterion, given that workers who drive impaired increase the risk of incident, injury and death. Based on research indicating that occupational drivers usually drive greater annual kilometers than non-occupational drivers, typically drive larger vehicles, are under greater time pressures and have shown higher levels of risk-taking behaviours (Newnam et al., 2011), reducing the number of work-related impaired drivers will enhance public safety. This criterion applies to any worker who drives during the course of his or her employment. Impaired driving significantly increases the risk of incident, injury and death (The Government of British Columbia, 2015). Due to data collection issues, the current prevalence of work-related driver impairment in BC is uncertain. The link between alcohol, drug use, fatigue and crash risk is well established in literature (Drummer et al., 2003; Swann et al., 2002; Lerman et al., 2012). Measurement numbers are informed by the current study survey results, which indicate that 22% of employers know of workers who drive while impaired⁹.

⁹ 31.7% (N=32) of respondents in the service sector, 26.7% (N=27) from the construction sector, 14.9% (N=15) from primary resources, 10.9% (N=11) from trade, 5% (N=5) transportation and 5% (N=5) from this study, indicated they know workers in their industry who drive while impaired. However, the transportation sector represented 3% of total respondents and may not be representative of the transportation and warehousing sectors in BC.
Effectiveness:

Reducing the percentage of workers who drive while impaired by 22% is measured using surveys and questionnaires with this study as baseline measure.

- A - highly effective 20%+
- B – moderately effective 5%-20%
- C – low effectiveness > 5%

8.2. Healthy Workplace

I don't care about your regulations I couldn't give a crap because you know what I deal with people, the more good things I do for my people, I am going to exceed the minimum requirements of the regulation. (Large sized transportation employer)

Employers recognize that a healthy workplace is a pillar to ensuring driver impairment is prevented and when it occurs, is handled proficiently. Employers in this study acknowledge that a healthy workplace not only serves as a foundation for addressing safety issues, but also human resources issues as well. A healthy workplace, as identified through the survey and interviews with employers, consist of 2 main components, or indicators, which include:

*Cultivates a culture of trust amongst workers and employers:* Employers overwhelmingly identified, in the interviews, that trust amongst workers and employers contributes to a healthy and safe workplace. Regardless of access to resources, organization size, sector or level of experience handling impairment, employers concur that policies are only effective if a foundation of trust between management, supervisors and workers are present. Choudhry et al.'s (2007) review of literature on safety culture finds that “mutual trust and credibility between management and employees” (p. 1005) is essential to maintaining a healthy workplace and safety culture. Safety is therefore, a consequence of trust amongst employers and workers. This criterion is measured by qualitative interviews with employers where I ask if committees exist and if safety decisions are made on a collaborative basis, as well as drawing from academic literature.

Measures:

- High trust – employers have a familiarity with workforce
• No trust – employers have no familiarity with workforce

*Fosters a safety culture:* Academic literature and this study confirms that a workplace safety culture is fundamental to addressing health and safety concerns (Kapp, 2012; Choudhry, 2007). This is especially true with regards to handling driver impairment. Employers in this study, reveal that dealing with driver impairment is a long-term commitment and achieved by first, cultivating a workplace safety culture. Commitment by employers and workers are key to maintaining a safety culture in the workplace. This criterion is measured through qualitative interviews with employers by asking employers if they have (1) safety reporting systems or (2) mandatory training for supervisors and workers.

Measures:

• Yes – these features are present
• No – these features are not present

### 8.3. Anticipated Stakeholder Collaboration

Anticipated stakeholder collaboration is the extent to which policy requires or involves stakeholder collaboration.

A key theme emerging from this study involves the recognition that collaboration between workers, employers and WorkSafeBC is essential to maintaining a healthy workplace. Stakeholders identified include WorkSafeBC, workers and employers in BC, who have a vested interest in work-related road safety and workplace safety. Scholz’s (1991) analysis of Occupational Safety and Health Administration enforcement data from the US provides evidence that cooperation between health and safety regulators and employers, increases the effectiveness of enforcement. Hinz (as cited in Choudhry et al., 2007) also “describes that a safety culture begins at the top…[and] safety must be an integral component of every element of the project…not something that can be isolated” (p. 1005).

This criterion is measured by qualitative interviews with employers and the academic literature, workforce surveys, questionnaires, active participation in industry groups and employer associations, all of which interact and collaborate with WorkSafeBC to enhance workplace safety. For example, groups such as SafetyDriven,
BC Construction Safety Alliance and BC Forest Safety Council, work closely with members of their respective associations and WorkSafeBC to disseminate best practices, training, assistance with development effective health and safety programs and certification of individuals and companies through the Certification of Recognition (COR) Program (SafetyDriven, 2015).

Measures:

• Yes – the option is likely to require or involves stakeholder collaboration
• No – the option is unlikely to require or involves stakeholder collaboration

8.4. Implementation Complexity

In many interviews, employers described what they viewed as technical and resource challenges as barriers to tackling this issue. Moreover, for a policy to be effective, it must be feasible to implement for all stakeholders involved. Implementation complexity in this study refers to the qualitative measure of how difficult each option may be to implement. Considerations include:

• Technical or operational challenges (database management, monitoring and evaluation)
• Regulatory modifications
• Human resource training (employment specifications)

Measures:

• Least difficult: option requires one or more of: no new regulatory modifications required; no human resources training; no administrative or operational challenges
• Moderately difficult: option requires one or more of: regulatory modifications required; moderate human resources trainings, some administrative or operational challenges
• Highly difficult: option requires one or more of the following: major regulatory changes; substantial human resources training; and substantial operational challenges

These measures will be determined through interviews with employers, inferred through academic literature and by similar policy implementation on workplace health
and safety, such as workplace bullying and harassment policy changes. Information regarding WorkSafeBC is available online and provides a resource on inferring the degree of difficulty of implementation.

8.5. Summary of Criteria and Measures:

Table 8-1. Summary of Criteria and Measures

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Description</th>
<th>Measure</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness</td>
<td>Reducing the % of workers who drive while impaired</td>
<td>(3): Highly effective, estimated to reduce the % of workers who drive impaired by &gt;20%</td>
<td>Academic literature and studies, survey results, qualitative interviews with employers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2): Moderately estimated to reduce the % of workers who drive impaired by 10%-20%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1): Ineffective estimated to reduce the % of workers who drive impaired by &gt; 10%</td>
<td></td>
</tr>
<tr>
<td>Healthy Workplace</td>
<td>Does the option cultivate a culture of trust among employers and workers?</td>
<td>(1) High trust – employers have a familiarity with workforce</td>
<td>Survey results, Academic literature, Grey literature, Qualitative interviews with employers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0) No trust – employers have no familiarity with workforce</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the option cultivate a safety culture?</td>
<td>Are there safety reporting systems or mandatory training for workers and supervisors?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1) Yes these features are present</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0) No these features</td>
<td></td>
</tr>
<tr>
<td>Criterion</td>
<td>Description</td>
<td>Measure</td>
<td>Methodology</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
</tbody>
</table>
| Anticipated Stakeholder Collaboration | Does the option involve stakeholder collaboration | (1) Yes – policy likely to involve stakeholder collaboration  
(0) No – policy likely to not involve stakeholder collaboration | Qualitative interviews with employers  
Academic literature and studies |
| Implementation Complexity | Is the option difficult to implement?            | (3) Least difficult  
(2) Moderately difficult  
(1) Highly difficult | Qualitative interviews with employers  
Academic literature and studies |
Chapter 9.

