

Memo

Date: June 17, 2011
File: 165-01
To: City Manager
From: Sam Samaddar, Airport Director
Subject: Economic Impact Study - Kelowna International Airport



Recommendation:

THAT Council receive for information the report and presentation with respect to the 2010 Kelowna International Airport Economic Impact Study as set out in Appendix "A" attached to the Report of the Airport Director dated June 17, 2011.

Purpose:

To report to Council the results of the economic impact study of Kelowna International Airport (YLW). The purpose of this study is to document the economic contribution of the airport, its airlines, and partner businesses to the community and the province.

Background:

Growth at the City of Kelowna International Airport represents a significant achievement for the community, and is a shining legacy of the decision of civic leaders in 1946 to acquire the land that is now the airport. With just under 1.4 million passengers served at the facility, the airport generates benefits not only for the City itself, but far beyond its boundaries into the Thomson-Okanagan Region.

This study found that the direct impacts of YLW in 2010 include:

- 1,400 direct jobs associated with YLW, representing 1,290 direct person years of employment.
- The direct economic impact of this employment on the provincial economy is:
 - \$120 million in gross domestic product (GDP);
 - \$300 million in economic output; and
 - \$70 million in wages.

Ongoing operations at YLW contribute to employment in the transportation industry in the Thompson-Okanagan region. Direct and total jobs attributed to operations at YLW make up 14% and 26%, respectively, of employment in the transportation and warehousing industry of the Thompson-Okanagan region.

Total impacts are calculated by adding together the direct, indirect, and induced impacts. The total economic impacts of on-going operations at YLW on the provincial economy are summarised in Table 1. Ongoing operations at YLW may be supporting up to 2,730 in total (direct, indirect and induced) jobs and \$610 million in total economic output, economy-wide in British Columbia.

Table 1: On-Going Total Economic Impacts of YLW in British Columbia

Type of Impact	Jobs	Person Years	Wages (\$ million)	GDP (\$ million)	Economic Output (\$ million)
Direct	1,400	1,290	70	120	300
Indirect	640	590	30	60	160
Induced	690	640	40	70	150
Total	2,730	2,520	140	250	610

The majority of jobs at YLW are permanent and full-time positions, of which 47% of surveyed positions are for highly skilled aviation jobs.

The employment survey administered to employers at YLW also revealed some interesting characteristics:

- 97% of jobs at YLW are permanent (non-seasonal) and 83% of these are full-time jobs.
- Employees at YLW and related firms (including on-site and off-site firms) earned approximately \$70 million in wages, yielding an average wage in excess of \$50,000 per person year of employment per annum.
- Contract employees and firms providing services to YLW and related firms contributed 20 additional person years of employment, based on survey responses.
- Over 600 or 47% of surveyed positions are classified as airline and aircraft servicing jobs by YLW employers. Aircraft and vehicle mechanics are the largest component with nearly 300 jobs.
- The share of direct employment for passenger operations makes up approximately 60% of all employment, with cargo accounting for 30% of employment.
- On-going economic activity at the airport contributes over \$30 million annually in tax revenue to all levels of government:
 - The federal government was the largest recipient of tax revenue, receiving nearly \$22 million (73% of total tax revenue).
 - The provincial government received over \$7 million in tax revenue (24% of total tax revenue).
 - The municipal government collected approximately \$1 million in tax revenue (3% of total tax revenue).
- Approximately 23% of taxes were paid by air travellers, and the remaining 77% of taxes were paid by airport employers and their employees.
- Kelowna International Airport does not pay any property taxes to the City of Kelowna as it is owned and operated by the City. Instead, YLW pays the City a Municipal

Services Fee of \$266,000 for services such as police, fire, and planning and development services.

- In addition, the airport is not required to make any federal lease payments to the Federal Government at the current time.

Employment is created each time an aircraft lands at YLW.

- A daily short-haul service to Calgary generates 16 person years of employment and \$950,000 in wages annually at YLW.
- A daily long-haul service to Toronto generates 21 person years of employment and \$1.2 million in wages annually at YLW.

The full study and a synopsis highlighting the findings of the study are attached for reference.

Community & Media Relations Comments:

A communications plan for the Economic Impact Report has been completed which includes opportunities to share copies of the Report, the summary and/or boarding passes to interested businesses and community groups as well as the general public.

