Funding provided through the Canada-British Columbia Labour Market Development Agreement.

go2HR

BC Tourism Labour Shortage Economic Impact Study

Technical Report

May 2016

Prepared by Grant Thornton and Econometric Research Limited

ERL Econometric Research Limited
Economic Consultants

Grant Thornton
An instinct for growth™

May 31, 2016

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Dear Ms. Yule:

Re: BC Tourism Labour Shortage Economic Impact Study Technical Report

In accordance with the terms of our engagement, we have completed the BC Tourism Labour Shortage Economic Impact Study for go2HR. There are two reports related to this study:

- A detailed, Technical Report; and
- An abbreviated, Summary Report.

This is the Technical Report.

This report has been prepared for go2HR to demonstrate the estimated impacts resulting from tourism labour shortages in British Columbia. The information contained within this report should not be used for any purpose other than that disclosed herein.

We thank you for your co-operation and assistance during this assignment and appreciate the opportunity to work with you. If we may be of any further assistance, please contact us at your convenience.

Yours sincerely,

Doug Bastin, CMC
Partner, Grant Thornton Consulting

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Acknowledgements and Disclaimer

Acknowledgements

go2HR wishes to acknowledge the tremendous efforts of the many individuals and organizations from across British Columbia that contributed to this study. The Sector Labour Market Partnerships Program and the Ministry of Jobs, Tourism and Skills Training provided critical support throughout the process in terms of both financial and human resources. The support of tourism and hospitality sector associations and their members and stakeholders was invaluable. These individuals provided insights with regard to the extent of labour shortage issues and their implications on businesses throughout the province. This information was provided both through interviews and participation in an industry-wide on-line survey. Appendix D provides a list of the associations and regional destination marketing organizations that supported this study.

Disclaimer

The views and opinions expressed in this report are those of its author(s) and not the official policy or position of the Government of British Columbia.

Executive Summary

Introduction

During 2013/2014, the demand for workers in the BC tourism industry started to exceed supply significantly. The demand-supply gap is projected to increase well into the future.

Many tourism and hospitality businesses in BC have expressed considerable concern about the impacts of labour shortages on their businesses. In a 2014 study, the following types of impacts resulting from labour shortages were reported: [1]

- Reduced customer service;
- Staff burnout;
- Lost revenue;
- Missed business opportunities;
- Increased business costs;
- Increased overtime; and,
- Reduced business hours of operations.

To date, a study that validates and quantifies the economic impacts of these shortages on the industry and the province has not been conducted. To address this, go2HR engaged Grant Thornton and Econometric Research Limited to quantify the potential economic impacts on the BC tourism industry arising from labour shortages. The study was conducted from December 2015 to May 2016. The approach entailed interviews with key associations, an province-wide industry survey and economic impact analysis using regional economic impact models.

This Executive Summary presents key findings from the study.

Overall Findings

Overall, the study confirms that BC's tourism industry is facing labour constraints that are impacting businesses. Just over 50% of those surveyed for this study indicated that they could not hire all the people they needed to run their business at full capacity and/or expand their business in 2014. Examples of how businesses were challenged emerged through interviews and the industry survey. Examples of challenges that respondents provided in their responses to open-ended questions are listed below.

- Some river rafting and kayaking operators could not offer all the trips that visitors were seeking due to a shortage of qualified guides.
- Some restaurant managers indicated that they had to close down for one shift (breakfast, lunch or dinner) or had to shut down for one extra day per week due to a shortage of servers and/or cooks.

[1] Sentis Market Research Inc., Temporary Foreign Worker Program Survey of Employers, commissioned by go2HR, September 2014.

- Some hoteliers reported that they had to shut down the wing of a hotel due to a shortage of housekeeping staff, and other hotel workers.
- Some businesses could not respond to all visitor requests, possibly missing reservations as a result.
- Some operators had to forgo opportunities to expand their business and/or open a new business due to uncertainties about their ability to hire enough staff.
- Some restaurant managers indicated that they had to turn down business, such as requests for catering services.
- Some management indicated that, due to a shortage of servers, they were forced to assist on "the floor", taking management away from key activities, such as participating in important business development activities.

The study estimates that the inability of these businesses to operate at full capacity due to labour shortages resulted in an estimated $918 to $1,030 million in lost tourism spending (or gross revenue) across the province. This, in turn, resulted in much larger losses, when indirect and induced economic impacts are considered. Impacts are also felt with regard to lost taxation revenue for all three levels of government.

Business Revenue Lost in 2014 due to Labour Shortages

Respondents were asked to estimate the amount of revenue they lost in 2014 due to the inability to hire the complement of staff they needed to meet demand for their product/services. Just over half of the respondents to this question indicated that they did lose revenue, while 49% indicated that they did not lose revenue. The table below shows the number or respondents that lost revenue, in addition to the estimated percentage of revenue lost.

Lost Revenue due to Labour Shortages (2014)

Amount of Lost Revenue (% Categories)	Response Percent (%)	Response Count (#)
0%	49.3%	216
1 - 5%	18.9%	83
6 - 10%	14.6%	64
11 - 15%	9.6%	42
16 - 20%	4.3%	19
21 - 25%	1.6%	7
26 - 30%	0.7%	3
More than 30%	0.9%	4

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N = 438

Total Tourism Impacts in BC Assuming Minimal Labour Constraints

The pivotal role tourism plays in the BC economy and its many contributions to showcasing the natural beauty and history of the province are significant. Tourism spending in BC represents "new money" that would not have been spent in BC if tourists – both residents and non-residents – were to choose to visit another destination. Their impacts are, therefore, incremental, adding to BC's Gross Domestic Product (GDP), total provincial employment, and tax revenues to all three levels of government. Highlights regarding expenditures and impacts are as follows.

- Tourist expenditures of residents and non-residents exceeded $13.9 billion in BC in 2013.
- The direct contribution of tourism expenditures to BC's GDP was over $7.3 billion in 2013 (in 2007 constant dollars and over $7.9 billion in 2013 dollars).
- More than 132,200 British Columbians owe their direct jobs to the tourism industry which paid $4.5 billion in wages and salaries, with an average annual compensation of $34,000.[2]
- The resulting contribution to the provincial treasury was a substantial $980 million.

The direct contributions of the tourism industry, however large and substantive they are, fall short of capturing the full and comprehensive contributions of this industry. A comprehensive accounting of the tourism value in BC would also include the indirect and induced contributions of the industry as these typically exceed the direct contributions.

The first analysis presented is the total economic impact of tourism, including the direct, indirect and induced impacts, assuming minimal labour constraints. The economic and employment impacts in 2013 are shown below. The initial tourism expenditure of $13.9 billion generates considerably greater impacts when the indirect and induced impacts are considered, as shown below.

Economic Impacts of BC Tourism (millions of 2013 dollars)

Initial Expenditure	$13,900
Value Added (GDP)	
Direct	$7,908
Indirect & Induced	$8,006
Total	$15,914
Gross Output	
Direct	$13,900
Indirect & Induced	$17,159
Total	$31,059
Wages & Salaries	
Direct	$4,488
Indirect & Induced	$6,799
Total	$11,287
Employment	
Direct	132,000
Indirect & Induced	153,475
Total	285,475
Taxes	
Federal	$3,808
Provincial	$1,917
Local	$353
Total	$6,078
Imports	
From Other Provinces	$1,881
From Other Countries	$1,951
Total	$3,832

Source: Econometric Research Limited, 2016.

[2] This average annual compensation accounts for full-time and part-time jobs.

The indirect and induced impacts of tourism, as shown above, are large and relevant. Neglecting these impacts would understate the contributions of tourism and could present a truncated picture of the importance of the sector and its relevance to the economy and the people of BC.

Tourism Economic Impacts and Losses Based on Labour Constraints

This analysis focuses on the relevant results from the online industry survey that delineated and quantified the magnitude of business revenue losses associated with labour shortages. These revenue losses were estimated by survey respondents based on their inability to operate at full capacity due to staffing shortages, therefore forcing them to turn away business (and revenue). Based on the estimated lost revenue, the study team estimated the direct, indirect and induced impacts associated with the lost business revenue.

The analysis was conducted by region, by sector and by year-round versus seasonal businesses. Key findings resulting from the analysis are as follows.

- Compared to medium-sized businesses, small and relatively large businesses demonstrated higher revenue losses attributed to labour shortages.
- When grossed up to the provincial level, business revenue losses were largest in the Vancouver Coast and Mountains Region, followed by the Thompson Okanagan Region, the Northern BC Region, the Kootenay Rockies Region, the Vancouver Island Region and, lastly, the Cariboo Chilcotin Coast Region. The Vancouver Island Region reported the lowest per business revenue loss resulting from labour shortages. This is consistent with industry feedback, which indicated that the labour shortage issue does not seem to be as serious in the Vancouver Island Region, relative to the other regions.
- Based on the online survey results, the food and beverage sector experienced the largest percentage revenue losses as a result of labour constraints. The average percentage losses by sector were:

Food and beverage services:	6.33%	Accommodation:	3.56%
Recreation and entertainment:	4.60%	Snow sports:	3.47%
Transportation:	4.11%	Travel services:	3.36%

- When analysed on a year-round versus seasonal business basis, the seasonal businesses lost more revenue due to labour shortages on a percentage basis, while the year-round businesses lost more revenue due to labour shortages on an absolute basis:
    - Year-round operators lost an estimated $947.72 million in direct gross revenue (initial expenditure) – representing average losses of 8.3%; and,
    - Seasonal operators lost an estimated $238.25 million in direct gross revenue (initial expenditure) – representing average losses of 9.6%.

The resulting estimated direct, indirect and induced impacts of the reported revenue losses for BC due to labour shortages are shown below.

Economic Impacts of Revenue Loss Due to Labour Shortages in BC

Lost Revenue (Expenditures) Due to Labour Constraints and Resulting Lost Economic Impacts (millions of 2013 dollars)	
Initial Expenditure	$1,030
Value Added (GDP)	
Direct	$586
Indirect & Induced	$596
Total	$1,183
Gross Output	
Direct	$1,030
Indirect & Induced	$1,272
Total	$2,302
Wages & Salaries	
Direct	$371
Indirect & Induced	$469
Total	$840
Employment	
Direct	10,114
Indirect & Induced	11,213
Total	21,327
Taxes	
Federal	$286
Provincial	$144
Local	$26
Total	$456

Source: Econometric Research Limited

Conclusions

A total of 462 valid responses were obtained through the survey. The survey responses represented a range of business sizes and types throughout all regions of BC. Almost three quarters (73.8%) of respondents operated on a year-round basis versus 26.2% that operated seasonally.

Just over 50% of respondents indicated they were not able to hire all of the people they needed in 2014. The majority of unfilled positions in the Lower Skilled Worker category (56.6%), while 30.7% were in the Higher Skilled Worker Category and 12.6% were in the Manager category.

The most commonly-cited implications of the inability to hire enough people were:

71.4%	Staff burn-out	47.8%	Missed business opportunities
70.5%	Hired under-qualified staff	42.2%	Increased business costs
54.6%	Reduced customer services	35.7%	Increased overtime

Over 11% of respondents indicated that they considered closing their business altogether due to the labour constraints they experienced in 2014. Just over 50% of respondents indicated they lost revenue in 2014 due to labour constraints.

- 33.5% of respondents lost in the range of 1% – 10% of total revenue.
- 15.5% of respondents lost in the range of 11% – 25% of total revenue.

The inability of businesses to operate at full capacity due to labour shortages resulted in an estimated $1,030 million in lost tourism spending (or gross revenue) across the province. This, in turn, resulted in much larger losses, when indirect and induced impacts were considered. Impacts were also felt with regard to lost taxation revenue for all three levels of government.

In conclusion, the survey results confirmed the labour shortage issues that tourism industry stakeholders have been articulating in recent years, and validated the issues documented in the *British Columbia Tourism Labour Market Strategy (2012 – 2016)*. The economic impact analysis conducted through this study further demonstrated that the revenue (direct tourism spending) losses that operators and businesses are experiencing due to labour shortages are having large and detrimental impacts on the BC economy, particularly when the indirect and induced impacts are also shown. Based on these findings, go2HR and its stakeholders need to collectively define the next steps required to address the tourism industry's labour market constraints.

Introduction

Background

During 2013/2014, the demand for workers in the BC tourism industry started to exceed supply significantly. The demand-supply gap is projected to increase well into the future.

Many tourism and hospitality businesses in BC have expressed considerable concern about the impacts of labour shortages on their businesses. In a 2014 study, the following types of impacts resulting from labour shortages were reported: [3]

- Reduced customer service;
- Staff burnout;
- Lost revenue;
- Missed business opportunities;
- Increased business costs;
- Increased overtime; and,
- Reduced business hours of operations.

Anecdotal stories regarding the economic impacts of labour shortages are becoming apparent at tourism association meetings and in the media. To date, a study that quantifies the economic impacts of these shortages on the entire industry and the province has not been conducted. In light of this, go2HR engaged Grant Thornton and Econometric Research Limited to quantify the potential economic impacts on the BC tourism industry, resulting from labour shortages.

Scope of Work

The scope of work conducted to support this project included the following tasks:

- Reviewed secondary sources of economic impact data to provide further context to the study;
- Evaluated potential methods of research;
- Selected a primary research methodology that included conducting stakeholder interviews and an online survey;
- Conducted research and an economic impact analysis;
- Prepared a draft and final Technical Report; and,
- Prepared an abbreviated version of the report, the Summary Report, to be used for communication purposes.

[3] Sentis Market Research Inc., Temporary Foreign Worker Program Survey of Employers, commissioned by go2HR, September 2014.

There are two reports related to this study:

- A detailed, Technical Report; and
- An abbreviated, Summary Report.

This is the detailed Technical Report.

Limitations

The following limitations have guided our approach and the findings of our analysis for this economic impact study.

- An effort has been made to ensure that the lost revenues and impact estimates in the report are made in a conservative manner (e.g., estimates were not provided for the longer-term) to avoid overstating the results.
- Benefits are not always easily expressed in monetary terms. For example, social and cultural benefits and costs from tourism are not easily measured. We focus in this report on the quantitative impacts.
- Due to fiscal and time constraints, our research program for this study did not include randomly selected surveys to British Columbia (BC) visitors or to business operators in BC communities to determine spending or revenue loss patterns. Assumptions were made and estimates were based on a limited number (462) of survey responses obtained through an online survey. The survey was conducted across BC, with the assistance of relevant associations that provided the online survey link to their members and/or stakeholders. There is no claim here that the sample results are unbiased representations of the underlying populations. The results based on these surveys should therefore be treated with caution, particularly where the sample size was small (e.g., for the regional and sectoral results).
- The impact results are based on data compiled from a variety of sources, including the results of the online survey. The margin of error is different for each set of data and application; therefore, the intention of this caveat is to draw the attention of the reader to the existence of possible margins of error and to caution them about their existence.
- The impact model used is a simulation model and, as such, it creates a theoretical picture of the future of the provincial and regional economies; it does this on the basis of a series of assumptions, which may or may not hold true over time.
- A scenario approach was adopted to deal with uncertainty. No attempt was made to estimate the probability density functions and levels of confidence. Instead a few scenarios were constructed to probe the sensitivity of the results to different parameter estimates.

Study Approach

Introduction

This study entailed conducting primary and secondary research to estimate the economic impacts of tourism in BC for 2013, the most recent year for which data could be obtained. Against these benchmark estimates, Grant Thornton and Econometric Research Limited quantified and simulated the impacts of labour constraints (shortages) on key industry performance measures.

Study Approach

The overall approach consisted of four phases.

PHASE 1: Planning & Start-Up

- During the start-up meeting, the project scope, deliverables, key tourism stakeholders/sector associations to be involved in the study, logistics, timing, secondary data, and reporting arrangements were clarified and confirmed.
- A detailed project plan was prepared and approved by go2HR that included dates for deliverables.
- Relevant secondary data was reviewed, and key data gaps were identified.
- A review of all BC tourism expenditure information by visitor origin and commodity available from Statistics Canada for 2012 and 2013 was conducted to identify and validate the available expenditure data. This data was then harmonized with the available information on visitor origin and expenditures by tourism sector in BC.
- At the completion of this review, the relevance of the available data, in addition to the key data gaps that need to be filled through primary data collection, was summarized. Particular attention was directed toward the data and information required to conduct the economic impact analysis under conditions of labour shortages.
- Key data gaps were reviewed with go2HR and key stakeholders, as needed.
- A research methodology was designed to collect primary data that included telephone interviews with key tourism stakeholders/sector representatives, an online survey instrument, target survey recipients, and survey plan. This methodology addressed the key gaps identified during the review of secondary data.

PHASE 2: Primary Data Collection and Validation

- Telephone interviews were conducted with over 30 representatives from regional and municipal destination marketing organizations and tourism sector associations to gain a better understanding how labour constraints (shortages) are impacting businesses and tourism operations. A list of the representatives interviewed is provided in Appendix A.

- An online survey was designed and implemented to collect primary data from tourism businesses and organizations across the province. A copy of this survey is provided in Appendix B.
- The survey results were then cleaned, validated, filtered and analyzed to support the economic impact analysis.

PHASE 3: Economic Impact Analysis

- The economic impact analysis was conducted using two key assumptions.
    1. *Assuming there were no labour constraints* – This was completed by industry sector, at a provincial level, regional level and on a year-round versus seasonal basis (e.g., businesses that operate year-round versus businesses that operate on a seasonal basis). The year used was 2013, as this was prior to the year that industry started experiencing significant labour constraints and for which data was available from BC Bureau of Statistics.
    2. *Assuming various levels of labour constraints* – This was completed using both general assumptions about labour shortages based on studies by the Conference Board and RKA and the results of the primary survey. This was completed at the sector level, at the provincial level, at the regional level and on a year-round versus seasonal basis.
- A more detailed methodology for the economic impact analysis is provided in the Economic Impact Analysis section of this report.

PHASE 4: Reporting

- A detailed Technical Report was prepared that documents the study's methodology, research and the results of the economic impact analysis; the Technical Report:
    - First, provides a summary of the results of the on-line industry survey; and,
    - Second, presents the results of the economic impact analysis.
- A Summary Report was also prepared.

go2HR Tourism Labour Shortage Economic Impact Survey Highlights

Introduction

To help understand and measure the economic impact of labour shortages in BC's tourism industry, an online survey[4] was administered to tourism operators and businesses across the province. The survey was conducted on-line from January 12th to February 19th, 2016. A copy of the survey is provided in Appendix B.

The purpose of the survey was to:

- Gain an understanding of the extent of labour shortages across the province, regionally and by sub-sector;
- Better understand how labour shortages are impacting tourism and hospitality operators and businesses; and,
- Obtain data from businesses and operators regarding the impacts (numbers of positions not filled, types of positions not filled, estimated revenue lost, etc.) to use as inputs in the economic impact modelling (the results of the modelling are presented later in the report).

The survey requested data and information for 2014 as it was felt that requesting 2015 data as early as January 2016 would be challenging for many operators.

Highlights from the survey are presented in this section under the following headings:

- Profile of Respondents;
- Hiring Challenges; and,
- Impacts of Labour Shortages.

[4] go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

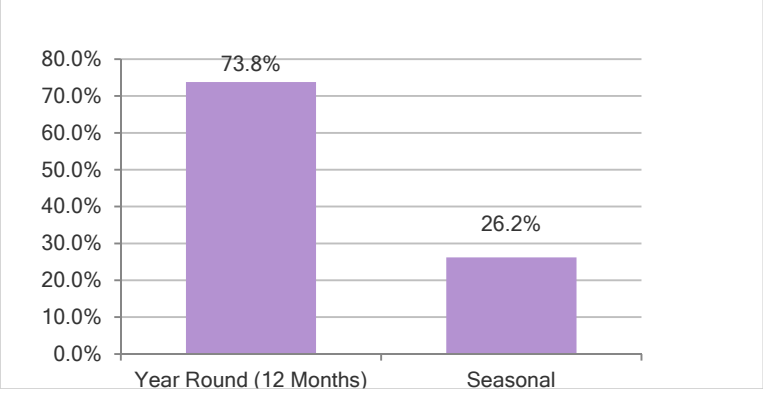
Profile of Respondents

Over 600 survey responses were initially received. After the responses were cleaned, validated and filtered, a total of 462 valid responses were used for this study.