Policy Analysis

The policy options are evaluated using the aforementioned criteria and measures. The options are scored on a numeric scale to allow for ranking.

9.1. Employer Toolkit

I don’t know what the tools look like, but we need some.

(Medium-sized service employer)

9.1.1. Effectiveness

Among employers surveyed in this study, 22% indicated they do not have policy to address work-related driver impairment. Safety literature shows the importance of formalized safety policies (Flin et al. 2000) in fostering a safety climate. Employer toolkits would contain resources to support the development of formalized safety policies. Additionally, among employers surveyed in this study, 39.3% indicated they would benefit with more resources from WorkSafeBC in handling work-related driver impairment. Many employers interviewed expressed that employer toolkits would be beneficial in aiding them to prevent and address driver impairment. Employers expressed they anticipate a gradual, moderate reduction in the incidence of driver impairment because changes are a result of shifting behavioural norms. Employers contend however, that employer toolkits containing policy templates, brochures, safety checklists and safety presentations, offer them confidence in guiding and addressing driver impairment. This notion is echoed by many small employers interviewed who often faced scarce resources and constraints, and therefore likely to gain the most benefit from a toolkit. Research also demonstrates this link. Cook et al. (1996)
evaluated a workplace alcohol prevention program where participants received pamphlets about alcohol, behavioural guidelines for responsible use of alcohol, and exercises and tools. They found that informational resources produced significant (p=0.025) and meaningful short-term decreases in alcohol consumption (Cook et al., 1996), but not long-term decreases. As such, effectiveness is rated as moderately effective (2/3)

9.1.2. Healthy Workplace

While all employers approved of employer toolkits, most indicated that they did not feel it impacted whether they have familiarity and trust with their workforce. Most employers stated that open communication and treating employees with respect is paramount to cultivating trust. Toolkits were not seen as contributing to increasing familiarity between workers and employers. Most employers however, do contend that resources toolkits can cultivate a safety culture because they can support and direct the development of safety reporting systems and help shape mandatory training for workers and supervisors by providing templates and guides. Healthy workplace is rated 1/2.

9.1.3. Anticipated Stakeholder Collaboration

With regard to anticipated stakeholder collaboration, this option receives a score of 1/1 because it is expected to involve cooperation between workers, employers and WorkSafeBC. Employers interviewed also indicate that the presence of tools will encourage supervisors and direct managers to engage in safety discussions and cooperate as necessary when providing training to workers. Additionally, WorkSafeBC, when developing an employer toolkit, will likely consult with many stakeholders. For example, WorkSafeBC in 2012 created the "Domestic Violence in the Workplace Tool Kit" in response to a 2010 BC Coroners Service report (WorkSafeBC, 2012). During this process, WorkSafeBC “developed the toolkit in consultation with employers, scholars, police officers and related non-profit organizations” (WorkSafeBC, 2012).
9.1.4. Implementation Complexity

This option will require WorkSafeBC’s Industry and Labour Services (ILS) department to work with various internal departments, as well as external networks, and build upon existing tools. For example, ILS will have to work with the communications and web departments in developing employer toolkits and also work with employer associations. WorkSafeBC already holds existing relationships with industry and employer associations, such as SafetyDriven, the BC Construction Alliance Association and the BC Forestry Safety Council, and could use those existing avenues to disseminate best practices and knowledge transfer among its members. This option will require no regulatory changes, no administrative complexities, and no human resources challenges. This option is ranked 3/3, least difficult to implement.

9.2. Public Education and Awareness Campaign

Education and awareness needs to happen.
(Small-sized construction employer)

9.2.1. Effectiveness

Results from the survey in this study indicated that driver impairment is a societal issue, impacting public and worker safety. 60% of employers indicated in the survey, that it is a moderate to severe problem in BC workplaces. Interviews also suggest that it is an issue requiring shifts in behavioural and societal norms. Public education and awareness campaigns are demonstrated in literature to be effective. Elder et al.’s (2004) systematic review of the effectiveness of mass media campaigns for reducing alcohol-impaired driving and alcohol-related crashes found the median decrease in alcohol-related crashes resulting from the campaigns from the 8 studies was 13%. This option is ranked (2) as moderately effective.

9.2.2. Healthy Workplace

Implementing a public education and awareness campaign received mixed reviews among employers. On the one hand, a few employers stated that individuals
are already inundated with anti driver-impairment messages through ICBC and the justice system. One employer states, “I don’t think that there is any more awareness that needs to be done...I mean if people don’t hear that and get it, well they’re not listening”. On the other hand, many other employers expressed that addressing this issue requires long term behavioural change among all members of society, and is similar to campaigns like smoking or bullying. In terms of the healthy workplace criterion, many employers indicated that education will help foster trust among workers and supervisors through shared understandings and acknowledgement of the issue and its impact on families, communities and the public. However, many employers indicate that education alone, does not cultivate a safety culture because there are no requirements for safety reporting systems or mandatory training for staff. This option is ranked 1/2.

9.2.3. Anticipated Stakeholder Collaboration

Employers ranked this option as likely to involve stakeholder collaboration. Most employers state that education and awareness campaigns would be most effective if WorkSafeBC reached out to industry and other bodies with vested interest in public safety, such as ICBC, the Ministry of Justice, RCMP, VPD, the Industry Training Authority, and public education. For instance, WorkSafeBC could align its occupational driver impairment messages with ICBC’s existing CounterAttack Campaign (ICBC, 2015). This campaign aims to increase awareness of impaired driving by increasing advertising, social media and information at various social venues (ICBC, 2015). ICBC also works with the police to increase enforcement efforts. WorkSafeBC could include a work-related driver impairment message alongside this existing campaign and police-enforcement could also target work-related drivers. Many employers also suggest that a public education and awareness campaign would likely make the issue salient to workers and be a topic of workplace safety discussions. Scholz (1991) analyzed occupational health and safety enforcement strategies and provides evidence that a cooperative strategy, is an effective strategy in enhancing workplace health and safety. This option is ranked 1/1 as it is likely to involve stakeholder collaboration.
9.2.4. Implementation Complexity

This option does not require regulatory modifications, human resources training, and or administrative challenges, according to employers. Employers rank this option as least difficult for a regulatory body to implement because it builds upon existing relationships and avenues of dissemination – such as strategic partnerships with other legal bodies, industry associations, and WorkSafeBC’s internal departments.