Considerations not applicable to this report:

Financial/Budgetary Considerations: N/A

Internal Circulation: N/A

Legal/Statutory Authority: N/A

Legal/Statutory Procedural Requirements: N/A

Existing Policy: N/A

Personnel Implications: N/A

External Agency/Public Comments: N/A

Alternate Recommendation: N/A

Submitted by:



S. Samaddar, Airport Director

Approved for inclusion:



Paul Macklem, General Manager Corporate Sustainability



Schedule "A"



Kelowna International Airport

2010 Kelowna International Airport Economic Impact Study

FINAL REPORT

February 2011

Vancouver

Kelowna

London

Toronto

Frankfurt

Denver

New York

Los Angeles

Cancun

Dubai

Singapore



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Executive Summary

Inter *VISTAS* Consulting Inc. was commissioned by Kelowna International Airport to conduct an economic impact study for Kelowna International Airport's (YLW) operations in 2010.¹ The purpose of this study is to document the economic contribution of the airport, its airlines and their partner businesses to the community and the province.

Ongoing operations at YLW generates 1,290 direct person years of employment and nearly \$70 million in direct wages

Direct Economic Impacts

Direct economic impact measures the employment and economic impact directly associated with the airport (e.g., airlines, ground handling, airport operations, air traffic control, etc.). Indirect and induced impacts are multiplier impacts in the wider economy stimulated by the airport's activities (e.g., other businesses that supply goods and services to the airport and spending by airport employees, respectively).

Emphasis is placed on the direct economic impacts as these are based on data from the employer survey and are clearly identifiable. The multiplier impacts are inferred from Statistics Canada data and are therefore less measurable.²

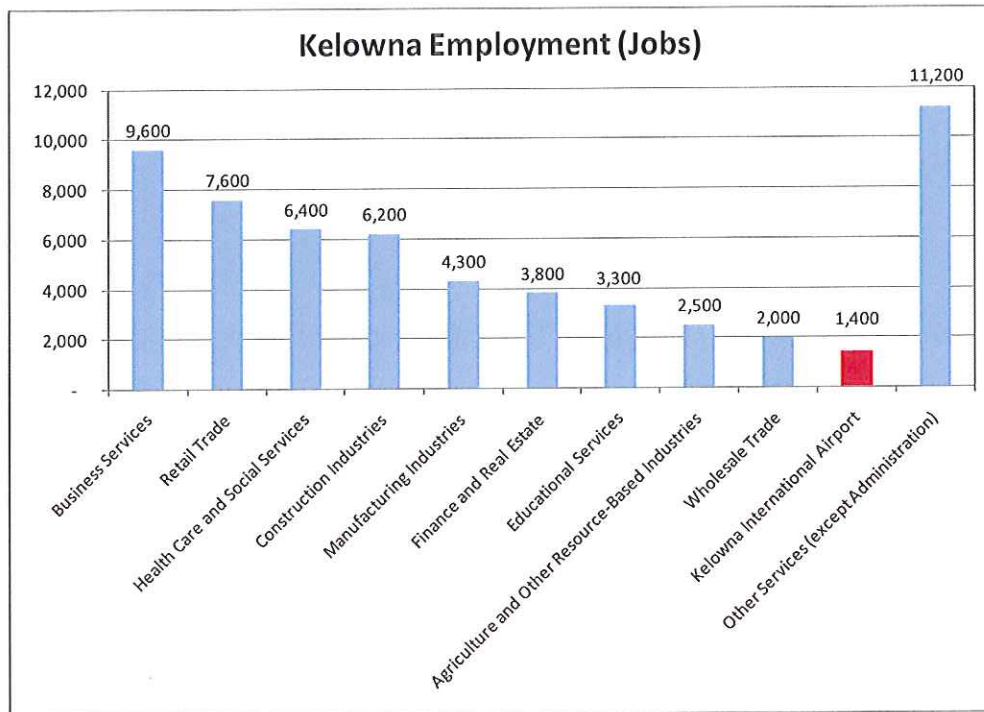
This study found that the direct impacts of YLW in 2010 include:

- 1,400 direct jobs associated with YLW, representing 1,290 direct person years of employment.
- The direct economic impact of this employment on the provincial economy is:
 - \$120 million in gross domestic product (GDP);
 - \$300 million in economic output; and
 - \$70 million in wages.