Year Round versus Seasonal Operations

Almost three quarters (73.8%) of respondents operated on a year-round basis versus 26.2% that operated seasonally. Of the businesses that operated seasonally, the majority of respondents indicated they operate in one or more of the following months: May, June, July, August and September.

Figure 1: Percentage of Respondents that Operate Year Round and Seasonally

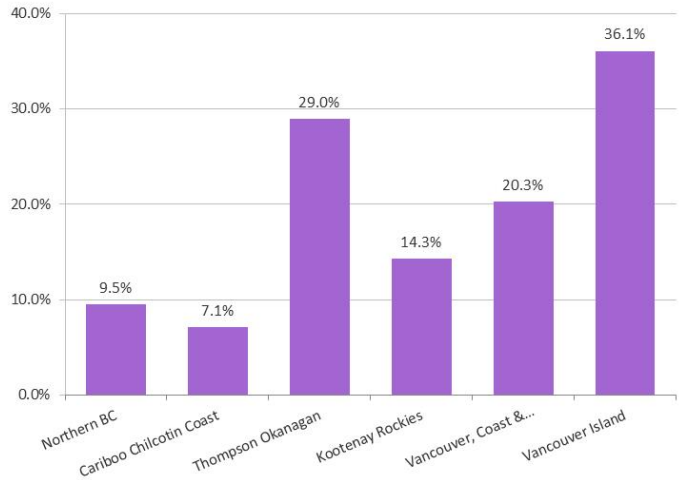


Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N = 462

Tourism Regions

Respondents were asked to indicate in which of the six tourism regions they operate. Note that 29 of the respondents operate in more than one region, which explains the total percentage exceeding 100%.

Figure 2: Regions in which Businesses Operate



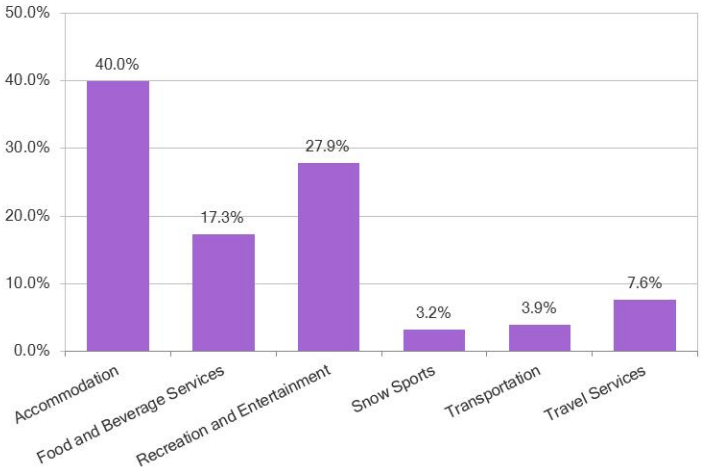
BC Tourism Regions

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N= 462

Tourism Sectors

Figure 3 provides a breakdown of respondents by each of the six sectors that go2HR uses for its tourism sector classification. 40% of respondents operate in the accommodation sector, followed by recreation and entertainment and food and beverage. Note that respondents were asked to indicate the "primary" sector in which they operate. For example, a sport fishing operation would indicate that its primary sector is recreation and entertainment, even though the operation may also offer overnight accommodation and food and beverage services.

Figure 3: Primary Sector (go2HR sector categories)

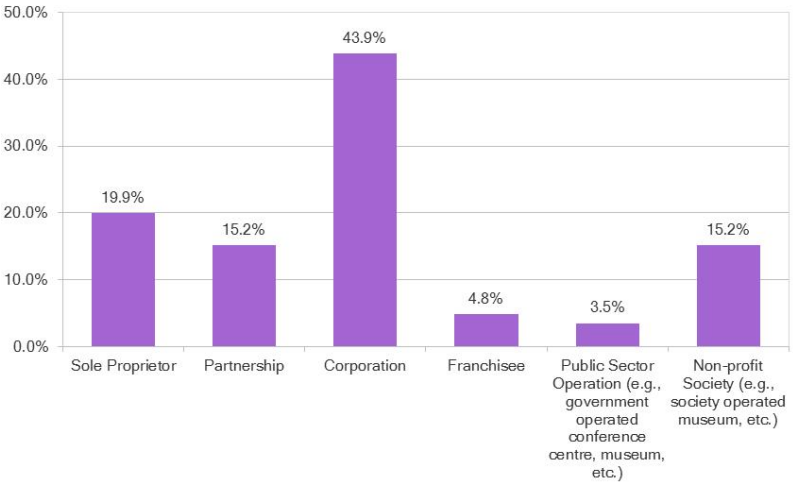


Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N= 462

Business Type

Over 43% of respondents represented private corporations, while close to 20% represented sole proprietorships, and 15.2% represented a partnership and non-profit society respectively.

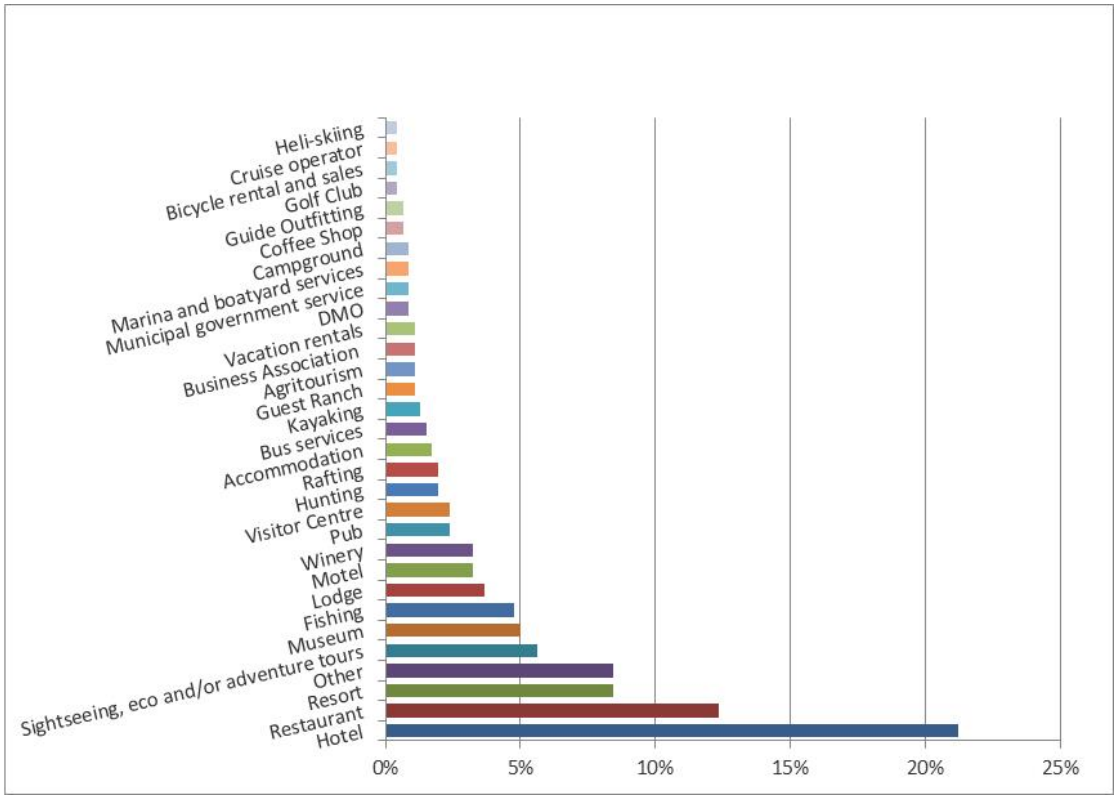
Figure 4: Business Type



Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N= 462

Respondents were asked to further describe the type of business or operation they represent. The range of operations is shown below.

Figure 5: Range of Business Operations



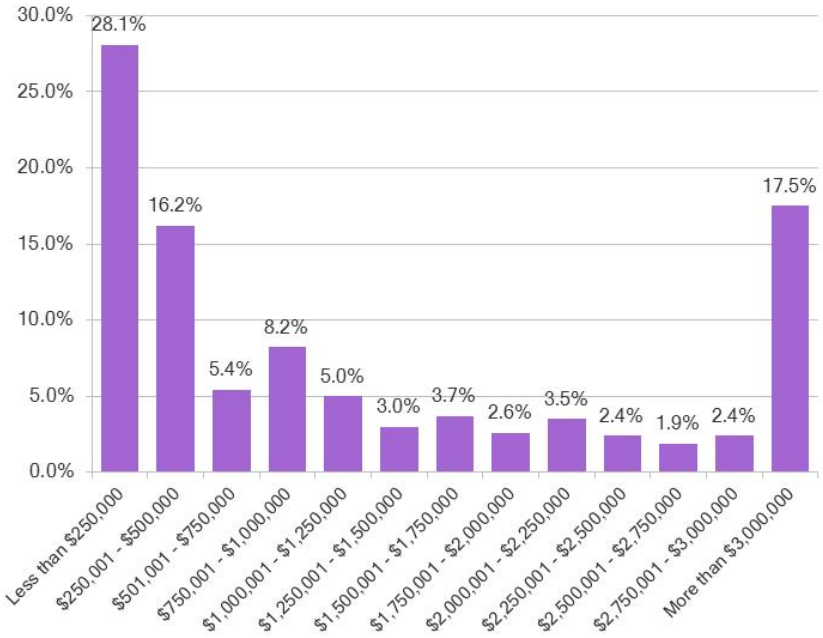
Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

N= 462

Gross Revenue

Respondents were asked to indicate their gross annual revenue by selecting the gross revenue category that applies to their business. Over 28% of respondents reported that they generate less than $250,000 in gross revenue annually, while over 17% reported that they generate over $3.0 million in gross revenue annually. The remaining respondents (55%) generate annual gross revenue of between $250,000 and $2.75 million. This response indicates that the survey captured businesses of varying sizes based on gross revenue. Figure 6 provides a summary of respondents by annual gross revenue.

Figure 6: Annual Gross Revenue of Respondents (2014)

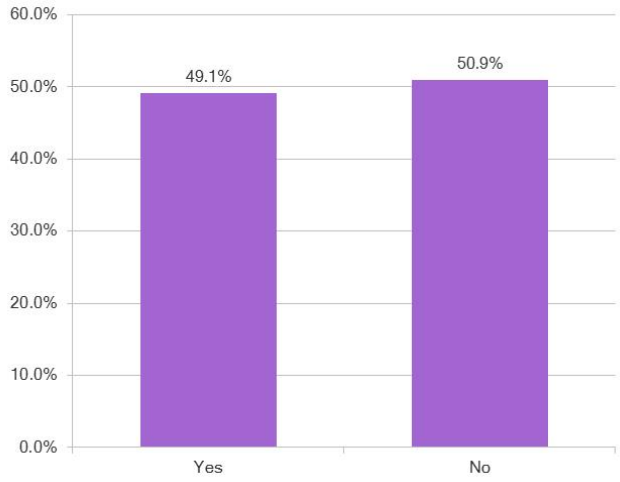


Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N= 462

Hiring Challenges

Respondents were asked if they were able to hire all the people they needed in 2014. The response was split almost equally, with 50.9% stating they were unable to hire all the people wanted, and 49.1% indicating that they were able to hire all the people they wanted in 2014.

Figure 7: Ability to Hire All Staff Required (2014)



Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N= 462

Number and Types of Unfilled/Vacant Positions

A total of 225 respondents were unable to hire additional staff in 2014. The table below highlights the number of respondents that were unable to hire additional staff based on the groupings by number of employees they could not hire. 56.45% of respondents were unable to hire between 1-4 staff. The average within this grouping was approximately 2.25 employees. 16% of respondents needed between 5-9 employees while 19.56% needed between 10-24 employees. The average within these groupings was 6.02 and 12.93 respectively. Only three respondents were in need of 100 or more employees.

Table 1: Number of Unfilled Positions (2014)

Number of People Unable to Hire	Number of Respondents	Proportion of Total	Average Number of People Unable to Hire
1-4	127	56.45%	2.25
5-9	36	16.00%	6.02
10-24	44	19.56%	12.93
25-49	13	5.78%	30.15
50-99	2	0.89%	63.00
100+	3	1.33%	133.33
	225	**100%**	

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N = 225

The majority of unfilled positions were estimated to be in the Lower Skilled Worker category (56.6%), while 30.7% were in the Higher Skilled Worker Category and 12.6% were in the Manager category; additional detail on vacant types is provided in

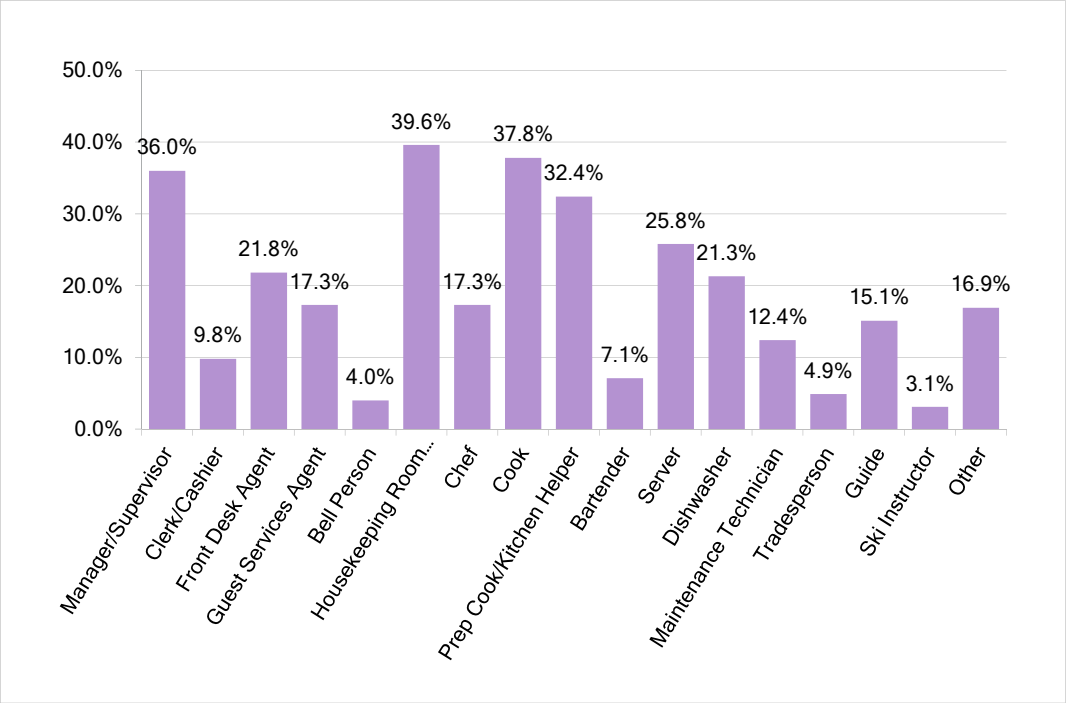
Table 2: Unfilled Positions by Category (2014)

Unfilled Position Categories	Number of Unfilled Positions (#)	Percent of Unfilled Positions (%)
Managers[5]	225	12.6%
Higher Skilled Workers[6]	619	30.7%
Lower Skilled Workers[7]	1142	56.6%
Total	**2016**	**100.0%**

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N = 225

[5] Examples of Managers include Food and Beverage Manager, Front Office Manager, Human Resources Manager, etc.
[6] Examples of Higher Skilled Workers include Ski Instructor, Chef, Pilot, Accountant, etc.
[7] Examples of Lower Skilled Workers include House Keeping Room Attendant, Bell Person, etc.

Figure 8: Types of Unfilled Positions (2014)

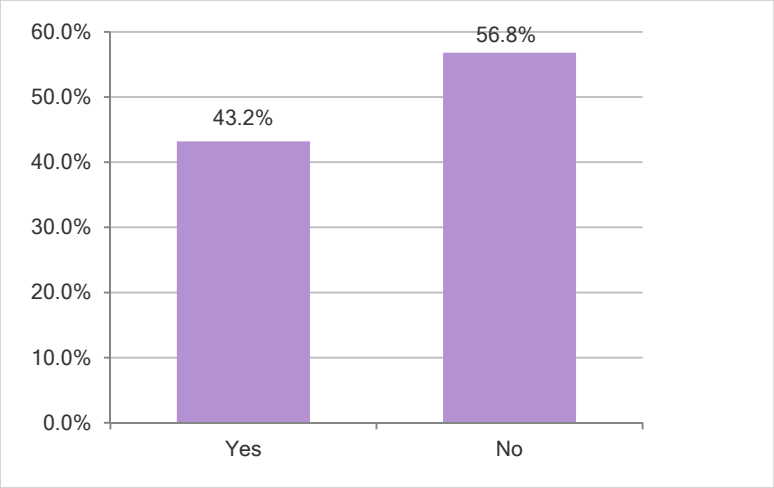


Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N = 225

Labour Shortage Before 2014

Over 56% of respondents did not encounter a significant labour shortage problem before 2014, compared to 43.2% of respondents that did. Of those that did encounter a labour shortage problem before 2014, 58.4% first encountered problems before 2012, 15.9% in 2012, and 25.6% in 2013.

Figure 9: Encountered a Labour Shortage Before 2014



Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N = 449

Employee Categories

On average, 70% of respondents' employees in 2014 were Canadians who were fully-qualified for the position. Employees that were Canadians and who were partially-qualified for the position totalled average 24% on average, followed by working holiday visa holders (on average 13%), and other (on average 10%). Temporary foreign workers made up, on average, 6% of respondents' employees in 2014.

Table 3: Employee Categories

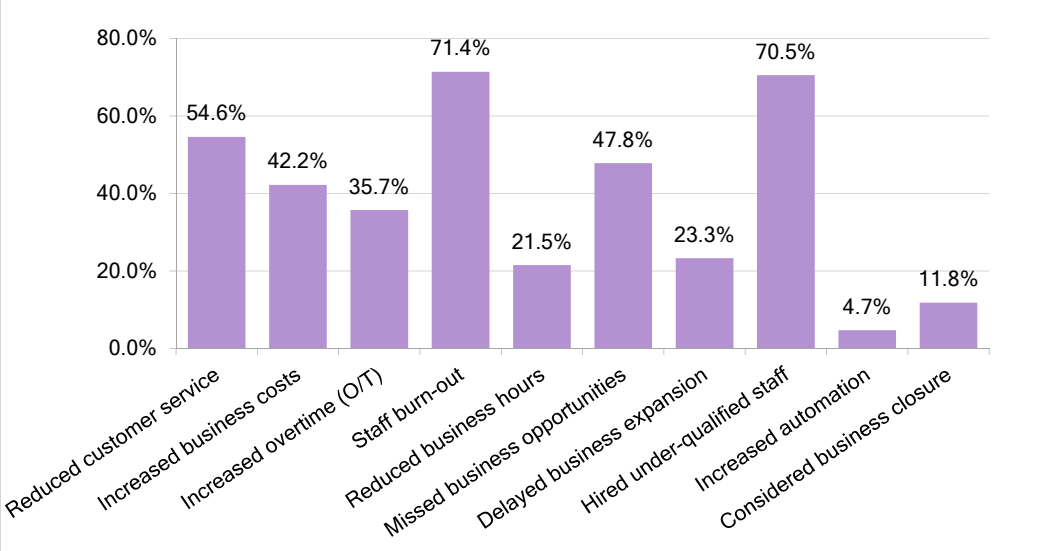
Employee Categories	Response Average (%)	Response Total (#)	Response Count (#)
Canadians who are fully-qualified for the position	69.9%	31,352	449
Canadians who are partially-qualified for the position	24.2%	5,886	243
Temporary foreign workers	5.6%	886	157
Working holiday visa holders	12.5%	2,102	168
Vacant positions	9.5%	1,241	131
Other	10.2%	498	49

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N = 462

Impacts of Labour Shortages

The most reported impacts to respondents' businesses due to the labour shortage were staff burn-out (71.4%), hiring under-qualified staff (70.5%), reduced customer service (54.6%), and missed business opportunities (47.8%).