9.3. Increased WorkSafeBC Board Officer Presence

I don’t think it’s a matter of instituting additional regulations or changing the regulations...they exist, it's a matter of enforcement.

(Medium-sized transportation employer)

9.3.1. Effectiveness

Greater visible enforcement presence by WorkSafeBC prevention officers is an option echoed by many employers in this study as an approach that may encourage workers, employers and board engagement, while also having a deterrent effect on unsafe workplace behaviours. For instance, Scholz and Gray (1990) analyzed the impact of the Occupational Health and Safety Administration enforcement on workplace injuries using data on injuries and inspections for a panel of 6,842 large manufacturing plants between 1979 and 1985. They found significant deterrence effects where inspections imposing penalties induced a 22% decline in injuries to those plants during the subsequent few weeks. Their results indicate that specific deterrence from enforcement actions could be effective in changing business behaviour to foster health and safety. A greater presence by board officers during work hours, will have a deterrent effect (Macatee, 2014). It will also provide workers and employers learning opportunities when violations do occur. Research demonstrates that specific deterrence that focuses on serious violations and chronic non-compliers was revealed to enhance the effectiveness of enforcement compared to general deterrence that randomly targeted organizations (Scholz, 1991; Gray et al., 1993; Shavell, 1991). This option scores (3) as highly effective.
9.3.2. **Healthy Workplace**

In terms of fostering trust among employers and workers, many employers suggest that increased board presence would have a positive impact on workplaces. They reveal that they would appreciate it if WorkSafeBC board officers attended workplaces more often to educate, consult and interact with workers and supervisors. Moreover, they state that if board officers increased their presence in workplaces, a deterrent effect would occur and supervisors and direct managers would be more inclined to use safety-reporting systems. Furthermore, enforcement and penalties, makes salient socially undesirable behaviours, helping supervisors and employers interpret legal duties in concrete situations (Scholz, 1985). Employers rank this option, 2/2, as high in trust and high in cultivating a safety culture.

9.3.3. **Anticipated Stakeholder Collaboration**

In interviews, most employers held favourable views towards this option, insofar that it did not concentrate solely on penalties and encompasses elements of consultation and education with workers and employers. Employers hypothesized that if WorkSafeBC were to increase its board officer presence, it would necessitate direct engagement between employers, workers and WorkSafeBC. Whether board officers write safety orders, provide administrative penalties, or educate and consult – workers and their respective employers will be involved in the process and follow up. Scholz (1991) indicates that a cooperative enforcement strategy is effective in enhancing workplace health and safety. He contends that enforcement that is specific and focuses on serious violations and non-compliance is more effective than classical deterrence (randomly targeting firms). He also states that a cooperative enforcement strategy requires trust in the enforcement strategy. This option is likely to involve stakeholder collaboration ranking (1/1).

9.3.4. **Implementation Complexity**

In terms of implementation complexity, this option ranks as 2/3 as it is moderately difficult to implement. Though this option does not require regulatory modifications, it does require a degree of administrative changes and change management. For
instance, this option may require either hiring more board officers, or reallocating existing officers to a workplace enforcement task force, increasing professional development for existing officers, and assigning new enforcement tasks to target high risk or safety sensitive employers.

9.4. Regulatory Amendments

9.4.1. Effectiveness

It is difficult to assess whether regulatory amendments will largely reduce the incidence of workers who drive impaired. Academic literature indicates that regulatory changes are usually one of the first steps taken to formally address a workplace health and safety issue (Viscusi, 1983). However, there are few studies that address the effectiveness of regulations in the absence of other interventions. Regulatory interventions occur when a hazard is identified by a regulatory agency and declared as harmful, and establish standards to mandate the reduction (Viscusi, 1983). Regulatory interventions legalize workplace health and safety concerns and provide governing bodies with another legal instrument to enforce safety (Viscusi, 1983). For instance, the UK in response to a rise in drug-driving cases recently passed a new law effective March 2015, making it illegal to drive with low limits of certain levels of drugs in a body, even if driving is not affected (Gov.UK, 2015). Moreover, interviews with employers in this study reveal that regulations alone are expected to have limited impact on driver impairment at work. Employers expressed concern that currently, regulations are not effectively enforced due to lack of human resources and enforcement. Though all employers indicate that legitimizing and bringing attention to driver impairment at work is important, many recognize regulations are anticipated to be largely ineffective without adequate levels of education and enforcement. Research also supports the notion that mass media campaigns should occupy a supporting role in other activities such as enforcement and legislation (Woolley, 2001). For the reasons listed above, I rank the “Amend the OH&S Regulations” option (2/3).
9.4.2. Healthy Workplace

Employers view amending the regulations as contributing to fostering a safety climate, but not trust between worker and employers. Many employers acknowledge that when regulations are amended and more specific, it is likely that reporting systems and mandatory training for workers and supervisors, will occur. Discussions amongst shared joint occupational health and safety committees regarding the regulations may also foster a safety culture. In terms of cultivating a culture of trust, modifying the regulations does not seem to increase familiarity with the workforce alone. Employers state regulations are one tool to handle the issue, but not a main driver of change. For instance, one employer states, “Do regulations provide a reason for change? It’s one tool that we can use that we can say, hey, the regulators are agreeing with us”. As such amending the regulations ranks 1/2.

9.4.3. Anticipated Stakeholder Collaboration

A regulatory amendment is expected to involve stakeholder collaboration due to consultations and input with the public, employer associations, and technical experts and specialists. Many employers describe amending the regulations as an iterative process, requiring input from many parties. Furthermore, once a regulation is amended, worker-employer safety committees are expected to discuss it and follow the guidelines. This option ranks 1, likely to involve stakeholder collaboration. Robust stakeholder collaboration consultation the requirements for stakeholder engagement and consultation are large and also require industry and labour participation.

9.4.4. Implementation Complexity

A regulatory amendment is expected to be very difficult to implement, as it requires major regulatory changes. It will require approval from WorkSafeBC’s Board of Directors and changes of the regulations will require a certain degree of clarity, breadth and description. Furthermore, employers indicate that once regulations are amended, workplace policies may need to be developed. Many smaller employers expressed concern with lacking the technical expertise to develop policies that address amended regulations. They also state interpretation of the amended regulations may be issues,
as smaller employers often lack the resources to deal with multiple job demands. Employers could also face some operational challenges with evaluating existing levels of work-related drivers and training supervisors.