¹ Taxation impacts are based on calendar year 2009. Employment, wage, GDP and economic output impacts are based on 2010 operations.

² Multiplier impacts must be interpreted with caution since they may be illusory when the economy experiences high employment and output near industry capacity.

Table ES-1: Comparison of Direct YLW Jobs and Other Industries in Kelowna



Ongoing operations at YLW contributes a total of 2,730 jobs and \$610 million in total economic output to the province

Total Impacts

Total impacts are calculated by adding together the direct, indirect and induced impacts. The total economic impacts of on-going operations at YLW on the provincial economy are summarised in **Table ES-1**. Ongoing operations at YLW may be supporting up to 2,730 in total (direct, indirect and induced) jobs and \$610 million in total economic output, economy-wide in British Columbia.

Table ES-1: On-Going Total Economic Impacts of YLW in British Columbia

Type of Impact	Jobs	Person Years	Wages (\$ million)	GDP (\$ million)	Economic Output (\$ million)
Direct	1,400	1,290	70	120	300
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Total	2,730	2,520	140	250	610

Ongoing operations at YLW contribute to employment in the transportation industry in the Thompson-Okanagan region. Direct and total jobs attributed to operations at YLW make up 14% and 26%, respectively, of employment in the transportation and warehousing industry of the Thompson-Okanagan region.³

Majority of jobs at YLW are permanent and full-time positions, and 47% of surveyed positions are for high skilled aviation jobs

The employment survey administered to employers at YLW also revealed some interesting characteristics:

- 97% of jobs at YLW are permanent (non-seasonal) and 83% of these are full-time jobs.
- Employees at YLW and related firms (including on-site and off-site firms) earned approximately \$70 million in wages, yielding an average wage in excess of \$50,000 per person year of employment per annum.⁴
- Contract employees and firms providing services to YLW and related firms contributed 20 additional person years of employment, based on survey responses.
- Over 600 or 47% of surveyed positions are classified as airlines and aircraft servicing jobs by YLW employers. Aircraft and vehicle mechanics are the largest component with nearly 300 jobs.
- The share of direct employment for passenger operations makes up approximately 60% of all employment, with cargo accounting for 30% of employment.

³ This is based on the 2009 employment by industry figures for Thompson Okanagan in the *2010 Economic Profile Regional District of the Central Okanagan* by the Central Okanagan Economic Development Commission, 2010.

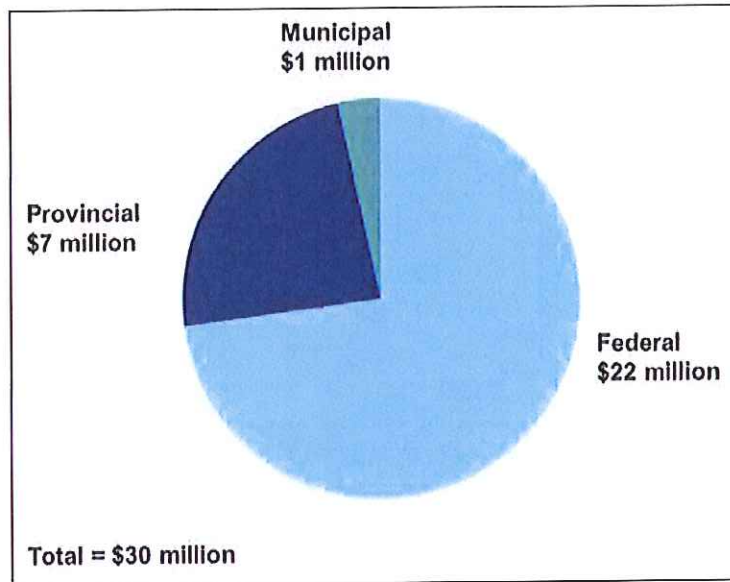
⁴ This is based on the average of all wages by employment type.