Figure 10: Impacts due to Labour Shortages (2014)



Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N = 339

Business Revenue Lost in 2014 due to Labour Shortages

Respondents were asked to estimate the amount of revenue they lost in 2014 due to the inability to hire the complement of staff they needed to meet demand for their product/services. Just over half of the respondents to this question indicated that they did lose revenue, while 49% indicated that they did not lose revenue. The table below shows the number or respondents that lost revenue, in addition to the estimated percentage of revenue lost.

Table 4: Lost Revenue due to Labour Shortages (2014)

Amount of Lost Revenue (% Categories)	Response Percent (%)	Response Count (#)
0%	49.3%	216
1 - 5%	18.9%	83
6 - 10%	14.6%	64
11 - 15%	9.6%	42
16 - 20%	4.3%	19
21 - 25%	1.6%	7
26 - 30%	0.7%	3
More than 30%	0.9%	4

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N = 438

Conclusions

An online industry survey was conducted from January 12th to February 19th, 2016. The intention of the survey was to gain an understanding of labour shortages in BC's tourism industry to support the economic impact modelling for this study (see later sections for results of the economic impact modelling).

A total of 462 valid responses were obtained through the survey. The survey responses represented a range of business sizes and types throughout all regions of BC. Almost three quarters (73.8%) of respondents operated on a year-round basis versus 26.2% that operated seasonally. The breakdown of responses by the six sector categories used by go2HR was as follows.

- 40.0% - accommodation
- 27.9% - recreation
- 17.3% - food and beverage
- 7.6% - travel services
- 3.9% - transportation
- 3.2% - snow sports

Just over 50% of respondents indicated they were not able to hire all of the people they needed in 2014. The majority of unfilled positions were estimated to be in the Lower Skilled Worker category (56.6%), while 30.7% were in the Higher Skilled Worker Category and 12.6% were in the Manager category.

The most commonly-cited implications of the inability to hire enough people were:

- Staff burn-out: 71.4%
- Hired under-qualified staff: 70.5%
- Reduced customer service: 54.6%
- Missed business opportunities: 47.8%
- Increased business costs: 42.2%
- Increased overtime: 35.7%

Over 11% of respondents indicated that they considered closing their business due to the labour constraints they experienced in 2014. Just over 50% of respondents indicated they lost revenue in 2014 due to labour constraints.

- 33.5% of respondents lost in the range of 1% – 10% of total revenue.
- 15.5% of respondents lost in the range of 11% – 25% of total revenue.

Economic Impact Analysis Methodology

Introduction

The remainder of the report builds on the industry survey results, in addition to other baseline data and studies, to identify, quantify, and showcase the economic contributions of tourism to the provincial economy and to each of the six tourism regions[8], particularly those regions threatened by labour shortages and that have difficulties in accessing required labour with the appropriate skills. The economic impact analysis provides objective and evidence-based estimates of the economic contributions of tourism activities in the different regions and those that are currently or that likely will be threatened by labour shortages.

This section provides a description of the methodology used for the economic impact assessment, including definition of key terms. The results of the economic impact assessment are presented in the sections that follow.

Background on Tourism Expenditures

Tourists come to BC from many locations within and outside the province and country. Some stay for a short while, others for a longer period, but all spend money on food and beverage, accommodation, souvenirs and transportation in the province.

Tourist expenditures of residents and non-residents exceeded $13.9 billion in BC in 2013.[9] Most of these expenditures represent "new money" in BC that would not have been spent if tourists – including both residents and non-residents – were to visit elsewhere. Their impacts are, therefore, incremental adding to the Gross Provincial Product (GPP), total provincial employment, and tax revenues to all three levels of government.

Tourism expenditures in 2013 generated a direct contribution to BC's GDP of $7.3 billion (2007 constant dollars and over $7.9 billion in 2013 dollars), 132,200 direct jobs, $4.5 billion in wages and salaries, with an average compensation per employee of $34,000, a substantial $980 million in provincial taxes, and over $3.2 billion in export revenues.[10]

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[8] British Columbia has been divided into six tourism regions managed by Regional Destination Marketing Organizations (RDMOs) in partnership with Destination British Columbia. BC's six tourism regions are: Vancouver, Coast and Mountains, Vancouver Island, Thompson Okanagan, Cariboo Chilcotin Coast, Northern BC and Kootenay Rockies. http://www.destinationbc.ca/Programs/Regions-Communities-and-Sectors/Regional-Tourism-Programs/Regional-Partners.aspx

[9] BC Statistics, 2013.

[10] Destination British Columbia, The Value of Tourism in British Columbia (using 2013 data), 2015.

These contributions to the economy compare favourably with the contributions of other primary resource industries in BC, including forestry, agriculture and fish, and even mining, oil and gas extraction.[11]

The direct contributions of the BC tourism industry, however large and substantive they are, fall short of capturing the industry's full and comprehensive contributions to the provincial and regional economies. Comprehensive accounting of the tourism value in BC would require a full impact analysis as the indirect and induced contributions of the industry often exceed the direct contributions. Focusing solely on the direct contributions would give a truncated picture of the role and importance of tourism to the economy of the province.

This study estimates direct, indirect and induced impacts resulting from resident and non-resident tourism activity in BC.

Approach to Estimating Direct, Indirect and Induced Impacts

The economic impact analysis specifically estimates the total (direct, indirect and induced) output, employment and taxes paid to all levels of government on the economic impacts of tourism. The large indirect (secondary) and induced (tertiary) impacts define the ripple effects to be expected from any expansion or contraction in the tourism industry's products and services. While the major economic impacts will be more pronounced in the accommodation and food and beverage sectors, these impacts can also be felt in other sectors as businesses and workers affected by the impacts scale back their activities and spending in the broader economy.

Regional Input-Output Model

The consulting team, and specifically Econometric Research Limited (ERL), has developed a regional input output model based on data produced by Statistics Canada. This model is specifically designed to capture, quantify and trace impacts on income, output, and employment by sector (39 sectors) and over 10 different taxes by the levels of government collecting them.

Analysis Assuming No Labour Shortages

Benchmarking the tourism industry's contributions to the BC economy **assuming minimal labour shortages** was the first task of the analysis. Measures of tourism contributions to the BC economy went further than the direct effects and included indirect and induced impacts.

Analysis Assuming Various Levels of Labour Shortages (different scenarios)

Labour shortages were then introduced to estimate the consequences of different scenarios and alternative projections of labour shortages. When there is uncertainty about future developments (e.g., extent of labour shortages), it is best to use scenarios where the future is bracketed by a number of likely and reasonable scenarios. While it is difficult to assign any probability measure to these scenarios, they remain useful in outlining a menu of likely eventualities. This study developed three scenarios specifically for this purpose:

[11] BC Statistics (http://www.bcstats.gov.bc.ca/StatisticsBySubject/Economy/EconomicAccounts.aspx, 2002-2012, chained 2007$).

- **Scenario based on projected labour shortages**: The estimated and projected labour shortages in the tourism industry by region and sector that were prepared by Roslyn Kunin & Associates, Inc. (RKA, Inc.)[12] based on the BC Labour Market Scenario Model[13] and the Conference Board of Canada 2011 Update[14].
- **Scenario based on the go2HR Tourism Economic Impact Labour Shortage survey results**: The survey results were profiled in the previous section of this report[15]. The survey results were used to identify and estimate tourism revenues lost by season, region and sector, and the resulting losses in direct, indirect and induced impacts.
- **An optimal adjustment scenario:** The optimal adjustment scenario conducts analysis to estimate the shadow wage that should be paid by tourism businesses in order to access labour while competing for this labour with other industries.[16]

Economic Impact Analysis Methodology

The methodology used in the economic impact analysis is based on a hybrid integration of:

- Input-output analysis;
- Location theory; and,
- Relevant segments of typical macroeconomic models.

Statistics Canada generates the interprovincial input output tables and the BC supply, use and final demand data are incorporated into the model. [17]

Location theory is used to regionalize the model (enabling analysis for the six tourism regions) as Statistics Canada only generates the province-wide data. A simple consumption function is incorporated as well as an import equation and a tax function in order to generate the induced impacts.

A dollar spent by a tourist on food and beverage or accommodation circulates and re-circulates within the economy, multiplying the effects of the original expenditures on overall economic activity. This process is referred to as the economic multiplier effect. It operates at several levels, as described below.

- The initial tourist expenditures on products and services are generally referred to as the **direct costs** of operation and their effects are referred to as the **initial (direct) effects**.
- Subsequent purchases by suppliers of materials and services to sustain the original and derivative expenditures are called the **indirect effects**.

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[12] Roslyn Kunin & Associates, Inc. 2013. Regional Tourism and Hospitality Industry Labour Demand and Supply Projections. Commissioned by go2HR. A series of six reports; one report for each tourism region.

[13] Statistics Canada (2011). Human Resource Module of the Tourism Satellite Account, 2010. Income and Expenditure Accounts Technical Series. Catalogue no. 13-604-M-no.069. http://www.statcan.gc.ca/pub/13-604-m/13-604-m2011069-eng.htm (accessed October 2011)

[14] Canadian Tourism Human Resource Council (CTHRC), Conference Board of Canada (CBoC). 2012. The Future of Canada's Tourism Sector: Shortages to Resurface as Labour Markets Tighten.

[15] go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

[16] The shadow price (wage) is the contribution to GDP that would be made by relaxing the labour constraint by one labour unit. It measures the Marginal Product of the additional worker.hired.

[17] Supply, use and final demand are tables that Statistics Canada produces the IO data for BC. These are used in the economic impact model prepared by Economic Research Limited.

- The **induced effects** emerge when workers in the sectors stimulated by initial and indirect expenditures spend their additional income on consumer goods and services.

The impact model used is a special and proprietary application of an interregional impact model (RIM: Canada) developed by ERL. It is a unique model in that it captures the economic impact of different activities at the local level, the provincial level and the national level. The local impacts are a special feature of the ERL model that few other systems can duplicate.

The model utilizes a large set of economic and technical databases besides the interprovincial input output tables. A short list includes employment by sector, taxes by type of tax and the level of government collecting it, prices of products, and location coefficients.

The expected impacts are estimated in terms of:

- BC GDP (value added or income);
- Total gross output (sales);
- Wages and salaries;
- Employment;
- Taxes by level of government and in terms of five major tax categories; and,
- Imports.

The output and employment impacts are allocated over the standard 39 sectors of Statistics Canada's Input-Output model for BC.

Some of the key impact indicators generated by these models are defined below to assist the reader in interpreting the results of the economic impact analysis.

- **Value Added (GDP)** – This represents net output generated by the initial expenditures in the province. It is typically the sum of wages, rent, interest and profits in addition to indirect business taxes and depreciation minus subsidies.
- **Employment** – This refers to the total jobs generated by the activity expenditures.
- **Taxes** – Our impact system generates estimates for a large number of taxes (income taxes, goods and services tax (GST), provincial services tax (PST), liquor and tobacco taxes, and others), each of which is linked with the level of government receiving it. For example, the Federal government receives the proceeds from the GST, the Provincial government receives the tobacco and liquor taxes and the PST, and the local governments receive the property and business tax.
- **Imports** – These represent the goods and services acquired from outside the province to sustain the activities of the facilities. They essentially represent leakages from the province.
- **Multipliers** – These are summary measures that represent the division of the total impacts (direct, indirect and induced) by the initial expenditures. For example, the income multiplier associated with the total operational expenditures of a farm is calculated by dividing the total

income (value added) impact by the initial operating expenditures. The only exception is that of the employment multiplier where total employment is divided by direct employment in order to preserve the common units.

Economic impact analysis is the appropriate mathematical tool for quantifying the economic impacts of tourism expansions and/or contractions given its capacity to model the patterns and magnitudes of interdependence among sectors and activities. It is one of several social accounting systems that can be used to evaluate programs, projects and activities in terms of a suite of non-market criteria. Impact analysis is typically predicated on three fundamental propositions that are particularly relevant to this study:

- Regardless of the inherent value of primary activities such as the creation of employment or the showcasing of BC's natural beauty and culture, these activities generate socio-economic consequences that are important to regions, communities and provincial policy makers. These impacts go beyond the customary outcomes of profits or returns on investment.
- These socio-economic impacts are quantifiable and can be measured and compared within the same platform.
- Economic impacts are only partially captured by assessing the outcomes generated by direct expenditures and impacts. The economy is a complex whole of interdependent and interacting activities; there are significant indirect and induced impacts associated with the direct expenditure that should be quantified and included in the assessment of the contributions of activities and sectors. These indirect and induced impacts are often larger than the direct impacts.

Total Tourism Impacts (2013)

Introduction

This section presents the total economic impact of BC's tourism industry assuming minimal labour constraints. It presents direct, indirect and induced impacts for 2013. It is important to understand the total impacts – direct, indirect and induced – before the labour constraints became pronounced (e.g., before 2014). This, in turn, enables a comparison to the total expected losses – direct, indirect and induced – resulting from labour shortages, which are presented in the subsequent sections of the report.

Total Tourism Impacts (direct, indirect and induced)

When the total contributions of tourism to the BC economy are measured, the following results emerge; see **Table 5** for more detailed results.

- Total income of BC is permanently increased by over $15.9 billion annually in 2013 prices. The direct income increase was over $7.9 billion, while the indirect, and induced income increases were over $8.0 billion.
- Wages and salaries in BC attributed to tourism in 2013 were estimated to be nearly $11.3 billion. The direct wages generated by tourism totalled approximately $4.5 billion, and the indirect and induced wages were approximately $6.8 billion.
- Average direct labour compensation (direct effective wage) per position was approximately $34,000, whereas the total effective wage was over $39,537. The indirect and induced wages and salaries exceeded those paid to direct labour. This is typical of tourism employment; many higher paying jobs are observed in the supporting sectors that meet the direct requirements of tourism.
- A total of 285,475 BC residents owe their jobs to the tourism industry. Direct employment impacts account for 132,000 jobs, whereas indirect and induced employment represents 153,475 jobs.
- Approximately $6.1 billion in taxation revenue accrued to all three levels of governments on account of the total impacts of tourism. The provincial government added over $1.9 billion in 2013 to its revenues on the tourism impacts, whereas the federal government added $3.8 billion and local government in BC collectively added $353 million.

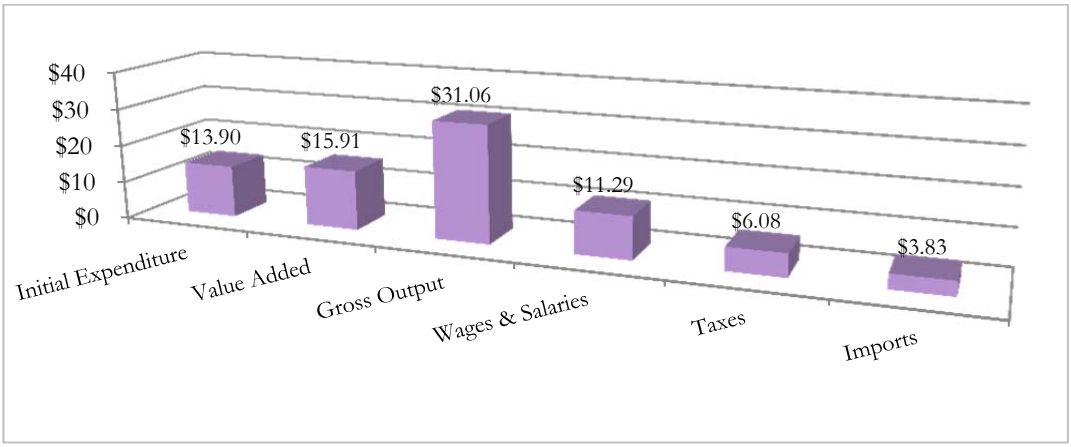
The indirect and induced impacts of tourism are large and relevant. Neglecting these impacts would understate the contributions of tourism and could present a truncated picture of the importance of the industry and its relevance to the economy and people of BC.

Table 5: Economic Impacts of BC Tourism (millions of 2013 dollars)

Initial Expenditure	$13,900
Value Added	
Direct	$7,908
Indirect & Induced	$8,006
Total	$15,914
Gross Output	
Direct	$13,900
Indirect & Induced	$17,159
Total	$31,059
Wages & Salaries	
Direct	$4,488
Indirect & Induced	$6,799
Total	$11,287
Employment	
Direct	132,000
Indirect & Induced	153,475
Total	285,475
Taxes	
Federal	$3,808
Provincial	$1,917
Local	$353
Total	$6,078
Imports	
From Other Provinces	$1,881
From Other Countries	$1,951
Total	$3,832

Source: Econometric Research Limited, 2016.

Figure 11: Economic Impacts of BC Tourism (billions of 2013 dollars)



Source: Econometric Research Limited, 2016.

Taxation Revenues by Level of Government and Tax Category

All three levels of government collect tax revenues as a result of the tourism spending (see **Table 6** and **Figure 12**). The federal government receives the majority of these tax revenues (62.6%), but both the provincial (31.5%) and local governments (6%) derive significant tax revenues as well. Personal income taxes account for the largest shares of revenues (38.6%), but other sources are also significant generators such as corporate profit taxes (23.4%), GST (6.7%) and the PST (9.3%).

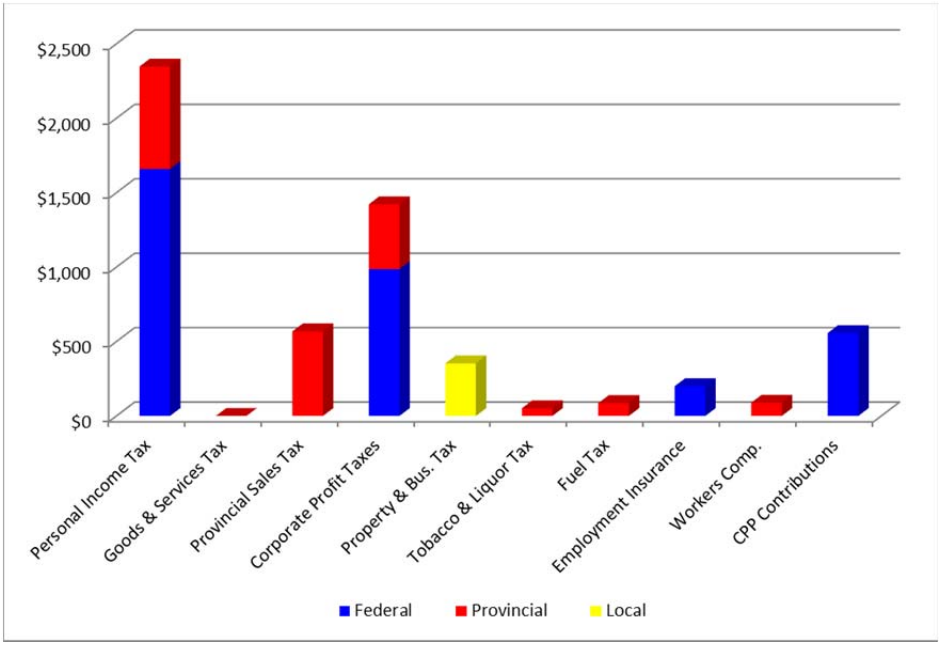
A number of taxes are included in the tables because these taxes are relevant to tourism activity and are particularly sensitive to tourism expenditures. These include tobacco and liquor taxes ($51 million) and fuel taxes ($86 million). Employment insurance taxes ($200 million), workers' compensation ($89 million) and Canadian Pension Plan (CPP) contributions ($557 million) are included to provide a broader perspective on the contribution of tourism sectors and activities to government finance.