### 9.5. Scoring Summary

The following table presents a scoring summary and analysis of the policy options against the criteria. These scores are intended to provide insight into the how the policy options meet the identified criteria rather than to identify a single recommendation. The effectiveness criterion is weighted double because reducing the number of workers who drive impaired is the most important outcome of any policy option because of its risks of public and worker safety.

<table>
<thead>
<tr>
<th>Table 9-1. Scoring summary of options analysis</th>
<th>POLICY OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRITERIA</td>
<td>Employer Toolkit</td>
</tr>
<tr>
<td>Effectiveness (X2)</td>
<td>4</td>
</tr>
<tr>
<td>Healthy Workplace</td>
<td>Cultivates a culture of trust among employers and workers</td>
</tr>
<tr>
<td></td>
<td>Fosters a safety culture</td>
</tr>
<tr>
<td>Anticipated Stakeholder Collaboration</td>
<td>1</td>
</tr>
<tr>
<td>Implementation Complexity</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL SCORE</td>
<td>9</td>
</tr>
</tbody>
</table>
This analysis reveals that “Regulatory Amendments” is the lowest scoring option when evaluated against the criteria. While the multiple-criteria analysis demonstrates that this option involves a high degree of anticipated stakeholder collaboration, this study shows it is not effective as a stand-alone option. Moreover, general impairment regulations within the Occupational Health and Safety Regulations already exist. Therefore, the issue is not the lack of regulations, but the lack of adequate tools, resources and enforcement to address work-related driver impairment by employers. Without adequate enforcement and prevention interventions, amending the regulations is unlikely to be an effective option on its own. In addition, Increasing WorkSafeBC Board Officer Presence achieves the highest score and ranking highest on effectiveness. The proximity in score with the Employer Toolkit and Public Education and Awareness Campaign options following closely behind indicates that these options must work in tandem with Increased Board Presence. As the literature and this study reveals, prevention is an important part of enforcement. The recommended policy options are not mutually exclusive and could be implemented in succession.
Chapter 10.

Recommendations

The analysis of the policy options reveals Increased WorkSafeBC Board Officer presence can be an effective option to address driver impairment in the workplace. By using these criteria, WorkSafeBC can consider the impact of Increased WorkSafeBC Board Presence, in conjunction with a (1) public education and awareness campaign and (2) the development of an employer toolkit to effectively address and manage driver impairment at work.

Thus, this study recommends a portfolio of policy options. This study recommends WorkSafeBC’s internal departments such as Human Resources, Prevention, and Industry and Labour Services, work collaboratively to amend and the draft roles and responsibilities of WorkSafeBC Board Officers accordingly to provide greater enforcement and presence at workplaces. Increasing Board Officer presence in the context of addressing work-related driver impairment in BC, as discussed in this study, should aim to emphasize the roles of education and consultation with workers and employers, as opposed to solely focusing on penalties and administrative orders. The next step is WorkSafeBC should immediately begin developing an occupational driver impairment employer toolkit and liaise with external agencies with a vested interest in road and public safety, such as ICBC, VPD and RCMP, to deliver a public education and awareness campaign. Given the current discourse regarding legal reform of marijuana in Canada, this topic is timely for the public and British Columbians (CAMH, 2014). Furthermore, workers who drive do not just impact workplace safety, but they also risk public safety. In terms of the employer toolkit, WorkSafeBC would be responsible for leading development and dissemination. Similar to other WorkSafeBC employer toolkits (bullying and harassment toolkit), WorkSafeBC could liaise with industry, employers and experts to develop this toolkit. With regards to a public awareness and education
campaign, WorkSafeBC could work with agencies that have existing drink driving campaigns, such as ICBC. For example, WorkSafeBC could partner up with ICBC in the CounterAttack awareness campaign where enhanced police enforcement could also target work-related drivers (ICBC, 2015). These recommendations will benefit employers, workers and public safety.
Chapter 11.

Conclusion

This study sought to find viable policy options that WorkSafeBC could implement to address work-related driver impairment in British Columbia. The survey and descriptive statistics provide valuable information relating to employers’ current knowledge and perceived magnitude of the issue. The qualitative analysis offers greater insights into the specific challenges of addressing driver impairment at work and guided the directions for policy intervention. Potential policy options and policy criteria and measures are derived from the survey, interviews, academic literature and grey literature to evaluate the impact of policies to determine which could best tackle driver impairment in the workplace. After evaluating the potential policy options against the identified criteria, the outcomes of the policy analysis yielded the best options given the criteria. The options are to increase WorkSafeBC Board Officer presence at workplaces, implement an education and awareness campaign in collaboration with other organizations and develop a work-related driver impairment employer toolkit. This study demonstrates that trust and collaboration amongst all stakeholders, (workers, employers and WorkSafeBC) is key to tackling this issue. This study recommends WorkSafeBC implement these options to effectively address occupational driver impairment in British Columbia and prevent injury and death on roads.
Chapter 12. 

Limitations and Future Directions

Due to the nature of the research questions, scope, time and resource constraints, this study has several limitations that merit acknowledgement. Firstly, this research project did not receive any funding, and as a result, the author was solely responsible for all aspects of this study, including, survey development, survey data collection, interviewing and analysis, and policy analysis and conclusions. Secondly, there were time constraints because the capstone was completed in the author’s second year of a Master’s program. As such, survey questionnaire development, and data collection occurred during the months of October to December 2014 within a limited timeframe. Lastly, as this capstone is situated within the public policy domain, it is limited to finding policy options that can be employed by WorkSafeBC or other statutory OHS governing bodies. Furthermore, because this research is focused on policy development and evaluation, the author focused on a mixed-methods approach using qualitative surveys and descriptive statistics, which did not require a regression analysis of survey results. Moving forward with the recommendations requires further exploratory policy and evaluation beyond what has been done in this study. The following describe directions for future research that merit consideration.

First, as a result of the aforementioned time and scope constraints, this study took a broad-brush approach when focusing on the factors that contribute to impairment. This meant that the author examined a wide category of known causes of impairment, which included alcohol, drugs and fatigue as sources of impairment, as opposed to narrowing in on a single factor. However, the author acknowledges that fatigue, alcohol and drugs vary considerably with one another. The author recognizes the growing body of literature on medical conditions that impair driving, such as Parkinson’s and dementia, warrants future consideration.
Second, the prevalence of work-related driver impairment in BC causing injury and fatalities was difficult to ascertain due to data deficiencies and incomplete information. For this reason, this study synthesizes academic literature and primary research to obtain an estimate. WorkSafeBC can consider collecting work-related impairment statistics, which will allow for evidenced-based evaluation of programs and interventions. WorkSafeBC could consider amending its data collection services or create data sharing agreements with agencies such as ICBC, RCMP, and the VPD to collect this data.

Third, although this study used a mixed-methods approach, the survey was cross-sectional and measured respondents’ responses at a single point in time. Future research on this population could benefit from employing a prospective cohort study, covering an identified, longer timespan, which will be more methodologically sound. A prospective cohort study can also allow for the collection of baseline data, allowing for ex-ante and post-ante evaluations of interventions (LaMorte, 2015).

Fourth, this study is a mixed methods study that relied on self-reported data by “employers”, with potential sources of respondent bias. The term “employers” was a blanket category intended to obtain responses by individuals who have direct influences on work practises and drivers in their organizations. However, when this survey was distributed to the sample population, it was not possible to ensure that those who received, opened and responded to the survey held roles which have control over work practices. This is because employer business contact information was provided by WorkSafeBC and likely pertains to assessment or claims-related activities. As a result, many employers who opened the survey are likely those responsible for direct communication with WorkSafeBC and did not necessarily hold “management” or “supervisory” positions. Thus, 23% of respondents indicated that they did not have responsibility for supervising or managing employees in their organization and held roles such as executive assistant, legal assistant, office administrator and accountant. Employers could have underreported and underestimated impairment-related information due to the social desirability bias (Grimm, 2010), and the social stigma attached to driver impairment (Shults et al., 2002).
Fifth, the transportation and warehouse sector was underrepresented, only representing 3% of overall respondents. Directions for research could oversample this sector to draw out any potential variances.

In addition, employers were the focus of this study because of the crucial role they play in espousing safe work practices and behaviours. However, employers’ views could vastly differ from the views of other key stakeholders. Future directions for research could benefit by engaging other stakeholders, such as workers or policy makers into the discourse about work-related driver impairment.

Lastly, financial costs are always paramount when considering public policy. The author acknowledges that the reason financial costs were not included in the evaluation of the criteria is due to incomplete information about the projected costs of Occupational Health and Safety regulatory amendments and the current WorkSafeBC Board Officer budgetary allocation. Costs for regulatory amendments would typically include time commitments of Board Members, scholars, technical experts, policy analysts and legal experts. Additionally, the costs of public education and awareness campaigns are contingent upon the degree of collaboration and the extent of shared costs between WorkSafeBC and interested agencies. Therefore, further evaluation is necessary prior to estimating financial costs for this policy option.

It is hoped that this study represents a contribution towards the important intersections of workplace health and safety and road safety. Driver impairment in the workplace poses significant risks and costs to businesses, government and society. The recommendations from this study can contribute to the avoidance of risks and damages from potential incidents, saving lives, strengthening workplace health and safety culture and reducing cases of morbidity. Examining how employers experience occupational driver impairment, barriers to addressing it and understanding gaps in knowledge, as been done in this study, will assist policymakers and regulatory bodies implement more effective policies that enhance community, workplace and public safety.
References


Canadian Human Rights Act, RSC 1985, c H-6, <http://canlii.ca/t/52c3f> retrieved on 2015-03-20


Criminal Code, RSC 1985, c C-46 s 249-261.


Appendix A.

WorkSafeBC Letter of Authorization

October 6, 2014

WorkSafeBC
6951 Westminster Highway
Richmond, BC V7C 1C6

WorkSafeBC grants Jennifer Diep non-exclusive access to employer listserv data of employer business contact information (“the Data”) for the purpose of surveying employers in BC on their perceptions, knowledge and awareness on issues relating to occupational driver impairment for her SFU Master of Public Policy thesis.

In particular, access is granted to the following sectors and corresponding subsectors:

- Primary resources + subsector
- Manufacturing + subsector
- Construction + subsector
- Service + subsector
- Transportation and warehousing + subsector
- Public + subsector

This consent is for the purposes of the above stated research only.

The consent to use this Data is final.

The Data will be used in accordance with the regulations and guidelines of the Simon Fraser University Office of Research Ethics.

For WorkSafeBC:

Name: Mark Ordeman

Signature: signed

Date: October 9, 2014
Appendix B.

Survey

Occupational Driver Impairment: Knowledge, Perceptions and Attitudes Amongst Employers in BC

Thank you for agreeing to take part in this quick 5-6 minute survey on behalf of SFU and WorkSafeBC. Please remember that all information you provide is anonymous and confidential. You do not have to answer any question that you do not want to. If at any point you decide you do not wish to continue being involved in this study, you may exit the survey by closing your browser or navigating to another location on the Internet. If at anytime you leave the survey, you can come back to it later to finish it. This survey is being sent out to more than 6000 employers in BC, results will be reported in the aggregate only. Your personal information will not be linked in any way to your responses in this survey. If you have any questions regarding this survey, you can contact me, the principal researcher or please click on the information sheet for further details.

Q1 Do you consent to take this survey?
   ☑ Yes (1)
   ☑ No (2)

If No Is Selected, Then Skip To End of Survey

Q2 Do any of your employees drive for work purposes?
   ☑ Yes - using a company provided vehicle (1)
   ☑ Yes - using their own personal vehicle (2)
   ☑ Both - using a company vehicle and their own personal vehicle (3)
   ☑ No (4)

Q3 Do you have responsibility for supervising or managing employees in your firm or organization?
   ☑ Yes (1)
   ☑ No (2)

Q4 Please identify your role within your organization.
   ☑ Manager (1)
   ☑ Supervisor (2)
   ☑ Foreman/Forewoman (3)
   ☑ Health and Safety Officer (4)
   ☑ Owner (5)
   ☑ Lead Hand (6)
   ☑ Other, please specify (7) ____________________
Q5 Approximately how employees work for your company?

- 4 (1)
- 5 (2)
- 6 (3)
- 7 (4)
- 8 (5)
- 9 (6)
- 10 (7)
- 11 (8)
- 12 (9)
- 13 (10)
- 14 (11)
- 15 (12)
- 16 (13)
- 17 (14)
- 18 (15)
- 19 (16)
- 20 (17)
- 21 (18)
- 22 (19)
- 23 (20)
- 24 (21)
- 25 (22)
- 26 (23)
- 27 (24)
- 28 (25)
- 29 (26)
- 30 (27)
- 31 (28)
- 32 (29)
- 33 (30)
- 34 (31)
- 35 (32)
- 36 (33)
- 37 (34)
- 38 (35)
- 39 (36)
- 40 (37)
- 41 (38)
- 42 (39)
- 43 (40)
- 44 (41)
- 45 (42)
- 46 (43)
Q6 Please choose which sector best describes your organization.