Table 6: Tax Impacts of BC Tourism (millions of 2013 dollars)

	Federal	Provincial	Local	Total
Personal Income Tax	$1,659	$688	$0	$2,347
Goods & Services Tax	$405	$0	$0	$405
Provincial Sales Tax	$0	$568	$0	$568
Corporate Profit Taxes	$987	$435	$0	$1,422
Property & Bus. Tax	$0	$0	$353	$353
Tobacco & Liquor Tax	$0	$51	$0	$51
Fuel Tax	$0	$86	$0	$86
Employment Insurance	$200	$0	$0	$200
Workers Comp.	$0	$89	$0	$89
CPP Contributions	$557	$0	$0	$557
Total	$3,808	$1,917	$353	$6,078

Source: Econometric Research Limited, 2016.

Figure 12: Tax Impacts of BC Tourism (millions of 2013 dollars)



Source: Econometric Research Limited

Tourism Employment Impacts by Sector

Direct employment impacts are concentrated in few tourism sectors but the inclusion of indirect and induced employment provide a more diversified pattern where many sectors that are typically thought to be remotely connected to tourism (repairs and maintenance, office and administrative services, manufacturing, education, etc..) show relatively high levels of employment (see **Table 7** and **Figure 13**).

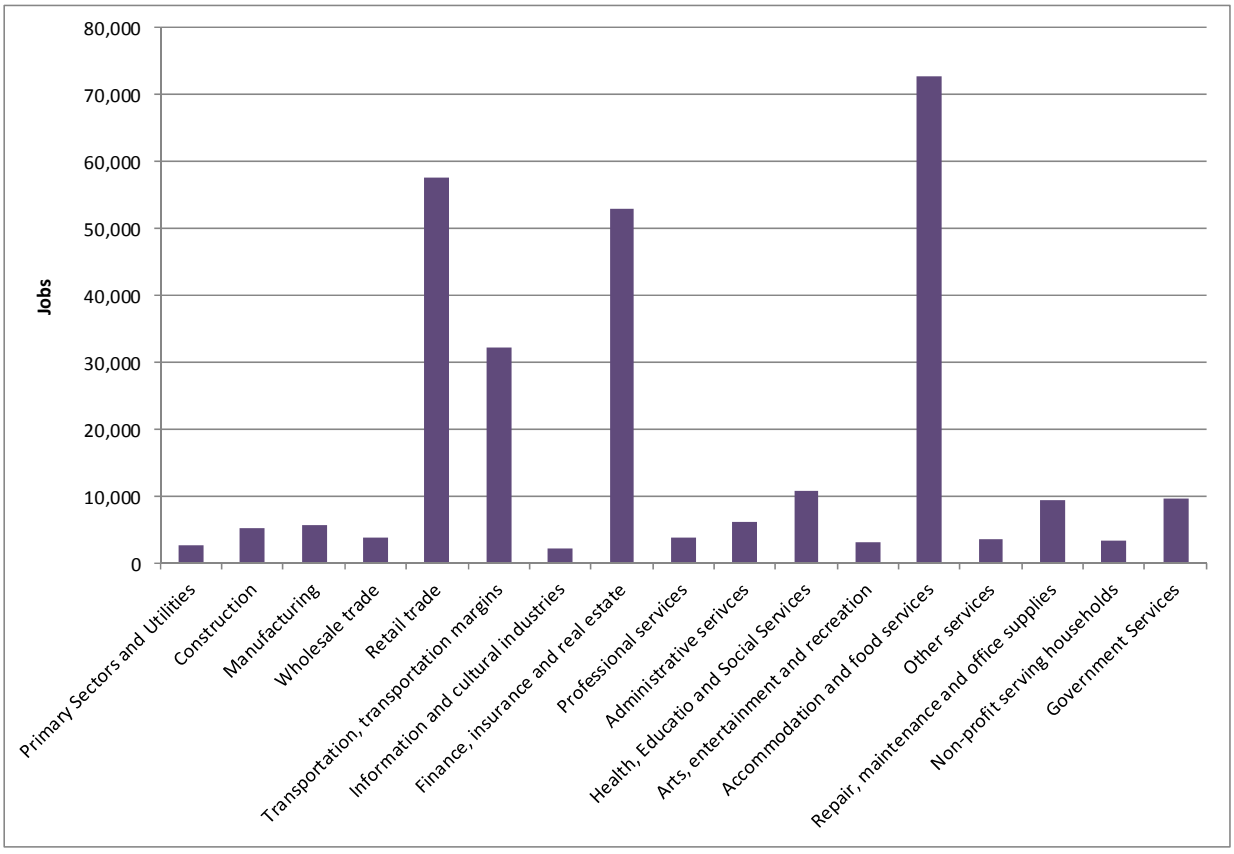
- Employment impacts of tourism are diffused throughout the economy. Almost all sectors show some employment impacts. Naturally employment in accommodation and food services, transportation, finance and insurance and retail trade are more pronounced.
- The largest shares are naturally in the service sectors, particularly in the accommodation and food services sector, in retail trade, in financial and insurance services, and in transportation and storage. The manufacturing sector also shows recognizable impact. Agriculture employment impact is not particularly high, but it is part of the employment spectrum supported by tourism expenditures.
- The spread of impacts into primary sectors and manufacturing sectors arise on account of the indirect and induced impacts as incomes are generated and spent by households on their typical consumption bundles.
- The employment shares by sector are revealing. Most of the employment impacts are, not surprisingly, in the service sectors with approximately 65% of the total employment impacts; accommodation services account for over 25.4% of employment; while manufacturing employment shows a share of 2%. The low share of manufacturing in total employment impacts is the result of the higher capital intensity of the tourism industry and its high import content. The remainder of the employment impacts are small and spread over transportation and storage (11.3%) and the primary sectors (1%).

Table 7: Economic Impacts of BC Tourism (Jobs)

Crop and animal production	1,137	Forestry	585
Fishing, hunting	56	Support for agriculture and forestry	75
Mining, quarrying, oil and gas	265	Utilities	606
Residential construction	0	Non-residential construction	0
Engineering construction	0	Repair construction	4,735
Other construction	403	Manufacturing	5,774
Wholesale trade	3,747	Retail trade	57,711
Transportation, transportation margins	32,322	Information and cultural industries	2,299
Finance, insurance and real estate	52,975	Owner occupied dwellings	0
Professional services	3,920	Administrative services	6,177
Educational services	610	Health care and social assistance	10,233
Arts, entertainment and recreation	3,151	Accommodation and food services	72,676
Other services	3,591	Repair, maintenance and office supplies	9,404
Non-profit serving households	3,316	Government education services	5,429
Government health services	834	Other federal government	649
Other territorial government	1,652	Other municipal government	1,065
Other aboriginal government	75	**Total**	**285,475**

Source: Economic Research Limited

Figure 13: Employment Impacts of BC Tourism



Source: Econometric Research Limited, 2016.

Conclusions

This section presented the total economic impact of BC's tourism industry assuming minimal labour constraints. When the total – direct, indirect and induced – contributions of tourism to the BC economy are measured, the following results emerge.

- Total income of BC is increased by over $15.9 billion annually in 2013 prices. The direct income increase was over $7.9 billion, while the indirect, and induced income increases were over $8.0 billion.
- Wages and salaries in BC attributed to tourism in 2013 were estimated to be nearly $11.3 billion. The direct labour income increase was approximately $4.5 billion, and the indirect, and induced labour income contributions were approximately $6.8 billion.
- Average direct labour compensation (direct effective wage)[18] per position was approximately $34,000, whereas the total effective wage was over $39,537. The indirect and induced wages and salaries exceeded those paid to direct labour. This is typical of tourism employment; many higher paying jobs are observed in the supporting sectors that meet the direct requirements of tourism.
- A total of 285,475 BC residents owe their jobs to the tourism industry. Direct employment impacts account for 132,000 job, whereas indirect and induced employment represents 153,475 jobs.
- Approximately $6.1 billion in taxation revenue accrued to all three levels of governments on account of the total impacts of tourism. The provincial government added over $1.9 billion in 2013 to its revenues on the tourism impacts, whereas the federal government added $3.8 billion and local government in BC collectively added $353 million.

The indirect and induced impacts of tourism are large and relevant. Neglecting these impacts would understate the contributions of tourism and could present a truncated picture of the importance of the industry and its relevance to the economy and people of BC. The subsequent section of the report will show estimated revenue losses, and resulting economic impact losses, due to labour constraints.

[18] The term effective wage is the calculated compensation dividing labour income by employment. It refers to no specific wage payment; it rather refers to the implicit wage payment of the complement of employed labour.

Economic Impacts Resulting from Unfilled Positions

Introduction

This section presents the expected impacts on the economy resulting from the inability of tourism businesses to fill all positions available in the tourism industry. This analysis uses projected labour shortages from the Conference Board of Canada and from RKA, Inc.

Estimating the economic impacts of tourism in BC for the most recent year (2013) for which the required data was available was the starting point. Against these benchmark estimates, the team quantified and simulated the expected impacts of tourism industry labour constraints on the economy.

Scenarios Based on Labour Shortage Projections

RKA, Inc. estimated labour shortages in the tourism industry by job category and region for 2011 and 2012 and then projected these shortages to 2020. A summary of these findings are presented in **Table** 8 and **Figure 14.** The year 2017 was chosen for the base year (pivot year) in our economic impact analysis scenarios. Several interesting results emerged from the RKA, Inc. study, including:

- Total tourism industry labour shortages in 2017 are estimated at 9,484 persons.[19]
- Not all sectors are projected to experience shortages; the travel services sector is projected to have a surplus of 395 people and these surpluses are expected in every tourism region.
- The largest shortages are expected in food and beverage services (5,351), recreation and entertainment (1,640), and accommodation (1,594).
- The largest shortages are expected in the Vancouver Coast and Mountain region (6,027) and in the Vancouver Island region (1,437).
- Every tourism region of the province is expected to experience labour shortages in tourism-related sectors.

The economic impacts of the aggregate shortages were estimated by shocking (reducing tourism expenditures or revenues) the regional impact model (RIM) until the projected total employment shortages (9,484) were accounted for. This shock represents a reverse solution of the input-output system. The study team started with a targeted employment level and kept constraining the impact results (model solution) until that targeted level of employment (9,484) was reached.

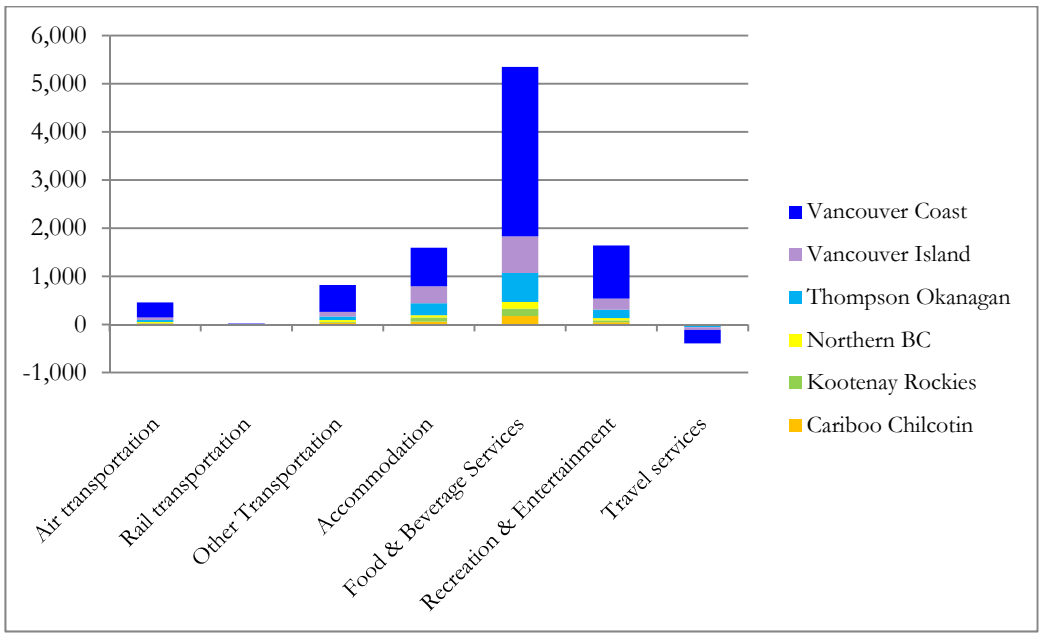
[19] This forecast number for 2017 may be high given that it was projected on the basis of an optimistic economic forecast than what actually was the case. This forecast is used it throughout the report, which is why the readers' attention is drawn to it.

Table 8: Projected Tourism Industry Labour Shortages by Region in BC (2017)

	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver Coast & Mountains	Vancouver Island	Total
Air transportation	22	20	41	10	312	53	458
Rail transportation	1	1	2	0	12	2	18
Other Transportation	40	35	73	18	557	95	818
Accommodation	47	58	249	86	800	354	1,594
F & B Services	138	174	601	155	3,521	762	5,351
Recreation & Entertainment	45	44	177	42	1,104	228	1,640
Travel services	-9	-8	-34	-8	-279	-57	-395
Total	**284**	**324**	**1,109**	**303**	**6,027**	**1,437**	**9,484**

Source: RKA, Inc. based on BC Labour Market Scenario Model and Conference Board of Canada 2011 Update.

Figure 14: Projected Tourism Industry Labour Shortages by Region in BC (2017)



Source: RKA, Inc. based on BC Labour Market Scenario Model and Conference Board of Canada 2011 Update.

The economic impact results of this scenario indicate that the province will likely not fill 20,002 jobs, of which 9,484 lost jobs will be the direct impacts. The loss of 9,484 jobs triggers another loss of 10,518 jobs as indirect and induced contractions magnify the original loss (see **Table 9** and **Figure 15)**.

In addition, the province is estimated to lose about $1.1 billion in value added (GDP) and a total of $2.2 billion in economic activity and sales. Wages and salaries are projected to decline by $790 million under this scenario, of which $322 million will be the direct compensations loss.

Tax revenues, for all levels of government, would also decline. The federal government is estimated to experience losses in tax revenues from tourism impacts exceeding $267 million.

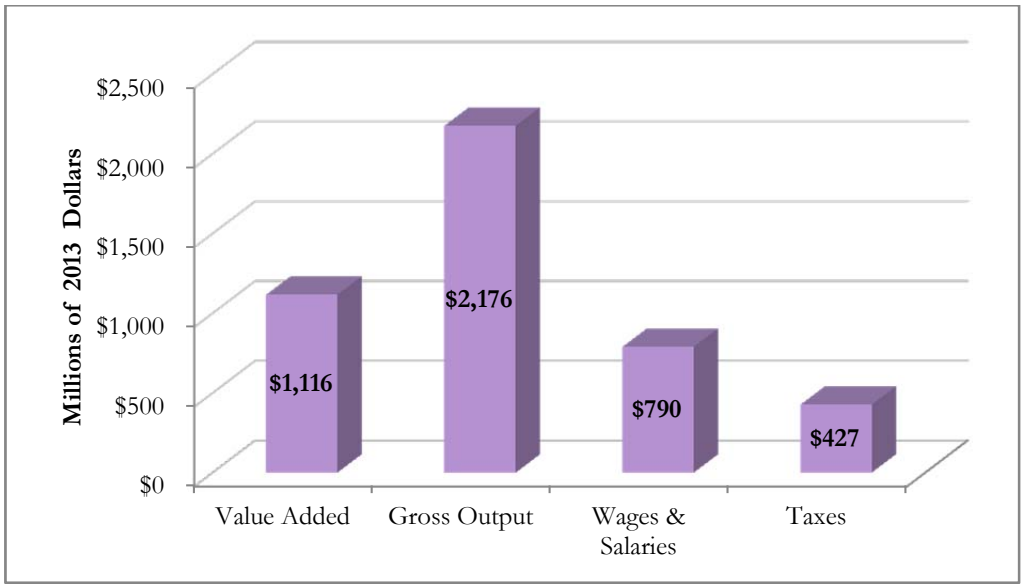
The provincial government is estimated to lose tax revenues in the order of $135 million and the local governments could expect a loss of $25 million in their tax revenues.

Table 9: Economic Impacts Lost as a Result of the Projected Labour Shortages

Millions of 2013 Dollars	
Value Added	
Direct	$518
Indirect & Induced	$598
Total	$1,116
Gross Output	
Direct	$974
Indirect & Induced	$1,202
Total	$2,176
Wages & Salaries	
Direct	$322
Indirect & Induced	$468
Total	$790
Employment (FTEs)	
Direct	9,484
Indirect & Induced	10,518
Total	20,002
Taxes	
Federal	$267
Provincial	$135
Local	$25
Total	$427

Source: Econometric Research Limited

Figure 15: Economic Impacts Lost as a Result of the Projected Labour Shortages



Source: Econometric Research Limited

Although the estimated income, employment and tax revenue losses are relatively modest, these are upper bound losses if one were to take into account that the economy and economic agents (businesses and employees) will adjust their operations to minimize these losses that accrue on labour shortages. Businesses can do so by working their employees over time, substituting technology for labour, using management to fill gaps in lower skill level positions, and adjusting business operating hours. Respondents to the go2HR Tourism Economic Impact Labour Shortage Survey reported that these were, in fact, the ways in which they responded to labour market challenges. Employees can search for alternative jobs and could rely on unemployment and other social assistance programs.

Estimated Losses at the Regional Level

The RKA, Inc. study presents projected labour shortages by region and tourism sector. These projected losses by region and sector in 2017 formed the basis of another impact scenario for this study. The expected losses by sector in each region were used to estimate the income losses of labour (wages they could have earned had this labour been available). These income losses can be thought of as opportunity losses; income that could have been earned had labour existed in these regions to fill the existing and emerging opportunities.

The average compensation of direct labour in tourism ($34,000) was multiplied by the labour gap in order to estimate the income forgone. The forgone income represents the direct impacts; but losses do not stop there. Income earned is typically spent on consumption (using a marginal propensity to consume coefficient). The link between income and consumption was used to allocate the losses over consumer goods and services that would not be bought as a result of the lost income. The economic impacts of these losses are presented in **Table 10** and Figure 16. A summary of the losses by region includes the following observations.

Cariboo Chilcotin Coast

The Cariboo Chilcotin Coast tourism region is projected to lose approximately $11 million equally in direct income, output and wages. In addition, the region is projected to experience indirect and induced losses. The indirect and induced losses initiated by the direct losses exceed $8.5 million in income, $16.4 million in economic activity and $5.6 million in wages and salaries. The initial loss of 324 jobs induces another loss of 145.8 jobs for a total loss of approximately 470 jobs. Total tax revenue losses in the region exceed $7.3 million with the federal government losing $4.6 million, the provincial government losing $2.3 million, and the local governments in the region losing $416 thousand.

Kootenay Rockies

Losses in the Kootenay Rockies tourism region are projected to include a direct loss of approximately $10.3 million equally in income, output and wages. In addition, the region is projected to experience indirect and induced losses. The indirect and induced losses initiated by the direct losses exceed $7.9 million in income, $15.3 million in economic activity and $5.3 million in wages and salaries. The initial loss of 303 jobs induces another loss of 136.4 jobs for a total loss of approximately 440 jobs. Total tax revenue losses in the region exceed $6.8 million with the federal government losing $4.3 million, the provincial government losing $2.1 million, and the local governments in the region losing $389 thousand.

Northern BC

The Northern BC tourism region is projected to lose approximately $9.7 million equally in direct income, output and wages. . In addition, the region is projected to experience indirect and induced losses. The indirect and induced losses initiated by the direct losses exceed $7.4 million in income, $14.4 million in economic activity and $4.9 million in wages and salaries. The initial loss of 284 jobs induces another loss of 128 jobs for a total loss of about 412 jobs. Total tax revenue losses in the region exceed $6.4 million with the federal government losing $4.1 million, the provincial government losing almost $2.0 million, and the local governments in the region losing $365 thousand.

Thompson Okanagan

The Thompson Okanagan tourism region is projected to lose over $37.7 million equally in direct income, output and wages. The indirect and induced losses initiated by the direct losses exceed $28.9 million in income, $56.1 million in economic activity and $19.3 million in wages and salaries. The initial loss of 1,109 jobs induces another loss of 499 jobs for a total loss of about 1,608 jobs. Total tax revenue losses in the region exceed $25 million with the federal government losing $15.9 million, the provincial government losing $7.7 million, and the local governments in the region losing $1.4 million.

Vancouver Island

The Vancouver Island tourism region is projected to lose approximately $48.9 million equally in direct income, output and wages. The indirect and induced losses initiated by the direct losses exceed $37.5 million in income, $72.7 million in economic activity and about $25 million in wages and salaries. The initial loss of 1,437 jobs induces another loss of 646.6 jobs for a total loss of about 2,083.6 jobs. Total tax revenue losses in the region exceed $32.4 million with the federal government losing $20.6 million, the provincial government losing $10 million, and the local governments in the region losing $1.8 million.

Vancouver Coast and Mountains

The Vancouver Coast and Mountain region is projected to lose approximately $205 million equally in direct income, output and wages. The indirect and induced losses initiated by the direct losses exceed $157.4 million in income, $305 million in economic activity and about $104.6 million in wages and salaries.[20] The initial loss of 6,027 jobs induces another loss of 2,711.5 jobs for a total loss of about 8,738.5 jobs. Total tax revenue losses in the region exceed $136 million with the federal government losing $86.3 million, the provincial government losing about $42 million, and the local governments in the region losing $7.7 million.

The total provincial losses (summing over regions) are large but fall short of the scenario where the lost revenues were the main drivers. In this scenario only the initial wages are singled out to drive the results. The additional revenues the workers would raise above their wages were not included.

[20] The argument here is that labour shortages represent lost opportunities. Had labour been available it would have been employed and it would have generated output, incomes and expenditures. Shortages of labour represent opportunity costs of missed output and incomes.

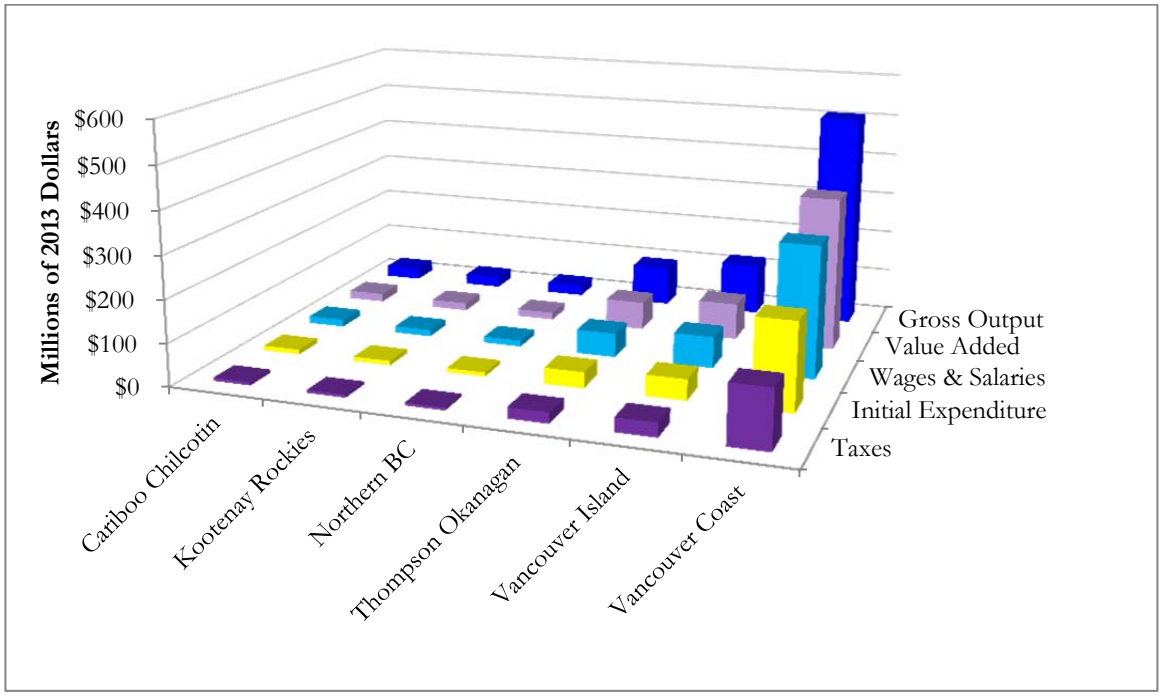
The aggregate losses include $322.4 million in direct wages, $570.2 million in direct, indirect and induced GDP, $802 million in total economic activity, and $487.1 million in total wages and salaries. Total employment forgone (lost) exceeds 13,751 jobs and total tax revenue losses under this scenario exceed $214.1 million. Federal government losses on the forgone impacts add up to $135.9 million; the provincial government losses are expected to exceed $66 million and all local governments can expect to lose $12.2 million collectively.

Table 10: Regional Economic Impacts Lost as a Result of Projected Labour Shortages

Thousands of 2013 Dollars	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver Coast & Mountains	Vancouver Island	Total
Initial Expenditure	$9,656	$11,016	$37,706	$10,302	$204,918	$48,858	$322,456
Value Added							
Direct	$9,656	$11,016	$37,706	$10,302	$204,918	$48,858	$322,456
Indirect & Induced	$7,418	$8,463	$28,967	$7,914	$157,422	$37,534	$247,718
Total	$17,074	$19,479	$66,673	$18,216	$362,340	$86,392	$570,174
Gross Output							
Direct	$9,656	$11,016	$37,706	$10,302	$204,918	$48,858	$322,456
Indirect & Induced	$14,368	$16,392	$56,108	$15,330	$304,924	$72,702	$479,824
Total	$24,024	$27,408	$93,814	$25,632	$509,842	$121,560	$802,280
Wages & Salaries							
Direct	$9,656	$11,016	$37,706	$10,302	$204,918	$48,858	$322,456
Indirect & Induced	$4,930	$5,624	$19,250	$5,260	$104,618	$24,944	$164,626
Total	$14,586	$16,640	$56,956	$15,562	$309,536	$73,802	$487,082
Employment							
Direct	284.0	324.0	1,109.0	303.0	6,027.0	1,437.0	9,484.0
Indirect & Induced	127.8	145.8	499.0	136.4	2,711.5	646.6	4,267.1
Total	411.8	469.8	1,608.0	439.4	8,738.5	2,083.6	13,751.1
Taxes							
Federal	$4,069	$4,640	$15,887	$4,341	$86,342	$20,586	$135,865
Provincial	$1,978	$2,257	$7,725	$2,112	$41,987	$10,011	$66,070
Local	$365	$416	$1,424	$389	$7,738	$1,845	$12,177
Total	$6,412	$7,313	$25,036	$6,842	$136,067	$32,442	$214,112

Source: Econometric Research Limited

Figure 16: Regional Economic Impacts Lost as a Result of Projected Labour Shortages



Source: Econometric Research Limited

A number of tables and figures are presented below to highlight the impact of losses (impacts forgone) for this scenario. In **Table 11** and **Figure 17**, the forgone regional tax revenue impacts by type of tax and region are presented. In Table **12** and **Figure 18**, the regional total employment losses by sector are presented.

The results are revealing; all converge to reasonable magnitudes of loss that cannot be dismissed lightly. There is a labour shortage problem and it imposes costs on the economy at large especially when the indirect and induced effects are taken into consideration.

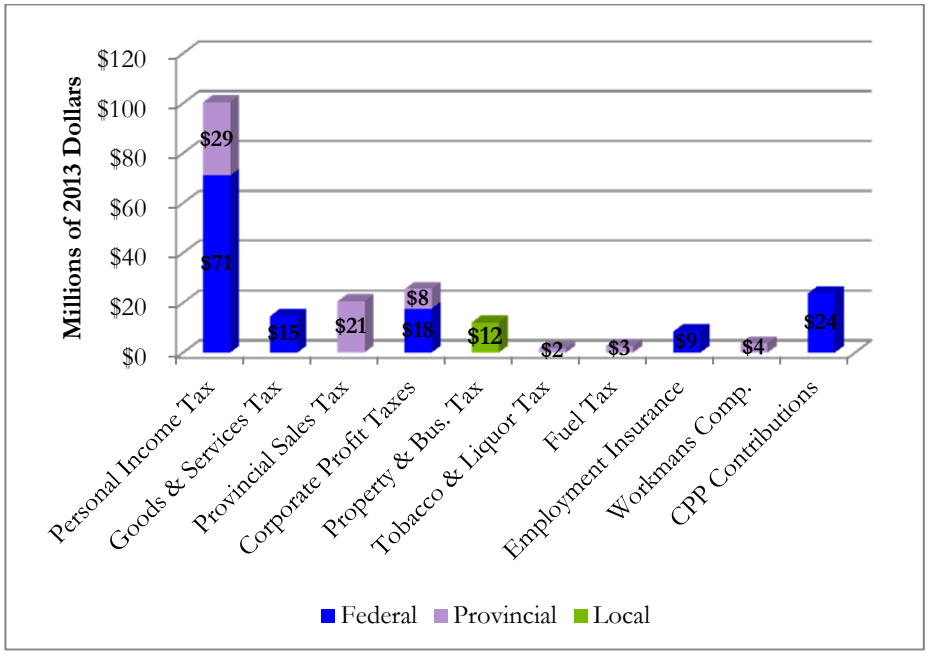
The details presented in the regional, employment and tax tables produce a comprehensive picture of where the expected losses are likely to be, but the bottom line is the overall magnitude of loss and the opportunities lost when these shortages are not recognized and addressed.

Table 11: Regional Tax Impacts Lost as a Result of Projected Labour Shortages

Thousands of 2013 Dollars	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver Coast & Mountains	Vancouver Island	Total
Federal							
Personal Income Tax	$2,128	$2,427	$8,308	$2,270	$45,153	$10,766	$71,052
Goods & Services Tax	$441	$503	$1,722	$471	$9,359	$2,231	$14,727
Corporate Profit Taxes	$531	$605	$2,072	$566	$11,260	$2,685	$17,719
Employment Insurance	$256	$292	$1,001	$273	$5,440	$1,297	$8,560
CPP Contributions	$713	$813	$2,784	$761	$15,130	$3,607	$23,808
Subtotal	$4,069	$4,640	$15,887	$4,341	$86,342	$20,586	$135,865
Provincial							
Personal Income Tax	$882	$1,006	$3,443	$941	$18,713	$4,462	$29,447
Provincial Sales Tax	$617	$704	$2,411	$659	$13,102	$3,124	$20,618
Corporate Profit Taxes	$234	$267	$914	$250	$4,969	$1,185	$7,819
Tobacco & Liquor Tax	$49	$56	$191	$52	$1,038	$247	$1,633
Fuel Tax	$82	$94	$321	$88	$1,747	$416	$2,748
Workers Comp.	$114	$130	$445	$122	$2,418	$577	$3,805
Subtotal	$1,978	$2,257	$7,725	$2,112	$41,987	$10,011	$66,070
Local							
Property & Bus. Tax	$365	$416	$1,424	$389	$7,738	$1,845	$12,176
Total	**$6,412**	**$7,313**	**$25,036**	**$6,842**	**$136,067**	**$32,442**	**$214,111**

Source: Econometric Research Limited

Figure 17: Regional Tax Impacts Lost as a Result of the Projected Labour Shortages



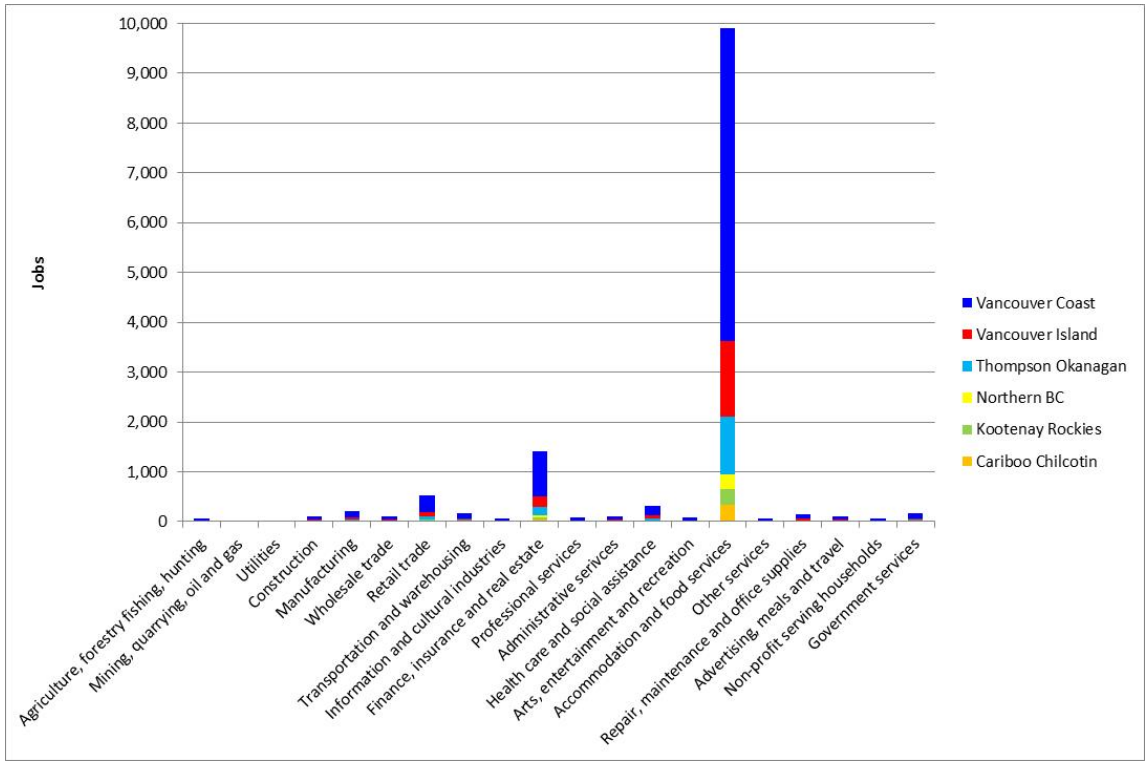
Source: Econometric Research Limited

Table 12: Regional Employment Impacts Lost as a Result of the Projected Labour Shortages

Jobs Lost	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver Coast & Mountains	Vancouver Island	Total
Agriculture, forestry fishing, hunting	1.8	2.0	6.9	1.9	37.5	9.0	59.0
Mining, quarrying, oil and gas	0.2	0.3	0.9	0.2	4.9	1.2	7.6
Utilities	0.5	0.6	2.0	0.5	10.8	2.6	16.9
Construction	3.3	3.7	12.7	3.5	69.0	16.5	108.6
Manufacturing	6.5	7.4	25.3	6.9	137.4	32.8	216.3
Wholesale trade	3.4	3.9	13.5	3.7	73.1	17.4	115.0
Retail trade	15.9	18.1	62.0	16.9	336.8	80.3	530.0
Transportation and warehousing	5.2	5.9	20.3	5.6	110.5	26.4	174.0
Information and cultural industries	2.0	2.3	7.9	2.2	43.2	10.3	67.9
Finance, insurance and real estate	42.1	48.0	164.4	44.9	893.2	213.0	1,405.5
Professional services	2.2	2.5	8.6	2.4	46.9	11.2	73.9
Administrative services	3.2	3.7	12.5	3.4	67.8	16.2	106.7
Health care and social assistance	9.7	11.1	37.9	10.4	205.8	49.1	323.9
Arts, entertainment and recreation	2.2	2.5	8.6	2.4	46.8	11.2	73.6
Accommodation and food services	296.9	338.8	1,159.5	316.9	6,301.0	1,502.4	9,915.5
Other services	2.0	2.3	7.8	2.1	42.6	10.2	67.0
Repair, maintenance and office supplies	4.3	5.0	16.9	4.6	92.0	21.9	144.8
Advertising, meals and travel	3.2	3.6	12.4	3.4	67.6	16.1	106.4
Non-profit serving households	2.0	2.2	7.6	2.1	41.3	9.9	65.0
Government services	5.2	5.9	20.3	5.6	110.3	26.3	173.6
Total	**411.8**	**469.8**	**1,608.0**	**439.4**	**8,738.5**	**2,083.6**	**13,751.1**

Source: Econometric Research Limited

Figure 18: Regional Employment Impacts Lost as a Result of the Projected Labour Shortages



Source: Econometric Research Limited

Conclusions

This section presented the expected impacts on the economy resulting from the inability to fill all positions available in the tourism industry. Projected labour shortages from the Conference Board of Canada and from RKA, Inc. were used as inputs to estimate foregone wages and the resulting total economic impacts of these forgone wages. The resulting estimated losses are shown below, reflecting combined direct, indirect and induced impact losses.

Table 13: Total Regional Economic Impacts Lost as a Result of Projected Labour Shortages

Thousands of 2013 Dollars	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver Coast & Mountains	Vancouver Island	Total
Initial Expenditure	$9,656	$11,016	$37,706	$10,302	$204,918	$48,858	$322,456
Value Added *Total**	$17,074	$19,479	$66,673	$18,216	$362,340	$86,392	$570,174
Gross Output *Total**	$24,024	$27,408	$93,814	$25,632	$509,842	$121,560	$802,280
Wages & Salaries *Total**	$14,586	$16,640	$56,956	$15,562	$309,536	$73,802	$487,082
Employment *Total* Jobs*	411.8	469.8	1,608.0	439.4	8,738.5	2,083.6	13,751.1
Taxes *Total**	$6,412	$7,313	$25,036	$6,842	$136,067	$32,442	$214,112

Source: Econometric Research Limited

** Total = direct, indirect and induced impacts*

The Economic Impacts of Tourism Labour Shortages and Associated Lost Revenues in BC

Introduction

The last section presented the number of positions in tourism-related businesses that are projected to go unfilled in the future, and the resulting estimated lost wages and associated indirect and induced impacts. This section is different in that it focuses on the relevant results from the Tourism Labour Shortage Economic Impact Survey that delineated and quantified the magnitude of business revenue losses associated with labour shortages. These revenue losses were estimated by survey respondents based on their inability to operate at full capacity due to staffing shortages, therefore forcing them to turn away business (and revenue). Based on the estimated lost revenue, the study team estimated the direct, indirect and induced impacts associated with the lost business revenue.

Approach to Generating the Scenarios

The survey of tourism operators and businesses sought to obtain as representative a sample as possible. Given the project resources and time constraints, there was no expectation to devise and assemble a random sample of a sufficient size that would represent population values. However, the survey was successful in obtaining a wide sample that covered all the regions, small, medium and large operators, and all of the tourism sectors and businesses that operate year-round and seasonally. At several levels, the study team used Monte Carlo techniques to increase the representation of the sample and at several junctions the study team corrected for divergence between shares of businesses in the sample and in the population.

The following scenarios were developed to explore the magnitude of losses reported by tourism operators:

- Revenue losses and impacts by region;
- Revenue losses and impacts by sector; and,
- Revenue losses and impacts by year-round versus seasonal businesses.