- Primary Resources: Agriculture (1)
- Primary Resources: Fishing (2)
- Primary Resources: Forestry (3)
- Primary Resources: Oil, Gas, Mining (4)
- Manufacturing: Food or Beverage Products (5)
- Manufacturing: Metal or Non-Metallic Mineral Products (6)
- Manufacturing: Petroleum, Coal, Rubber, Plastic, or Chemical Products (7)
- Manufacturing: Wood or Paper Products (8)
- Manufacturing: Other Products (not described above) (9)
- Construction: General Construction (10)
- Construction: Heavy Construction (11)
- Construction: Road Construction or Maintenance (12)
- Transportation and Warehousing: Warehousing (13)
- Transportation and Warehousing: Transportation (14)
- Trade: Retail (15)
- Trade: Wholesale (16)
- Service: Accommodation, Food or Leisure Services (17)
- Service: Business Services (18)
- Service: Professional, Scientific, or Technical Services (19)
- Service: Other Services (not described above) (20)
- Service: Education (21)
- Service: Healthcare or Social Services (22)
- Service: Utilities (23)
- Public (24)
- Other (25)

Q7 Please approximate the percentage of your employees that drive their own personal vehicles and company-owned vehicles for work purposes.

- Personal vehicle (1)
- Company owned vehicle (2)
Q8 In the last 12 months, approximately how many driver impairment-related incidents have there been in your workplace? Please give your best guess estimate.

- 0 (1)
- 1 (2)
- 2 (3)
- 3 (4)
- 4 (5)
- 5 (6)
- 6 (7)
- 7 (8)
- 8 (9)
- 9 (10)
- 10 (11)
- 11 (12)
- 12 (13)
- 13 (14)
- 14 (15)
- 15 (16)
- 16 (17)
- 17 (18)
- 18 (19)
- 19 (20)
- 20 (21)
- 21 (22)
- 22 (23)
- 23 (24)
- 24 (25)
- 25 (26)
- 26 (27)
- 27 (28)
- 28 (29)
- 29 (30)
- 30 (31)
- 31 (32)
- 32 (33)
- 33 (34)
- 34 (35)
- 35 (36)
- 36 (37)
- 37 (38)
- 38 (39)
- 39 (40)
- 40 (41)
- 41 (42)
Q9 For the purposes of this survey, driver impairment means: The deterioration of functions critical to safe driving, such as seeing, ability to pay attention, memory and decision making. Typical causes of this deterioration include fatigue, alcohol, and drugs (illegal, prescription and over-the-counter).

Q10 As an employer, to what extent do you feel driver impairment is or is not a problem in workplaces across BC?
☐ Not at all a problem (1)
☐ Minor problem (2)
☐ Moderate problem (3)
☐ Serious problem (4)

Q11 As an employer, to what extent do you feel driver impairment is or is not a problem in your industry?
☐ Not at all a problem (1)
☐ Minor problem (2)
☐ Moderate problem (3)
☐ Serious problem (4)

Q12 To what extent do you feel driver impairment is or is not a problem in your workplace?
☐ Not at all a problem (1)
☐ Minor problem (2)
☐ Moderate problem (3)
☐ Serious problem (4)
Q13 Please indicate the extent to which you agree or disagree with each of the following.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Neither Agree nor Disagree (3)</th>
<th>Agree (4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taking stimulants to stay awake while driving is alright. (1)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Having beer during lunch break before driving for work is fine. (2)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Driving while hungover is not a problem. (3)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Driving while tired is safe. (4)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Smoking a joint and driving is dangerous. (5)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
Q14 Below is a list of statements. Please indicate how you feel about each statement by indicating your level of agreement or disagreement with each one.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Neither Agree nor Disagree (3)</th>
<th>Agree (4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As an employer, I should not be involved in matters where my employee is impaired when driving for work. (1)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The Insurance Corporation of British Columbia is responsible for the health and safety of my employees when they drive for work. (2)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The justice system is responsible for the health and safety of my employees when they drive for work. (3)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>When my employees drive, they are responsible for their own health and safety. (4)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Health and safety is the</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>shared responsibility of the employer and employee. (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If an employee drives hung over, it is fine as long as they are not involved in a motor vehicle crash. (6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When a worker is suspected of impaired driving, I feel comfortable discussing this with them directly. (7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When a worker is suspected of impaired driving, the justice system can address this issue with them. (8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please read each of the following scenarios. Then, for each one, please select the one response that fits most closely with how you feel about what to do.
Q15 Your driver, Bob, discloses to you he hasn't slept for 24 hours and is exhausted. He is scheduled to drive that day to make an important delivery. A financial penalty will incur if the delivery is not made that day. You are also short staffed. What do you do?
- Nothing, have Bob make the delivery (1)
- Tell Bob to take a nap and make the delivery later in the day (2)
- Incur a financial penalty by sending Bob home to rest and rescheduling the delivery for the following day (3)

Q16 Your employee Susan drives her own vehicle for the purposes of work. You overhear from other employees that Susan drinks while having lunch with clients. What do you do?
- Nothing, Susan hasn't been involved in a motor vehicle crash yet (1)
- Nothing, it is not my problem as an employer (2)
- Book a meeting to talk to Susan about the situation (3)
- Send an email to all employees reiterating workplace policies (4)

Q17 Your employee Jared is a truck driver. Jared reports he took NyQuil instead of Dayquil for his cold. NyQuil often causes drowsiness. What do you do?
- Allow him to continue driving (4)
- Send him home until he is fit to work (5)
- Put Jared on office duties (6)

Now, assuming impairment is achieved by consumption of any amount of alcohol, drugs (illegal, prescription and over-the-counter) or fatigue, please answer the following questions.

Q18 Please indicate the degree to which you think driver impairment is or is not a problem in each of the following cases.

<table>
<thead>
<tr>
<th></th>
<th>Not at all a problem (1)</th>
<th>Minor problem (2)</th>
<th>Moderate problem (3)</th>
<th>Serious problem (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In BC workplaces (1)</td>
<td>✗</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>In your industry (2)</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>In your workplace (3)</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
</tbody>
</table>

Q19 Now, here are a few questions about your own knowledge and experience about drivers in BC workplaces.
Q10 Do you know of workers in your industry who drive while impaired?
- Definitely yes (1)
- Probably yes (2)
- Maybe (3)
- Probably not (4)
- Definitely not (5)

Q20 Do you know of workers in your workplace who drive while impaired?
- Definitely yes (1)
- Probably yes (2)
- Maybe (3)
- Probably not (4)
- Definitely not (5)
<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Neutral (3)</th>
<th>Agree (4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are tools and resources to help me address driver impairment. (1)</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td>I am uncomfortable having a conversation with my employees about work-related driver impairment (2)</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td>Workplace policy on work-related driver impairment is generally confusing. (3)</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td>My company would benefit with more resources from WorkSafeBC in handling work-related driver impairment (safety meeting guides, information sheets, presentations). (4)</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td>I am aware of WorkSafeBC’s Act and Regulations relating to</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
</tbody>
</table>
Q22 Does your company have specific programs and/or policies in place to address work-related driver impairment?
- Yes (1)
- No (2)
- I don't know (3)