In each scenario, the objective was to estimate the representative share of gross revenue loss that could be applied to total gross revenue of the tourism industry. To this end, the study team calculated simple averages and weighted averages of these loss shares where the weights were the response numbers for each interval of loss whether by sector, by region or by season. Whenever possible, the study team re-calculated the weighted averages imposing at times the population weights where these weights were available. Data from The Value of Tourism in British Columbia study was also used in the analysis.[21]

[21] The Value of Tourism in British Columbia, Destination British Columbia, February 2015, which uses 2013 data.

Some of the tables presented in this section have two columns to present the two possible losses (those arising using simple average shares and those using weighted averages). The study team was satisfied with the robustness of the samples (low variances) and results under different assumptions and for the different categories of sectoral and regional classification. Invariably, regardless of size, region or business type, approximately 50% of the operators reported no revenue losses resulting from labour shortages. Furthermore, the many samples the study team selected from the original sample reflected little variation in their mean values, a fact that reflects some robustness in the survey results.

Summary of Revenue Losses and Impacts

The following table presents a summary of the initial expenditures (gross revenue losses) and associated impacts by region, sector and season. The final column presents the average impacts.[22] An important qualifier regarding the following results relates to the fact that the initial expenditures (or gross revenue losses) are slightly different for each scenario. It is to be expected that different estimates of the gross revenue losses would emerge as the study team used the different sample results from the survey organized by sector or region or season of operations. It is very positive that, while different, the range of these differences was small, which lends more credibility to the estimates.

Table 14: Economic Impacts of Revenue Loss Due to Labour Shortages in BC

Millions of 2013 Dollars	By Region	By Sector	By Season	Average
Initial Expenditure	$918	$986	$1,186	$1,030
Value Added				
Direct	$522	$562	$675	$586
Indirect & Induced	$529	$577	$683	$596
Total	$1,051	$1,139	$1,358	$1,183
Gross Output				
Direct	$918	$986	$1,186	$1,030
Indirect & Induced	$1,133	$1,219	$1,464	$1,272
Total	$2,051	$2,205	$2,650	$2,302
Wages & Salaries				
Direct	$296	$433	$383	$371
Indirect & Induced	$449	$378	$580	$469
Total	$745	$811	$963	$840
Employment				
Direct	8,717	10,364	11,262	10,114
Indirect & Induced	10,135	10,409	13,095	11,213
Total	18,852	20,773	24,357	21,327
Taxes				
Federal	$251	$282	$325	$286
Provincial	$127	$141	$164	$144
Local	$23	$26	$30	$26
Total	$401	$449	$519	$456

Source: Econometric Research Limited

[22] Typically the mean minimizes the sum of squared errors; any other estimate necessarily gives a larger sum of squared error.

Detailed Revenue Losses and Impacts by Region

In this scenario, tourism businesses were classified by 13 different classes of revenue size (annual gross revenue) and by region. Reported revenue losses by businesses varied by size and by region. Small and relatively large tourism businesses showed higher percentage revenue losses attributed to labour shortages than the rest of businesses and these losses varied by region.

Businesses in the Thompson Okanagan region showed the largest absolute losses in the sample (see **Table 15**). But when these were grossed up to the total of all businesses, Vancouver Coast and Mountain region businesses show the largest losses ($647 million), followed by Thompson Okanagan region businesses ($137.4 million). The smallest losses of $12 million were realized by businesses in the Cariboo Chilcotin region. These estimates, regardless of their degree of representativeness given that in some regions the sample sizes were small, serve to indicate that labour shortages display a strikingly differential regional pattern.

The impacts of these revenue losses are magnified by the inclusion of indirect and induced spill-over repercussions. The full regional impacts are presented in **Table 16.**

Table 15: Estimated Revenue Losses by Region (2013 Dollars)

Gross Revenue Category of Businesses	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver, Coast & Mountains	Vancouver Island	Total
$250,000	$175,000	$131,250	$475,000	$137,500	$168,750	$96,488	$1,183,988
$375,000	$262,500	$225,000	$525,000	$253,125	$403,125	$72,487	$1,741,237
$625,500	$0	$0	$156,376	$62,551	$265,838	$20,897	$505,662
$875,000	$109,375	$0	$875,000	$284,375	$393,750	$107,321	$1,769,821
$1,125,000	$28,125	$168,750	$534,375	$84,375	$196,875	$4,773	$1,017,273
$1,375,000	$0	$0	$412,500	$275,000	$137,500	$40,104	$865,104
$1,625,000	$0	$0	$203,125	$243,750	$203,125	$2,708	$652,708
$1,875,000	$375,000	$0	$0	$0	$328,125	$65,768	$768,893
$2,125,000	$0	$0	$425,000	$318,750	$743,750	$38,516	$1,526,016
$2,375,000	$356,250	$356,250	$831,250	$356,250	$356,250	$84,295	$2,340,545
$2,625,000	$196,875	$196,875	$328,125	$262,500	$196,875	$17,898	$1,199,148
$2,875,000	$0	$0	$215,625	$215,625	$143,750	$2,396	$577,396
$3,000,000	$450,000	$75,000	$2,850,000	$1,350,000	$1,725,000	$174,830	$6,624,830
Sample Revenue Loss	**$1,953,125**	**$1,153,125**	**$7,831,376**	**$3,843,801**	**$5,262,713**	**$728,481**	**$20,772,621**
Sample Count (1)	43	32	129	62	89	159	
Business Population	1,184	336	2,263	859	10,944	3,111	18,697[23]
Estimated Loss	**$53,779,070**	**$12,107,813**	**$137,382,976**	**$53,255,243**	**$647,136,304**	**$14,253,487**	**$917,914,892**

Notes: (1) Some businesses operate in more than one region.
Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

[23] The source for the total number of tourism-related business (establishments) per region is The Value of Tourism in British Columbia, Destination British Columbia, February 2015, Table 9, p. 39, which uses 2013 data.

The estimated revenue loss on a per business basis for the Vancouver Island region is considerably lower than for the other regions. Feedback from the industry suggests that the issue of inadequate labour is not as severe on Vancouver Island, and tends to be localized (businesses in more remote locations) and seasonal. However, it should be noted that the sample sizes resulting from the survey were not necessarily representative of the total population in each region.

Table 16: Economic Impacts of Revenue Loss Due to Labour Shortages in BC by Tourism Region

Millions of 2013 Dollars	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver Coast & Mountains	Vancouver Island	Total
Initial Expenditure	$53.78	$12.11	$137.38	$53.26	$647.14	$14.25	$918.00
Value Added							
Direct	$30.60	$6.89	$78.16	$30.30	$368.19	$8.11	$522.25
Indirect & Induced	$30.97	$6.97	$79.12	$30.67	$372.71	$8.21	$528.66
Total	$61.57	$13.86	$157.29	$60.97	$740.90	$16.32	$1,050.91
Gross Output							
Direct	$53.78	$12.11	$137.38	$53.26	$647.14	$14.25	$917.92
Indirect & Induced	$66.39	$14.95	$169.59	$65.74	$798.86	$17.60	$1,133.13
Total	$120.17	$27.06	$306.98	$119.00	$1,446.00	$31.85	$2,051.05
Wages & Salaries							
Direct	$17.36	$3.91	$44.36	$17.19	$208.95	$4.60	$296.38
Indirect & Induced	$26.31	$5.92	$67.20	$26.05	$316.54	$6.97	$448.98
Total	$43.67	$9.83	$111.56	$43.24	$525.48	$11.57	$745.36
Employment							
Direct	511	115	1,305	506	6,145	135	8,717
Indirect & Induced	594	134	1,517	588	7,145	157	10,135
Total	1,105	249	2,822	1,094	13,291	293	18,852
Taxes							
Federal	$14.73	$3.32	$37.64	$14.59	$177.29	$3.90	$251.47
Provincial	$7.42	$1.67	$18.95	$7.34	$89.25	$1.97	$126.59
Local	$1.37	$0.31	$3.49	$1.35	$16.43	$0.36	$23.31
Total	$23.52	$5.30	$60.07	$23.29	$282.97	$6.23	$401.38

Source: Econometric Research Limited

Detailed Revenue Losses and Impacts by Sector

Revenue losses are experienced differently by each sector. The results in **Table 17** show that the percentage share of revenue loss due to labour shortages are more pronounced in the food and beverage sector (6.33%) and less so in travel services (3.36%) and the accommodation sector (3.56%). The sector categories used in this table are the go2HR categories that were used in the online survey.

Table 17: Average % Revenue Losses by Sector

Midpoint % Revenue Loss	Accomm-odation	Food & Beverage Services	Recreation & Entertainment	Snow Sports	Transport-ation	Travel Services
3	0.56%	0.84%	0.45%	1.00%	0.33%	0.36%
8	0.95%	1.71%	1.19%	1.60%	0.89%	0.97%
13	1.11%	1.91%	1.07%	0.87%	2.89%	0.39%
18	0.51%	0.96%	1.04%	0.00%	0.00%	1.64%
23	0.26%	0.92%	0.38%	0.00%	0.00%	0.00%
28	0.16%	0.00%	0.46%	0.00%	0.00%	0.00%
Weighted Average	**3.56%**	**6.33%**	**4.60%**	**3.47%**	**4.11%**	**3.36%**

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

The sector categories, and related data, in the Value of Tourism in British Columbia study were used when the study team grossed up the survey results to the tourism industry in BC. The study team used the reported gross revenue losses by sector from the online survey results and re-categorized them into the following Value of Tourism sectors, in order to enable the data from that study to be used in the analysis:

- Retail;
- Accommodation and Meals;
- Transportation; and,
- Other Services.[24]

The study team then conducted the economic impact analysis to estimate the indirect and induced impacts at the provincial level for the four sectors. The results are presented below.

Table 18: Economic Impacts of Revenue Loss Due to Labour Shortages in BC by Tourism Sector

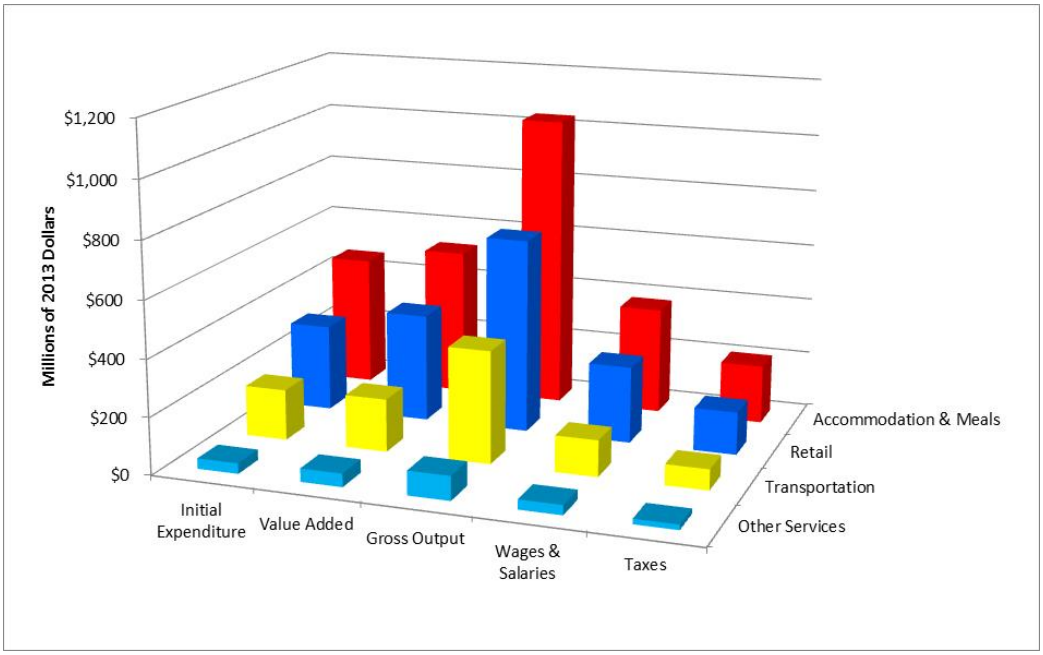
Millions of 2013 Dollars	Retail	Accommodation & Meals	Transportation	Other Services	Total
Initial Expenditure	$306.30	$463.70	$179.50	$36.80	$986.30
Value Added					
Direct	$199.09	$253.41	$86.25	$23.31	$562.06
Indirect & Induced	$182.98	$270.29	$100.48	$23.49	$577.25
Total	$382.08	$523.70	$186.73	$46.80	$1,139.31
Gross Output					
Direct	$306.30	$463.70	$179.50	$36.80	$986.30
Indirect & Induced	$380.19	$573.54	$216.52	$48.29	$1,218.53
Total	$686.49	$1,037.24	$396.02	$85.09	$2,204.83
Wages & Salaries					
Direct	$151.33	$201.69	$61.39	$18.73	$433.13
Indirect & Induced	$119.65	$176.21	$66.89	$15.70	$378.44
Total	$270.98	$377.90	$128.28	$34.42	$811.57

[24] The Value of Tourism in British Columbia, Destination British Columbia, February 2015, Table 2, p. 33 and Table 4, p. 35 (2013 data).

Millions of 2013 Dollars	Retail	Accommodation & Meals	Transportation	Other Services	Total
Employment					
Direct	3420.9	6,098	670	176	10,364
Indirect & Induced	3409.7	4,848	1,704	447	10,409
Total	6830.6	10,946	2,374	623	20,773
Taxes					
Federal	$94.56	$129.71	$46.20	$11.61	$282.07
Provincial	$47.41	$65.23	$22.66	$5.73	$141.03
Local	$8.74	$12.02	$4.18	$1.06	$25.99
Total	$150.70	$206.96	$73.03	$18.39	$449.09

Source: Econometric Research Limited

Figure 19: Economic Impacts of Revenue Loss Due to Labour Shortages in BC by Sector



Source: Econometric Research Limited

Detailed Revenue Losses and Impacts by Year-round and Seasonal Businesses

Operators were classified as either year-round or as seasonal.[25] The magnitude of revenue losses reported differed substantially between the two groups; those that operate year-round were greater in number (73.8% of respondents were year-round businesses) and, as a result, reported the majority of the losses. The issue was the relative share of these losses. Sample revenue losses reported by year-round operators accounted of $245.1 million and represented 82.14% of the total reported losses. The seasonal operators reported a loss of $53.3 million or 17.85% of the total reported losses.

[25] Note that it was difficult through the online survey to classify the businesses more precisely, for example, by operating quarter or specific operating season or to track their monthly operations. Therefore, the survey sought to obtain a classification of businesses by those that operate year-round and those that operate for a partial year (seasonal).

The simple and weighted average percentage losses when taking into account the relative size of business were 8.2% and 8.3% for the year-round operators (**Table 19**). These average percentages were 8.7% for the simple arithmetic mean of the seasonal operators and 9.6% for the weighted average (**Table 20**). Applying these average percentage shares of reported losses by the two types of business and using the calculated relative reported losses in the sample to gross up to total revenues lost on account of labour shortages, the study team estimated the losses of year-round businesses due to labour shortages to be approximately $948 million and those of seasonal operators to exceed $238 million for a total of $1.2 billion (**Table 21**). The weighted loss percentages indicate that year-round operators lost 8.3% of their expected revenue due to labour shortages, while the seasonal operators lost 9.6%.

The study team used the mid points of the different classes of reported gross revenue loss due to labour shortages and these were grossed up to total gross revenue lost, as percentages of loss varied among the different businesses by size and season for the simple arithmetic average loss. For the weighted average loss, the sample count percentages were used as weights. The multiplication of the revenue loss by interval was also multiplied by the share of the respondents in the interval.

Table 19: Average Losses of Year Round Operators (%)

Midpoint % Revenue Losses	Counts	Share of Counts	Counts	Weighted Losses by Count Shares
3	62	19.4%	1.86	1.2%
8	47	14.7%	3.76	2.4%
13	30	9.4%	3.9	2.5%
18	11	3.4%	1.98	1.3%
23	4	1.3%	0.92	0.6%
28	2	0.6%	0.56	0.4%
Arithmetic Mean		**8.2%**		
Weighted Mean				**8.3%**

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

Table 20: Average Losses of Seasonal Operators (%)

Midpoint % Revenue Losses	Counts	Share of Counts	Counts	Weighted Losses by Count Shares
3	21	17.6%	0.63	1.0%
8	17	14.3%	1.36	2.2%
13	12	10.1%	1.56	2.5%
18	8	6.7%	1.44	2.3%
23	3	2.5%	0.69	1.1%
28	1	0.8%	0.28	0.5%
Arithmetic Mean		**8.7%**		
Weighted Mean				**9.6%**

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

The impact results associated with these two types of tourism business revenue losses include the following (**Table 21** and **Figure 20).**

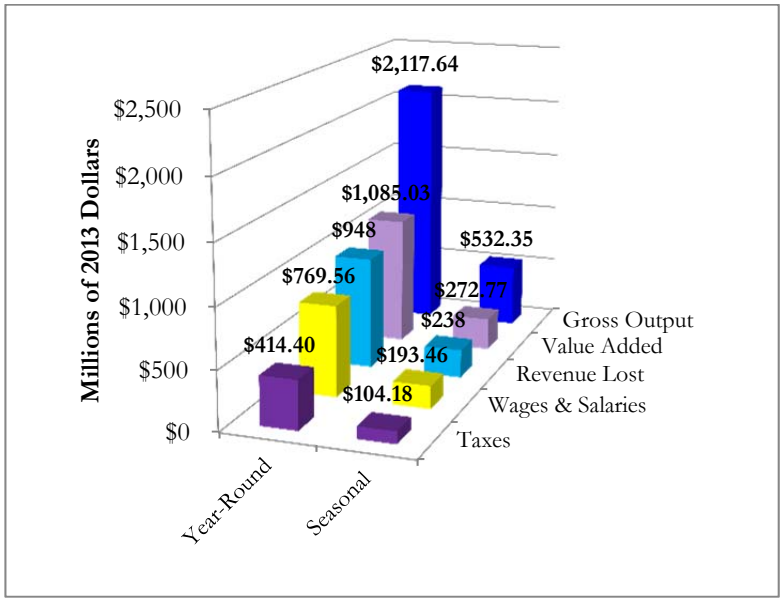
- Total GDP losses on account of the labour shortages experienced by the two types of businesses are approximately $1,358 million, of which $1,085 million is the accounted for by the year-round operators and the remaining $273 million is the share of seasonal operators.
- A total of 24,357 jobs are lost by both types of businesses, with over 19,464 jobs lost in the year round businesses and 4,893 jobs lost in the seasonal businesses.
- Total taxes lost by all levels of government are over $518 million. The contribution of year round businesses to these losses is $414 million and the share of seasonal operators is $104 million.
- The provincial government tax revenue loss is over $164 million, primarily due to losses in the year round businesses ($131 million), while seasonal operators contributed $33 million of these losses.

Table 21: Impacts of Revenue Loss Due to Labour Shortages - Year-Round/Seasonal

Millions of 2013 Dollars	Year Round Operators	Seasonal Operators	Total
Initial Expenditure	$947.72	$238.25	$1,185.96
Value Added			
Direct	$539.20	$135.55	$674.75
Indirect & Induced	$545.83	$137.22	$683.05
Total	$1,085.03	$272.77	$1,357.80
Gross Output			
Direct	$947.72	$238.25	$1,185.97
Indirect & Induced	$1,169.92	$294.11	$1,464.03
Total	$2,117.64	$532.35	$2,649.99
Wages & Salaries			
Direct	$306.00	$76.92	$382.92
Indirect & Induced	$463.56	$116.54	$580.10
Total	$769.56	$193.46	$963.02
Employment			
Direct	9,000	2,262	11,262
Indirect & Induced	10,464	2,631	13,095
Total	19,464	4,893	24,357
Taxes			
Federal	$259.63	$65.27	$324.90
Provincial	$130.70	$32.86	$163.56
Local	$24.07	$6.05	$30.12
Total	$414.40	$104.18	$518.58

Source: Economic Research Limited

Figure 20: Economic Impacts of Revenue Loss Due to Labour Shortages - Year-Round/Seasonal



Source: Economic Research Limited

Conclusions

This section used the revenue losses reported by respondents to the survey to estimate the total economic impacts resulting from this lost revenue. The analysis was conducted by region, by sector and by year-round versus seasonal businesses. Key findings resulting from the analysis are as follows.

- Small and relatively large businesses demonstrated higher revenue losses attributed to labour shortages than the other businesses.
- When grossed up to the provincial level, business revenue losses were largest in the Vancouver Coast and Mountains Region, followed by the Thompson Okanagan Region, the Northern BC Region, the Kootenay Rockies Region, the Vancouver Island Region and, lastly, the Cariboo Chilcotin Coast Region. The Vancouver Island Region reported the lowest per business revenue loss resulting from labour shortages. This is consistent with industry feedback, which indicated that the labour shortage issue does not seem to be as serious in the Vancouver Island Region, relative to the other regions.
- Based on the online survey results, the food and beverage sector experienced the largest percentage revenue losses as a result of labour constraints. The average percentage losses were:

Food and beverage services:	6.33%
Recreation and entertainment:	4.60%
Transportation:	4.11%
Accommodation:	3.56%
Snow sports:	3.47%
Travel services:	3.36%

- When analysed on a year-round versus seasonal business basis, the seasonal businesses lost more revenue due to labour shortages on a percentage basis, while the year-round businesses lost more revenue due to labour shortages on an absolute basis:
    - Year-round operators lost an estimated $947.72 million in direct gross revenue (initial expenditure); and,
    - Seasonal operators lost an estimated $238.25 million in direct gross revenue (initial expenditure).

The resulting estimated direct, indirect and induced impacts of the reported revenue losses due to labour shortages are as follows.

Table 22: Economic Impacts of Revenue Loss Due to Labour Shortages in BC

Millions of 2013 Dollars	By Region	By Sector	By Season	Average
Initial Expenditure	$918	$986	$1,186	$1,030
Value Added				
Total*	$1,051	$1,139	$1,358	$1,183
Gross Output				
Total*	$2,051	$2,205	$2,650	$2,302
Wages & Salaries				
Total*	$745	$811	$963	$840
Employment				
Total*	18,852	20,773	24,357	21,327
Taxes				
Total*	$401	$449	$519	$456

Source: Econometric Research Limited

** Total = direct, indirect and induced impacts*

Adjustment Scenario

Introduction

This section presents analysis regarding existing wages, and the differential in the average wage that could enable tourism-related businesses to more effectively compete with other industries for labour. The optimal adjustment scenario probes the efficient adjustment scenario and estimates the shadow wage that should be paid by tourism businesses in order to access labour while competing for this labour with other industries.

Optimal Adjustment Scenario

British Columbia boasts a relatively low unemployment rate (6.2% in 2015) [26], but the existence of unemployment in itself suggests that labour shortages in the province should not be a problem, assuming that people are willing to re-locate to find work and/or work in different fields at different wage rates. When unemployment exists, it follows that the labour force in BC is larger than the level of employment and that there are people who are actively looking for jobs but not finding them. Equally true is the documented fact that tourism operators in the province have faced difficulties filling all of the positions they offer even under this state of excess supply of labour. Naturally the question arises as to whether there are specific problems that are unique to tourism operators' experience in the labour market.

Actually, there are several peculiarities associated with the tourism industry's labour challenges. For one, some of their operations are seasonal and many are in remote areas of the province where population densities are low. It is also true that wages for some occupations in this industry are typically low. It is logical to ask the question: "What happens if tourism operators can compete with other employers for employees?" In other words what wages will tourism operators have to pay to access labour and out-compete other employers?

The best way to answer this question is to formulate a maximization problem where the objective function is to maximize income (GDP) subject to commodity balances (demand equal supply) from the input output system and to add an overall labour constraint.

Formally the problem can be stated as noted in the text box on the following page.

The primal solution to this problem will show the extent to which the province can optimize its economic potential (the study team found out from the solution that BC could have increased its GDP to $211.5 billion in chained 2007 dollars from the $202 billion in 2012) and the dual solution will estimate the wage rate that would have to be to secure the labour requirements.

[26] Statistics Canada. Labour Force, Employment and Unemployment, Levels and Rates By Province, 2015. CANSIM Table 282.0002.

The solution to this linear programming problem is presented in Appendix E (**Table 33**: The Shadow Prices and Objective Function Values).

The shadow wage that corresponds to the optimal solution is $42,436 (the dual variable associated with 36th constraint).[27] Given that average direct wages in tourism are far lower (estimated at $34,000)[28], a market solution to the labour shortages problem in tourism would require tourism-related operators/ businesses to raise their wages by $8,436 (disregarding inflation) on average to bid for labour. This may be ambitious given typical low margins and the structural problems many tourism businesses face, but, nonetheless, it suggests that raising wages (productivity) is an option (this can be accomplished by an increased use of technology, better management procedures that raise the productivity of their workers, hiring more skilled workers, etc.).

This represents a 24.8% increase in the annual wage (or salary), on average.

Stated Problem

Maximize $\sum v_j x_j$

Where v_j is the value added coefficient of industry j

x_j is the gross output of industry j

Subject to

$\sum_j a_{i,j} x_j + F_i \leq x_i$

$\ell_j x_j \leq \bar{L}$

$x_j \geq 0$

Where

$a_{i,j}$ is the composite coefficient of market share and use per unit of output

F_i is the final demand in industry i

ℓ_j is the labour force coefficient in industry j

[27] The shadow price (wage) is the contribution to GDP that would be made by relaxing the labour constraint by one labour unit. It measures the Marginal Product of the additional worker.

[28] It is noted that there is significant variability in wage rates within the tourism industry, where positions range from chief executive officers or general managers of large corporations, to wilderness tour guides, to front office managers, to head chefs, to housekeepers, to name only a few to demonstrate the diversity that exists. Consistent with this, the direct wages and salaries available in the industry are also diverse, with the current estimate of $34,000 annually as an average.

Conclusions

Introduction

The pivotal role tourism plays in the BC economy and its many contributions to showcasing the natural beauty and history of the province are significant. Tourist expenditures of residents and non-residents exceeded $13.9 billion in British Columbia in 2013. These expenditures represent "new money" in BC that would not have been spent there if tourists – both residents and non-residents – were to choose to visit elsewhere. Their impacts are, therefore, incremental, adding to the Gross Provincial Product, total provincial employment, and tax revenues to all three levels of government.

The direct contribution of tourism expenditures to BC's Gross Domestic Product (GDP) was over $7.3 billion in 2013 (in 2007 constant dollars and over $7.9 billion in 2013 dollars). More than 132,200 British Columbians owe their direct jobs to this sector which paid $4.5 billion in wages and salaries, with an average compensation of $34,000, and made a substantial $980 million contribution to the provincial treasury.

These contributions to the economy compare favourably with the contributions of other primary resource industries in British Columbia, including forestry, agriculture and fish, and even mining, and oil and gas extraction.

The direct contributions of the tourism industry, however large and substantive they are, fall short of capturing the full and comprehensive contributions of this sector. A comprehensive accounting of the tourism value in British Columbia would include the indirect and induced contributions of the industry as these typically exceed the direct contributions.

This study identified, quantified, and presented the economic contributions of tourism to the provincial economy and regions, particularly those threatened by labour shortages and difficulties in accessing the required labour with the appropriate skills. It also estimated the impacts (direct expenditures and associated indirect and induced impacts) resulting from the inability of BC tourism operators/ businesses to hire all the people they need to operate at full capacity.

Economic Impact of Tourism

When the total contributions of tourism (direct, indirect and induced) to the BC economy are measured, the following results emerge:

- Total income of BC is permanently increased by over $15.9 billion annually in 2013 prices. The direct income increase is over $7.9 billion, while the indirect and induced income contributions were over $8 billion.

- Wages and salaries in BC attributed to tourism in 2013 were estimated to be nearly $11.3 billion. The direct income increase was approximately $4.5 billion, and the indirect and induced income increases were approximately $6.8 billion.
- Direct labour compensation (direct effective wage) was approximately $34,000, whereas the total effective wage was over $39,537. The indirect and induced wages and salaries exceeded those paid to direct labour. This is typical of tourism employment; many higher paying jobs are observed in the supporting sectors that meet the direct requirements of tourism.
- A total of 285,475 BC residents owe their full time equivalent jobs to the tourism sector. Direct employment impacts account for over 132,000 FTEs, whereas indirect and induced employment represents 153,475 FTEs.
- A total of about $6.1 billion in taxation revenue accrued to all three levels of government due to the total impacts of tourism. The provincial government added over $1.9 billion in 2013 to its revenues as a result of tourism spending, whereas the federal government added $3.8 billion and local government in BC collectively added $353 million.

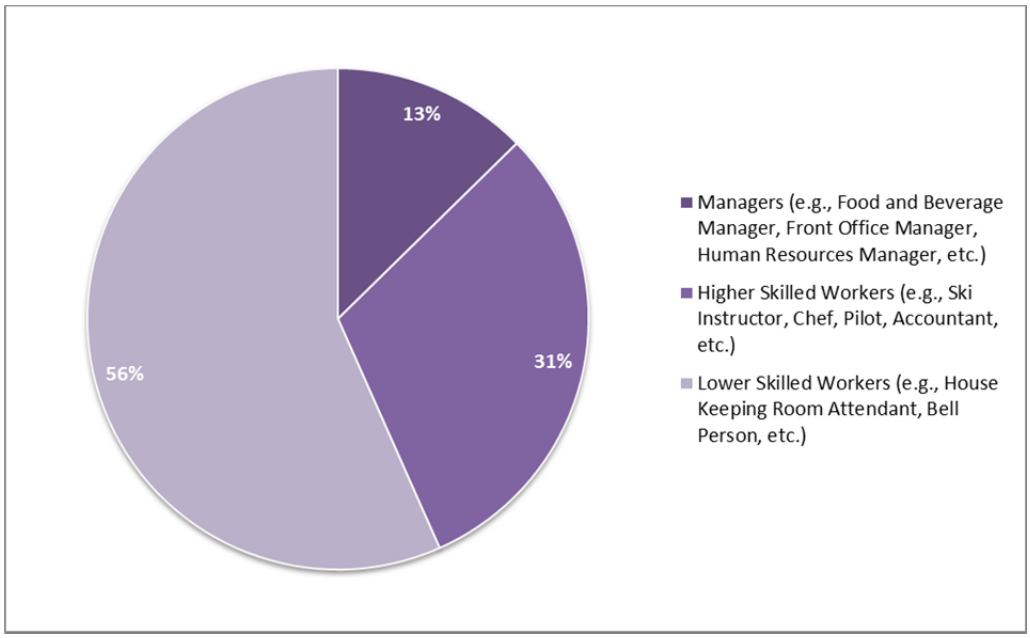
The indirect and induced impacts of tourism are large and relevant. Neglecting these impacts would understate the contributions of tourism and could present a truncated picture of the importance of the sector and its relevance to the economy and people of BC.

Validating the Labour Constraints (online industry survey results)

The online survey conducted to help better understand the extent and implications of labour shortages for BC's tourism operators and businesses across the province revealed the following.

- Over 50% (50.9%) of operators/businesses were not able to hire all the staff they needed in 2014. Of these operators/businesses:
    - 56.5% were in need of an additional 1-4 employees;
    - 16.0% were in need of an additional 5-9 employees;
    - 19.6% were in need of an additional 10-24 employees;
    - 5.8% were in need of an additional 25-49 employees;
    - Two respondents were in need of an additional 50-100 employees; and,
    - Three were in need of an additional 100 or more employees.
- The majority of unfilled positions were in the lower skilled category. However, as shown the next graph, over 30% were in the higher skilled category and over 12% in the manager category.

Figure 21: Percentage of Unfilled Positions by Category



Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.
N= 225

- The most commonly cited implications of the inability to hire enough people were:
  - Staff burn-out: 71.4%
  - Hired under-qualified staff: 70.5%
  - Reduced customer service: 54.6%
  - Missed business opportunities: 47.8%
  - Increased business costs: 42.2%
  - Increased overtime: 35.7%

- Over 11% of respondents indicated that they considered closing their business due to the labour constraints they experienced in 2014. Just over 50% of respondents indicated they lost revenue in 2014 due to labour constraints.
  - 33.5% of respondents lost in the range of 1% – 10% of total revenue.
  - 15.5% of respondents lost in the range of 11% – 25% of total revenue.

Economic Impacts with and without Significant Labour Constraints

The following table presents the economic and employment impacts for 2013:

- Assuming minimal labour constraints (A); and,
- Assuming labour constraints and resulting lost revenue (A) – (B) (net impacts shown in right-hand column).

The middle column (B) presents the revenue lost (initial expenditure) by tourism-related operators and business throughout BC as a result of labour constraints and the concurrent inability to operate at full capacity. This was derived from the online industry survey. The lost economic impacts (value added, gross output, wages and salaries, employment, and taxes) are also shown in the middle column. These represent significant losses to operators/businesses, to residents of BC and to each level of government.

Table 23: Economic Impacts without and with Significant Labour Constraints

Millions of 2013 Dollars	Economic Impact Results with Minimal Labour Constraints (A)	Lost Revenue (Expenditures) Due to Labour Constraints and Resulting Lost Economic Impacts (B)	Net Economic Impact Results Assuming Labour Constraints (A)-(B)
Initial Expenditure	**$13,900**	**$1,030**	**$12,870**
Value Added			
Direct	$7,908	$586	$7,322
Indirect & Induced	$8,006	$596	$7,410
Total	$15,914	$1,183	$14,731
Gross Output			
Direct	$13,900	$1,030	$12,870
Indirect & Induced	$17,159	$1,272	$15,887
Total	$31,059	$2,302	$28,757
Wages & Salaries			
Direct	$4,488	$371	$4,117
Indirect & Induced	$6,799	$469	$6,330
Total	$11,287	$840	$10,447
Employment			
Direct	132,000	10,114	121,886
Indirect & Induced	153,475	11,213	142,262
Total	285,475	21,327	264,148
Taxes			
Federal	$3,808	$286	$3,522
Provincial	$1,917	$144	$1,773
Local	$353	$26	$327
Total	$6,078	$456	$5,622

Source: Econometric Research Limited, 2016.

Overall Conclusions

Overall, the study confirms that the BC tourism industry is facing labour constraints that are impacting businesses. Just over 50% of those surveyed for this study indicated that they could not hire all the people they needed to run their business and/or expand their business in 2014. The inability of these businesses to operate at full capacity due to labour shortages resulted in an estimated $1,030 million in lost tourism spending (or gross revenue) across the province. This, in turn, resulted in much larger losses, when indirect and induced impacts were considered. Impacts were also felt with regard to lost taxation revenue for all three levels of government.

In conclusion, the survey results confirmed the labour shortage issues that tourism industry stakeholders have been articulating in recent years, and validated the issues documented in the *British Columbia Tourism Labour Market Strategy (2012 – 2016).* The economic impact analysis conducted through this study further demonstrated that the revenue (direct tourism spending) losses that operators and businesses are experiencing due to labour shortages are having large and detrimental impacts on the BC economy, particularly when the indirect and induced impacts are also shown. Based on these findings, go2HR and its stakeholders need to collectively define the next steps required to address the tourism industry's labour market constraints.

LIST OF TABLES

LIST OF FIGURES

APPENDICES

Appendix A: Sector Associations and Regional Destination Marketing Organizations

Key representatives from each of the following organizations were interviewed to gain an understanding about the extent of labour shortage issues within their respective sectors or regions. In addition to the interviews, representatives from these associations and regional destination marketing organizations ("RDMOs") distributed the online survey link to their members/stakeholders to support this project.

Tourism Associations	
Canada West Ski Areas Association	BC Ocean Boating Tourism Association
Backcountry Lodges Association of BC	BC Wine Institute
Camping & RV BC Coalition	Helicat Canada Association
British Columbia Hotel Association	Sea Kayak Guides Alliance of BC
BC Fishing Resorts & Outfitters Association	Snowmobile BC
Sport Fishing Institute of BC	Wilderness Tourism Association
BC Garden Tourism Coalition	British Columbia River Outfitters Association
British Columbia Golf Marketing Alliance	Guide Outfitters Association of BC
National Golf Course Owners of Canada Association, BC Chapter	Aboriginal Tourism Association of BC
	BC Restaurant & Food Services Association
British Columbia Guest Ranchers Association	BC Museums Association
Western Canada Mountain Bike Tourism Association	Tourism Industry Association of BC

RDMOs	
Kootenay Rockies	Thompson Okanagan
Northern British Columbia	Vancouver Island
Cariboo Chilcotin Coast	Vancouver, Coast & Mountains (through Destination BC)

Appendix B: Survey

go2HR BC Tourism Labour Shortage Economic Impact Survey

go2HR has retained Grant Thornton and Econometric Research Limited, two professional consulting and research companies, to measure the economic impact of labour shortages in the province and in your region. The following survey, and resulting information, will be used to:

- Gain a solid understanding of the economic potential of tourism and hospitality businesses in British Columbia ("BC");
- Gain a solid understanding of how labour shortages are impacting tourism and hospitality businesses; and,
- Estimate the potential economic losses to regional and provincial economies resulting from tourism and hospitality businesses that are unable to fill certain positions and, as a result, are not able to operate at full capacity.

Your experiences and views are very important to the successful completion of this study. Please be assured that all your responses will be kept completely anonymous and confidential. Grant Thornton and Econometric Research Limited will only provide aggregate survey results in the report. Neither go2HR nor your association will be able to view your responses to this survey.

The survey will take approximately **15 minutes** to complete. Kindly complete the survey by **February 12th, 2016**. If you have any questions, please contact:

- Debbie Yule, go2HR: 604 663-9787 (ext 228) or dyule@go2hr.ca
- Jennifer Nichol, Grant Thornton LLP 604 443-2146 or jennifer.nichol@ca.gt.com

Notes:

If you are unable to complete the survey in a single session, ***you can continue the survey at a later date or update your answers by clicking on the same link.***

If you have received this survey twice, please accept our apologies. We have used multiple associations to distribute this survey to ensure we reach as many operators as possible.

This survey covers the 2014 calendar year. If you operate your business using a fiscal year, please use 2014/2015 fiscal year information.

go2HR

go2HR BC Tourism Labour Shortage Economic Impact Survey

SURVEY
STRICTLY CONFIDENTIAL

A. PRELIMINARY INFORMATION

Please note that all questions with an asterisk (*) require an answer to complete the survey.

* 1. Name of Business

* 2. Location of Main Office (City or Town)

3. Name of Person Completing Survey

4. Job Title

5. Phone#

* 6. Would you like a summary of the aggregate survey results?

◯ Yes ◯ No

If Yes, please provide your email address:

B. COMPANY DESCRIPTION

* 7. The ownership of your business is best described as:

- [ ] Sole Proprietor
- [ ] Partnership
- [ ] Corporation
- [ ] Franchisee
- [ ] Public Sector Operation (e.g., government operated conference centre, museum, park, etc.)
- [ ] Non-profit Society (e.g., society operated museum, etc.)

* 8. Which of the following industries characterizes the primary category to which your business/operation belongs? *Please note that these are the standard industry categories used by go2HR.*

- ◯ Accommodation
- ◯ Food and Beverage Services
- ◯ Recreation and Entertainment
- ◯ Snow Sports
- ◯ Transportation
- ◯ Travel Services

* 9. Please indicate more specifically your type(s) of business/operation.

(e.g. restaurant, attraction, camp ground, ski hill, sport fishing, lodge, backcountry lodge, hotel, fishing resort, kayak touring, marina operator, museum, boat tours, whitewater rafting, heritage tour, etc.)

* 10. How many years has this business been in operation?

* 11. Is this business operated on a year round or on a seasonal basis?