Answer: If Does your company have specific programs and/or policies in place to address work-related driver... No Is Selected

Q23 What tools and resources would you say you would need to address driver impairment in your company?
- Specific work-related driver impairment policy and resources (1)
- Employee and family assistance program (2)
- Educational materials (3)
- Safety meeting topics (4)
- Workshops (5)
- Internal company campaigns (6)
- Other, please specify (7) ____________________
- None of the above (8)

Answer: If Does your company have specific programs and/or policies in place to address work-related driver... Yes Is Selected

Q24 To the best of your knowledge, which of the following programs and/or policies if any, does your company have in place to address driver impairment. Please select all that apply. If there are policies or programs not on the list, please select “Other” and type in your answer.
- Specific work-related driver impairment policy and resources (1)
- Employee and family assistance program (2)
- Educational materials (3)
- Safety meeting topics (4)
- Workshops (5)
- Internal company campaigns (6)
- Other, please specify (7) ____________________
- None of the above (8)
Q25 Do you ever discuss driver impairment issues during company meetings (e.g. safety meetings, toolbox meetings, team meetings etc.)

- Never (1)
- Rarely (2)
- Sometimes (3)
- Often (4)
- Always (5)

Answer if Does your company have specific programs and/or policies in place to address work-related driver... No is selected

Q26 To the best of your knowledge, what are the main reasons you think your company may not directly address work-related driver impairment. Please select two from the list below. If none of these reasons apply, please select “None of these reasons”.

- It isn’t an issue (1)
- We don’t have policy to address it (2)
- It isn’t our responsibility (3)
- I don’t know what the policy is (4)
- It is challenging to deal with (5)
- The laws relating to it are confusing (6)
- The justice system or the ICBC should be dealing with it (7)
- None of these reasons (8)

Answer if Does your company have specific programs and/or policies in place to address work-related driver... Yes is selected

Q27 Does your company enforce these policies?

- Yes, why (1) ______________________
- No, why (2) ______________________

Answer if Following this survey, I will be conducting a follow-up interview with interested respondents. ... Name is Empty Or Following this survey, I will be conducting a follow-up interview with interested respondents. ... Email Address is Empty

Following this survey, I will be conducting a follow-up interview with interested respondents. If you would be willing to take part in a follow-up in person or telephone interview between November 28 – January 15, 2014, please provide your contact information below. If you do not wish to participate in the interview, please leave this blank. Please note participants who agree to be interviewed will be drawn at random to participate in a follow-up interview. If you agree to be contacted for a follow-up, you can always decline the request when contacted.

Name (1)
Email Address (2)
Phone Number (3)

Thank you so much for your time and helping to keep BC roads and workplaces safe!
Appendix C.

Survey Participant Consent Form

Simon Fraser University
Consent to Participate in Research
Occupational Driver Impairment:
Knowledge, Perceptions and Attitudes Amongst Employers in BC.

Who is conducting the study?
My name is Jennifer Diep and I am a student in the Master of Public Policy program at Simon Fraser University. I am conducting this study as a part of my program requirements.

Why should you take part in this study?
I am writing this thesis, which will investigate employers’ understanding of issues relating to work-related driver impairment. The objective of my research is to develop a set of policy options and recommendations that WorkSafeBC and other occupational health and safety “OH&S” bodies can consider to develop appropriate tools and resources for employers to prevent and address work-related driver impairment.

What happens if you say “Yes, I want to be in the study”?
If you agree to participate in my research, I will ask you to complete the attached online survey. The survey will involve questions about work-related driver impairment and should take no longer than 10-12 minutes to complete.

You will be asked at the end of the survey whether you are interested in being contacted to participate in a follow up in person interview or telephone interview, to occur at your earliest convenient. If you agree to be contacted for a follow up, you can always decline the request when contacted.

What are the benefits of participating?
It is hoped that the research will provide WorkSafeBC and other OH&S authorities with information on how to help employers address work-related driving impairment issues to foster public health and safety and contribute to scientific knowledge.

What are the risks of participation?
There will be no personal questions asked, only questions as it pertains to work-related driver impairment knowledge, attitudes and perceptions. If some of the questions make you uncomfortable or upset, you are free to decline to answer any questions you don’t wish to, or to stop the survey at anytime.

How is privacy being addressed?
This survey is being administered using Qualtrics.com, which is a web-based survey software. Qualtrics is a webservice company located in the USA and is subject to US laws. In particular, the US Patriot Act, which allows authorities access to the records of the internet service providers. If you choose to participate in the survey, you understand
that your responses to the survey questions will be stored and accessed in the USA. The security and privacy policy for the websurvey company can be found in the following link:

http://qualtrics.com/security-statement/

The link to the Qualtrics.com survey is anonymized, meaning that the link is programmed so that your identity will not be connected to the responses provided. In other words, I will not be able to track any response to any specific respondent.

**How will your confidentiality be protected?**
If results of this study are published or presented, individual names and other personally identifiable information will not be used unless you give explicit permission to do so. I will not use individual names, but will refer generic labels such as title, organization size and sector. (E.g. “supervisor” in a “large service sector organization”).

All data downloaded by from Qualtrics.com will be stored and maintained on a password-protected laptop during the course of the research. After the two year period, the data will be destroyed. Only my faculty supervisor, Dr. Judith Sixsmith and I will have access to the raw data. The information will be saved for two years and then destroyed. Following this, all email communication will be deleted.

**You participation is completely voluntary.**
You are free to decline to take part in this survey. You can decline to answer any questions and are free to stop taking part in this survey at any time. Whether or not you choose to participate in the research and whether or not you choose to answer a question or continue participating in the project, there will be no penalty to you or loss of benefits to which you are otherwise entitled.

**Organizational Permission**
Permission to conduct this research study from WorkSafeBC has been obtained.

**Who can you contact if you have questions about the study?**
This research is being conducted under the permission of the Simon Fraser University Research Ethics Board (ethics application number 2014s0552).

If you have any questions about this research, please feel free to contact me.

Please let me know if you would like to obtain the research results and I can send you a copy of my completed project.
If you have any questions, concerns or complaints, please contact:
Dr. Jeff Toward
Director of SFU’s Office of Research Ethics
Simon Fraser University
Burnaby, B.C. Canada
V5A 1S6

If you agree to take part in the research, please print or save a copy of this page to keep for future reference, then click on the “Accept” button.
Appendix D.

Interview Schedule

Simon Fraser University
Master Public Policy Graduate Research Interview Schedule
Supervisor: Dr. Judith Sixsmith
Principal Investigator: Jennifer Deep

Occupational Driver Impairment: Knowledge, Perceptions and Attitudes Amongst Employers in BC.