◯ Year Round (12 months) ◯ Seasonal

12. If seasonal, please indicate ALL months in which you operate, including those that you may only operate in partially.

- [ ] January
- [ ] February
- [ ] March
- [ ] April
- [ ] May
- [ ] June
- [ ] July
- [ ] August
- [ ] September
- [ ] October
- [ ] November
- [ ] December

* 13. In which of the following tourism regions does your business operate?

- [ ] Northern BC
- [ ] Cariboo Chilcotin Coast
- [ ] Thompson Okanagan
- [ ] Kootenay Rockies
- [ ] Vancouver, Coast & Mountains
- [ ] Vancouver Island

C. EMPLOYEES

* 14. During 2014, how many people were employed in your operation in the following types of positions? *Count yourself or other family members if you or they worked in the operation.*

Full Year/Full-Time	
Full Year/Part-Time*	
Part Year/Full-Time	
Part Year/Part-Time*	
Total Employees in 2014	

** "Part-Time" is considered less than 35 hours per week.*

* 15. What percentage of your employees during 2014 fell within the following categories?***Please DO NOT input the % sign as this is assumed.***

Canadians who are fully-qualified for the position	
Canadians who are partially-qualified for the position	
Temporary foreign workers	
Working holiday visa holders	
Vacant positions	
Other	
Total	**100%**

16. If you selected "Other", please indicate the category.

D. COMPANY SIZE

* 17. Please indicate from the dropdown box which gross revenue category is applicable for your business for 2014.

18. Approximately how many **guests** can be served by your operation at any given time?

E. VISITOR VOLUME AND MIX

19. Approximately how many guests did you have in 2014?

* 20. Approximately what percentage of the total number of guests during 2014 came from the following areas? ***Please DO NOT input the % sign as this is assumed.***

Your tourism region(s)	
Other tourism regions in BC	
Other Canada	
U.S.A.	
Europe	
Other	
Total	**100%**

F. LABOUR SHORTAGES

* 21. Were you able to hire all the people you wanted to hire in 2014?

Yes No

* 22. If No, how many people were you unable to hire in 2014?

* 23. Please indicate the estimated number of unfilled positions in 2014 in the following categories.

Managers (e.g., Food and Beverage Manager, Front Office Manager, Human Resources Manager, etc.)

Higher Skilled Workers (e.g., Ski Instructor, Chef, Pilot, Accountant, etc.)

Lower Skilled Workers (e.g., House Keeping Room Attendant, Bell Person, etc.)

* 24. Please indicate the types of positions that were vacant in 2014. Click all that apply.

- [ ] Manager/Supervisor
- [ ] Clerk/Cashier
- [ ] Front Desk Agent
- [ ] Guest Services Agent
- [ ] Bell Person
- [ ] Housekeeping Room Attendant
- [ ] Chef
- [ ] Cook
- [ ] Prep Cook/Kitchen Helper
- [ ] Bartender
- [ ] Server
- [ ] Dishwasher
- [ ] Maintenance Technician
- [ ] Tradesperson
- [ ] Guide
- [ ] Ski Instructor
- [ ] Other

If you clicked Other, please specify.

* 25. Of the above positions listed in Question 24, please rank the top three positions that were the most difficult to fill in 2014.

#1

#2

#3

* 26. How many of the unfilled positions were there in each of the following categories in 2014?

Full Year/Full-Time	
Full Year/Part-Time*	
Part Year/Full-Time	
Part Year/Part-Time*	
Total Unfilled Positions in 2014	

** "Part-Time" is considered less than 35 hours per week.*

* 27. Did you encounter a significant labour shortage problem before 2014?

◯ Yes ◯ No

28. If Yes, when did you first encounter significant labour shortage challenges?

◯ Before 2012

◯ 2012

◯ 2013

29. How has your business been impacted by the labour shortages? Please click all that apply.

☐ Reduced customer service

☐ Increased business costs

☐ Increased overtime (O/T)

☐ Staff burn-out

☐ Reduced business hours

☐ Missed business opportunities

☐ Delayed business expansion

☐ Hired under-qualified staff

☐ Increased automation

☐ Considered business closure

Other (please describe)

30. If you clicked "Missed business opportunities" as an impact of the labour shortages, please describe.

* 32. Approximately what percentage (%) of your business did you lose in 2014 due to labour shortages?

33. If you lost business, approximately how much revenue did you lose in 2014 due to labour shortages?

Estimated lost revenue in 2014: $

G. CLOSING COMMENTS

* 34. Would you be willing to discuss labour shortage challenges further over the telephone?

Yes No

If yes, please provide phone number.

35. Do you have any other comments about the impact of labour shortages in your region, your specific industry or British Columbia as a whole? If these comments are important to you, they will be valuable for our study.

You can edit your responses later, if needed, by clicking on the same link.

THANK YOU VERY MUCH FOR YOUR HELP!

Appendix C: Estimated Revenue Losses by Region

Table 24: Estimated Revenue Losses by Region by Percentage Loss (1-5%) (2013 Dollars)

Gross Revenue Category of Businesses	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver, Coast & Mountains	Vancouver Island	Total
$250,000	$6,250	$6,250	$12,500	$6,250	$18,750	$417	$50,417
$375,000	$9,375	$0	$9,375	$9,375	$0	$1,250	$29,375
$625,500	$0	$0	$31,275	$15,638	$15,638	$521	$63,072
$875,000	$0	$0	$43,750	$21,875	$43,750	$2,917	$112,292
$1,125,000	$28,125	$28,125	$0	$0	$56,250	$938	$113,438
$1,375,000	$0	$0	$68,750	$0	$34,375	$0	$103,125
$1,625,000	$0	$0	$81,250	$40,625	$81,250	$2,708	$205,833
$1,875,000	$0	$0	$0	$0	$0	$4,688	$4,688
$2,125,000	$0	$0	$0	$53,125	$53,125	$5,313	$111,563
$2,375,000	$59,375	$59,375	$59,375	$59,375	$59,375	$1,979	$298,854
$2,625,000	$0	$0	$131,250	$65,625	$0	$0	$196,875
$2,875,000	$0	$0	$215,625	$0	$143,750	$2,396	$361,771
$3,000,000	$0	$75,000	$375,000	$150,000	$525,000	$20,000	$1,145,000
Total	$103,125	$168,750	$1,028,150	$421,888	$1,031,263	$43,127	$2,796,303

Source: Grant Thornton. go2HR BC Tourism Labour Shortage Economic Impact Survey. 2016.

Table 25: Estimated Revenue Losses by Region by Percentage Loss (6-10%) (2013 Dollars)

Gross Revenue Category of Businesses	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver, Coast & Mountains	Vancouver Island	Total
$250,000	$18,750	$37,500	$56,250	$18,750	$75,000	$5,966	$212,216
$375,000	$28,125	$28,125	$112,500	$0	$28,125	$6,392	$203,267
$625,500	$0	$0	$46,913	$46,913	$93,825	$2,132	$189,783
$875,000	$0	$0	$131,250	$0	$0	$5,966	$137,216
$1,125,000	$0	$0	$0	$84,375	$0	$3,835	$88,210
$1,375,000	$0	$0	$103,125	$103,125	$103,125	$0	$309,375
$1,625,000	$0	$0	$121,875	$0	$121,875	$0	$243,750
$1,875,000	$140,625	$0	$0	$0	$0	$6,392	$147,017
$2,125,000	$0	$0	$159,375	$0	$159,375	$0	$318,750
$2,375,000	$0	$0	$178,125	$0	$0	$8,097	$186,222
$2,625,000	$196,875	$196,875	$196,875	$196,875	$196,875	$17,898	$1,002,273
$2,875,000	$0	$0	$0	$215,625	$0	$0	$215,625
$3,000,000	$450,000	$0	$1,575,000	$450,000	$675,000	$20,455	$3,170,455
Total	$834,375	$262,500	$2,681,288	$1,115,663	$1,453,200	$77,133	$6,424,159

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

Table 26: Estimated Revenue Losses by Region by Percentage Loss (11-15%) (2013 Dollars)

Gross Revenue Category of Businesses	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver, Coast & Mountains	Vancouver Island	Total
$250,000	$31,250	$31,250	$93,750	$0	$31,250	$7,813	$195,313
$375,000	$46,875	$0	$140,625	$93,750	$93,750	$11,719	$386,719
$625,500	$0	$0	$78,188	$0	$156,375	$0	$234,563
$875,000	$109,375	$0	$546,875	$109,375	$0	$0	$765,625
$1,125,000	$0	$140,625	$281,250	$0	$140,625	$0	$562,500
$1,375,000	$0	$0	$0	$171,875	$0	$0	$171,875
$1,625,000	$0	$0	$0	$203,125	$0	$0	$203,125
$1,875,000	$234,375	$0	$0	$0	$0	$0	$234,375
$2,125,000	$0	$0	$265,625	$265,625	$531,250	$33,203	$1,095,703
$2,375,000	$296,875	$296,875	$593,750	$296,875	$296,875	$74,219	$1,855,469
$2,625,000	$0	$0	$0	$0	$0	$0	$0
$2,875,000	$0	$0	$0	$0	$0	$0	$0
$3,000,000	$0	$0	$375,000	$750,000	$0	$46,875	$1,171,875
Total	$718,750	$468,750	$2,375,063	$1,890,625	$1,250,125	$173,829	$6,877,142

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

Table 27: Estimated Revenue Losses by Region by Percentage Loss (16-20%) (2013 Dollars)

Gross Revenue Category of Businesses	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver, Coast & Mountains	Vancouver Island	Total
$250,000	$43,750	$0	$175,000	$43,750	$43,750	$7,292	$313,542
$375,000	$65,625	$196,875	$262,500	$65,625	$196,875	$10,938	$798,438
$625,500	$0	$0	$0	$0	$0	$18,244	$18,244
$875,000	$0	$0	$153,125	$153,125	$153,125	$0	$459,375
$1,125,000	$0	$0	$0	$0	$0	$0	$0
$1,375,000	$0	$0	$240,625	$0	$0	$40,104	$280,729
$1,625,000	$0	$0	$0	$0	$0	$0	$0
$1,875,000	$0	$0	$0	$0	$328,125	$54,688	$382,813
$2,125,000	$0	$0	$0	$0	$0	$0	$0
$2,375,000	$0	$0	$0	$0	$0	$0	$0
$2,625,000	$0	$0	$0	$0	$0	$0	$0
$2,875,000	$0	$0	$0	$0	$0	$0	$0
$3,000,000	$0	$0	$525,000	$0	$525,000	$87,500	$1,137,500
Total	$109,375	$196,875	$1,356,250	$262,500	$1,246,875	$218,766	$3,390,641

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

Table 28: Estimated Revenue Losses by Region by Percentage Loss (21-25%) (2013 Dollars)

Gross Revenue Category of Businesses	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver, Coast & Mountains	Vancouver Island	Total
$250,000	$0	$56,250	$0	$0	$0	$0	$56,250
$375,000	$0	$0	$0	$84,375	$84,375	$42,188	$210,938
$625,500	$0	$0	$0	$0	$0	$0	$0
$875,000	$0	$0	$0	$0	$196,875	$98,438	$295,313
$1,125,000	$0	$0	$253,125	$0	$0	$0	$253,125
$1,375,000	$0	$0	$0	$0	$0	$0	$0
$1,625,000	$0	$0	$0	$0	$0	$0	$0
$1,875,000	$0	$0	$0	$0	$0	$0	$0
$2,125,000	$0	$0	$0	$0	$0	$0	$0
$2,375,000	$0	$0	$0	$0	$0	$0	$0
$2,625,000	$0	$0	$0	$0	$0	$0	$0
$2,875,000	$0	$0	$0	$0	$0	$0	$0
$3,000,000	$0	$0	$0	$0	$0	$0	$0
Total	$0	$56,250	$253,125	$84,375	$281,250	$140,626	$815,626

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

Table 29: Estimated Revenue Losses by Region by Percentage Loss (26-30%) (2013 Dollars)

Gross Revenue Category of Businesses	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver, Coast & Mountains	Vancouver Island	Total
$250,000	$0	$0	$137,500	$68,750	$0	$0	$206,250
$375,000	$0	$0	$0	$0	$0	$0	$0
$625,500	$0	$0	$0	$0	$0	$0	$0
$875,000	$0	$0	$0	$0	$0	$0	$0
$1,125,000	$0	$0	$0	$0	$0	$0	$0
$1,375,000	$0	$0	$0	$0	$0	$0	$0
$1,625,000	$0	$0	$0	$0	$0	$0	$0
$1,875,000	$0	$0	$0	$0	$0	$0	$0
$2,125,000	$0	$0	$0	$0	$0	$0	$0
$2,375,000	$0	$0	$0	$0	$0	$0	$0
$2,625,000	$0	$0	$0	$0	$0	$0	$0
$2,875,000	$0	$0	$0	$0	$0	$0	$0
$3,000,000	$0	$0	$0	$0	$0	$0	$0
Total	$0	$0	$137,500	$68,750	$0	$0	$206,250

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

Table 30: Estimated Revenue Losses by Region by Percentage Loss (More than 30%) (2013 Dollars)

Gross Revenue Category of Businesses	Northern BC	Cariboo Chilcotin Coast	Thompson Okanagan	Kootenay Rockies	Vancouver, Coast & Mountains	Vancouver Island	Total
$250,000	$75,000	$0	$0	$0	$0	$75,000	$150,000
$375,000	$112,500	$0	$0	$0	$0	$0	$112,500
$625,500	$0	$0	$0	$0	$0	$0	$0
$875,000	$0	$0	$0	$0	$0	$0	$0
$1,125,000	$0	$0	$0	$0	$0	$0	$0
$1,375,000	$0	$0	$0	$0	$0	$0	$0
$1,625,000	$0	$0	$0	$0	$0	$0	$0
$1,875,000	$0	$0	$0	$0	$0	$0	$0
$2,125,000	$0	$0	$0	$0	$0	$0	$0
$2,375,000	$0	$0	$0	$0	$0	$0	$0
$2,625,000	$0	$0	$0	$0	$0	$0	$0
$2,875,000	$0	$0	$0	$0	$0	$0	$0
$3,000,000	$0	$0	$0	$0	$0	$0	$0
Total	$187,500	$0	$0	$0	$0	$75,000	$262,500

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

Appendix D: Estimated Revenue Losses by Year-Round and Seasonal Operators

Table 31: Estimated Revenue Loss by Year-Round Operators (2013 Dollars)

Gross Revenue Category of Businesses	1 - 5%	6 - 10%	11 - 15%	16 - 20%	21 - 25%	26 - 30%	> 30%	Total
$250,000	$18,750	$112,500	$93,750	$131,250	$0	$137,500	$75,000	$568,750
$375,000	$46,875	$196,875	$187,500	$131,250	$168,750	$0	$0	$731,250
$625,500	$62,550	$187,650	$234,563	$0	$0	$0	$0	$484,763
$875,000	$153,125	$262,500	$437,500	$459,375	$393,750	$0	$0	$1,706,250
$1,125,000	$84,375	$168,750	$421,875	$0	$253,125	$0	$0	$928,125
$1,375,000	$103,125	$206,250	$171,875	$240,625	$0	$0	$0	$721,875
$1,625,000	$284,375	$121,875	$203,125	$0	$0	$0	$0	$609,375
$1,875,000	$93,750	$281,250	$234,375	$328,125	$0	$0	$0	$937,500
$2,125,000	$159,375	$318,750	$1,062,500	$0	$0	$0	$0	$1,540,625
$2,375,000	$59,375	$356,250	$890,625	$0	$0	$0	$0	$1,306,250
$2,625,000	$196,875	$196,875	$0	$0	$0	$0	$0	$393,750
$2,875,000	$431,250	$215,625	$0	$0	$0	$0	$0	$646,875
$3,000,000	$1,200,000	$2,925,000	$1,125,000	$525,000	$0	$0	$0	$5,775,000
Total	$2,893,800	$5,550,150	$5,062,688	$1,815,625	$815,625	$137,500	$75,000	$16,350,388

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

Table 32: Estimated Revenue Loss by Seasonal Operators (2013 Dollars)

Gross Revenue Category of Businesses	1 - 5%	6 - 10%	11 - 15%	16 - 20%	21 - 25%	26 - 30%	> 30%	Total
$250,000	$31,250	$150,000	$156,250	$175,000	$56,250	$68,750	$150,000	$787,500
$375,000	$18,750	$140,625	$140,625	$131,250	$84,375	$0	$112,500	$628,125
$625,500	$15,638	$46,913	$0	$109,463	$0	$0	$0	$172,013
$875,000	$43,750	$0	$218,750	$0	$0	$0	$0	$262,500
$1,125,000	$56,250	$0	$140,625	$0	$0	$0	$0	$196,875
$1,375,000	$0	$0	$0	$240,625	$0	$0	$0	$240,625
$1,625,000	$0	$121,875	$0	$0	$0	$0	$0	$121,875
$1,875,000	$46,875	$0	$0	$0	$0	$0	$0	$46,875
$2,125,000	$106,250	$0	$0	$0	$0	$0	$0	$106,250
$2,375,000	$0	$0	$0	$0	$0	$0	$0	$0
$2,625,000	$0	$196,875	$0	$0	$0	$0	$0	$196,875
$2,875,000	$0	$0	$0	$0	$0	$0	$0	$0
$3,000,000	$375,000	$225,000	$375,000	$0	$0	$0	$0	$975,000
Total	$693,763	$881,288	$1,031,250	$656,338	$140,625	$68,750	$262,500	$3,734,513

Source: go2HR BC Tourism Labour Shortage Economic Impact Survey, Grant Thornton, 2016.

Appendix E: Shadow Prices and Objective Function Values

Table 33: The Shadow Prices and Objective Function Values

***** RESULTS – CONSTRAINTS *****

Constraint	Value	RHS	Dual Price
Row1	1/0	1/0	0.180103
Row2	1.28E+09	1.28E+09	0.383342
Row3	2.63E+08	2.63E+08	0.300758
Row4	2.42E+08	2.42E+08	0.561851
Row5	1/0	1/0	0.598614
Row6	1/0	1/0	0.726972
Row7	1/0	1/0	0.478885
Row8	1/0	1/0	0.457023
Row9	1/0	1/0	0.473871
Row10	5.30E+07	5.30E+07	0.0489397
Row11	2.51E+08	2.51E+08	0.114278
Row12	1/0	1/0	0.351756
Row13	1/0	1/0	0.414735
Row14	1/0	1/0	0.0847222
Row15	1/0	1/0	0.377553
Row16	1/0	1/0	0.539946
Row17	-1/0	1/0	0
Row18	1/0	1/0	0.407221
Row19	1/0	1/0	0.442424
Row20	1/0	1/0	0.218692
Row21	9.28E+08	9.28E+08	0.185158
Row22	-1/0	1/0	0
Row23	1/0	1/0	0.118948
Row24	-4.69E+08	1/0	0
Row25	1/0	1/0	0.148511
Row26	-1/0	0	0
Row27	-1/0	0	0
Row28	-1/0	1/0	0
Row29	1/0	1/0	0.132881
Row30	1/0	1/0	0.403682
Row31	1/0	1/0	0.538366
Row32	1/0	1/0	0.65599
Row33	1/0	1/0	0.372058
Row34	1/0	1/0	0.57421
Row35	8.64E+08	8.64E+08	0.607586
Row36	2.26E+06	2.26E+06	42436.3

Source: Econometric Research Limited

INFO: Feasible solution FOUND after 0 iterations

Phase:	2 Iteration:	10 Objective:	6.156492922e+010
Phase:	2 Iteration:	20 Objective:	1.434014035e+011
Phase:	2 Iteration:	30 Objective:	1.790477129e+011
Phase:	**2 Iteration:**	**40 Objective:**	**2.115202005e+011**

INFO: Finished after 36 iterations and 0.00 seconds

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