Research Problem
Occupational driver impairment poses a threat to public safety and is a concern for workers, employers, pedestrians and infrastructure. Employers are the focus of the research because you occupy an important role in promoting workplace health and safety. My research is in collaboration with WorkSafeBC and investigates employers’ understanding, knowledge and attitudes of issues relating to work-related driver impairment. The objective of my research is to develop a set of policy options and recommendations that WorkSafeBC and other occupational health and safety “OH&S” bodies can consider to develop appropriate tools and resources for employers to prevent and address impaired driving at work.

Purpose of Interview
I am interested in learning more about how your organization currently addresses work-related driver impairment, your understanding on the perceived extent of the issue in your industry and/or organization, how responsibilities are understood, and if there are any challenges and/or barriers your organization faces addressing this issue. There are no right or wrong answers to the topics we will be discussing. I am just looking for your personal perspective and will be pleased with whatever information you provide me with.

Topic Areas of Discussion
1) Opinions on the extent of work-related driver impairment problems in your workplace and/or industry
2) Current actions taken by your organization to prevent or mitigate work-related driver impairment
3) Challenges and barriers of addressing work-related driver impairment
4) Possible solutions to address work-related driver impairment
5) Knowledge of legal and OH&S responsibilities
6) Past or present experiences dealing with work-related driver impairment
7) Policy options
Appendix E.

Interview Participant Consent Form

Simon Fraser University
Consent to Participate in Research
Occupational Driver Impairment:
Knowledge, Perceptions and Attitudes Amongst Employers in BC.

Thank you very much for agreeing to be contacted for a follow up interview.

My name is Jennifer Diep and I am a student in the Master of Public Policy program at Simon Fraser University. I am conducting this study as a part of my program requirements.

I am writing this thesis, which will investigate employers’ understanding, knowledge and attitudes of issues relating to work-related driver impairment. The objective of my research is to develop a set of policy options and recommendations that WorkSafeBC and other occupational health and safety “OH&S” bodies can consider to develop appropriate tools and resources for employers to prevent and address work-related driver impairment.

To enhance the depth and quality of my research, I am interested in your perspectives, opinions, and ideas of how your organization currently addresses work-related driver impairment, your understanding on the perceived extent of the issue in your industry and/or organization, your thoughts on potential policy options, and if there are any challenges and/or barriers your organization faces addressing this issue. I would like to interview you either by telephone or in person at a time that is convenient for you.

What happens if you say “Yes, I want to be in the study”? If you agree to participate in my research, I will conduct an interview with you at a time and location of your choice. The interview will involve questions about your opinions of the extent of the problem in your industry or workplace, challenges and/or barriers of addressing work-related driver impairment and possible solutions to address this issue. It should last no more than 1 hour. With your permission, I will audiotape and take notes during the interview. The recording is to accurately capture the information you provide, and will be used for transcription purposes only. If you choose not to be audiotaped, I will take notes instead. If you agree to being audiotaped but feel uncomfortable at any time during the interview, I can turn off the recorder at your request. Or if you don't wish to continue, you can stop the interview at any time.

You can also retract any statements or withdraw your participation in the study at any time without penalty. If you would like to retract a statement or withdraw your participation, you can email me directly at Jennifer.diep@sfu.ca and I will destroy all data associated with you.

I expect to conduct only one interview; however, follow-ups may be needed for added clarification. If so, I will contact you by mail/phone to request this. Follow-up
interviews can occur over the phone or in person; whichever is most convenient for you. Questions will include any clarifications that may have occurred after the first interview.

**What are the benefits of participating?**
It is hoped that the research and your thoughts will provide WorkSafeBC and other OH&S authorities with information on how to help employers address work-related driving impairment issues to foster public health and safety and contribute to scientific knowledge.

**What about risks?**
There will be no personal questions asked, only questions as it pertains to work-related driver impairment knowledge, attitudes and perceptions. If some of the questions make you uncomfortable or upset, you are free to decline to answer any questions you don’t wish to, or to stop the interview at anytime.

**How will your confidentiality be protected?**
If results of this study are published or presented, individual names and other personally identifiable information will not be. I will not reveal your identity and will protect it to the greatest extent that I am able. I intend to use exact quotes from interviews in my research report. I will not use individual names, but will refer generic labels such as the general role in the organization, organization size and sector. (E.g. “supervisor” in a “large service sector organization”).

All interview data will be stored and maintained on a password-protected laptop during the course of the research. After the two year period, the interview data and consent forms will be destroyed. Following this, all email communication will be deleted. Only my faculty supervisor, Dr. Judith Sixsmith and I will have access to the raw interview data. When the study is concluded, content from interviews and general communications will be saved as a word document with all of the contact information and personal identities removed. The information will be saved for two years and then destroyed. Following this, all email communication will be deleted.

**Reimbursement**
You will not be paid for taking part in this interview.

**Rights**

*Participation in research is completely voluntary.*
You are free to decline to take part in this interview. You can decline to answer any questions and are free to stop taking part in this interview at any time. Whether or not you choose to participate in the research and whether or not you choose to answer a question or continue participating in the project, there will be no penalty to you or loss of benefits to which you are otherwise entitled.

**Organizational Permission**
Permission to conduct this research study from WorkSafeBC has been obtained.
**Who can you contact if you have questions about the study?**
This research is being conducted under the permission of the Simon Fraser University Research Ethics Board (ethics application number **2014s0552**).

If you have any questions about this research, please feel free to contact me.

Please let me know if you would like to obtain the research results and I can send you a copy of my completed project.

If you have any questions, concerns or complaints, please contact:
Dr. Jeff Toward
Director of SFU’s Office of Research Ethics
Simon Fraser University
Burnaby, B.C. Canada
V5A 1S6

********************************************************************************

**CONSENT**

Do you consent to having your title, general organization size and sector used when referencing your comments and/or direct quotes while participating in an interview for the study titled:
*Occupational Driver Impairment: Knowledge, Perceptions and Attitudes Amongst Employers in BC?*
Please check one
Yes _____ No _____

Do you consent to participate in an interview for the study titled:
*Occupational Driver Impairment: Knowledge, Perceptions and Attitudes Amongst Employers in BC?*
Please check one
Yes _____ No _____

Do you consent for this interview to be recorded for the study titled:
*Occupational Driver Impairment: Knowledge, Perceptions and Attitudes Amongst Employers in BC?*
Please check one
Yes _____ No _____

Signature of Participant

__________________________________________________________________________
Date Signed

Thank you for your time. I look forward to speaking with you.

**Jennifer Diep, Master of Public Policy Candidate (2015)**
Simon Fraser University
Harbour Centre 515 West Hastings St.
Vancouver BC, V6B 5K3