Ongoing operations at YLW generate \$30 million per annum in government tax revenues

Significant Tax Contributions

- On-going economic activity at the airport contributes over \$30 million annually in tax revenue to all levels of government (See **Figure ES-2**):
 - The federal government was the largest recipient of tax revenue, receiving nearly \$22 million (73% of total tax revenue).
 - The provincial government received over \$7 million in tax revenue (24% of total tax revenue).
 - The municipal government collected approximately \$1 million in tax revenue (3% of total tax revenue).
- Approximately 23% of taxes were paid by air travellers, and the remaining 77% of taxes were paid by airport employers and their employees.
- Kelowna International Airport does not pay any property taxes to the City of Kelowna as it is owned and operated by the City. Instead, YLW pays the city a Municipal Services Fee of \$266,000 for services such as police, fire, and planning and development services.
- In addition, the airport is not required to make any federal lease payments to the Federal Government at the current time.

Figure ES-2: Estimated Annual Tax Revenues to Government



Employment is created each time an aircraft lands at YLW

- A daily short-haul service to Calgary generates 16 person years of employment and \$950,000 in wages annually at YLW.
- A daily long-haul service to Toronto generates 21 person years of employment and \$1.2 million in wages annually at YLW.

YLW's services to Calgary and Toronto have strategic importance both to the airport's role as a regional hub and to Kelowna as a destination

- Daily short-haul service to Calgary connects Kelowna to Calgary's international network of services to U.K., Germany, France and Japan among others. Calgary has become an important connecting hub to Europe and Asia for Kelowna.
- Daily long-haul service to Toronto connects Kelowna to the leisure and business travel market from Toronto – it is estimated that there are over 75,000 origin-destination passengers from Toronto that visit Kelowna each year.

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1. Introduction

Kelowna International Airport commissioned Inter *VSTAS* Consulting Inc. to conduct an economic impact study of Kelowna International Airport (YLW) in 2010. The City of Kelowna is responsible for the operation and management of the Kelowna International Airport.

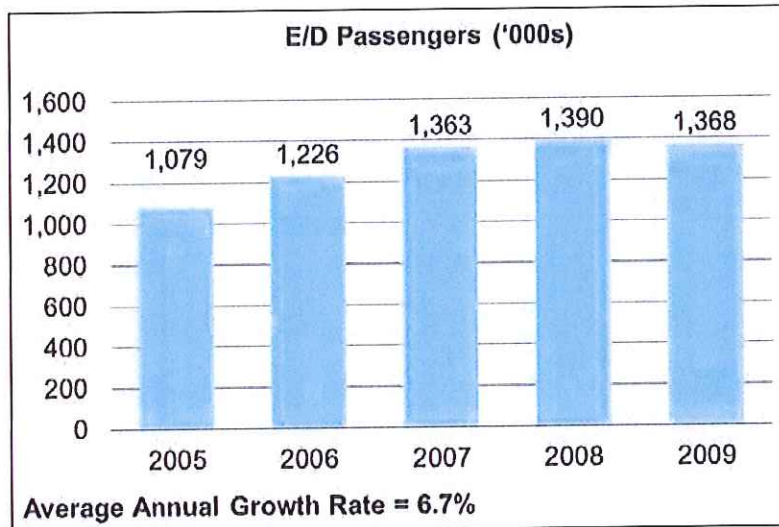
1.1 Kelowna International Airport

YLW is a major contributor to the British Columbia economy and plays a key role in facilitating the growth of trade and tourism between British Columbia, the rest of Canada and the world by providing air links to connect Kelowna and the Thompson-Okanagan to other business centres and destinations. YLW handles over 1.3 million enplaned/deplaned passengers per year.

The airport is currently served by Air Canada, Air Canada Jazz, Central Mountain Air, Horizon Air and WestJet, which provides YLW with scheduled services. Charter services are provided by Canjet Airlines and Sunwing Airlines. YLW's air service network includes operations to/from Vancouver, Victoria, Prince George, Calgary, Edmonton, Seattle, Las Vegas, Toronto and Mexico (seasonal). In addition, nonstop services are offered between YLW and three Mexico cities – Cabo, Cancun and Puerto Vallarta. As shown in **Figure 1-1**, the airport has recorded consistent air passenger traffic growth over the last several years. The average annual growth rate of passengers from 2005 to 2009 was 6.7%. In 2009, the airport experienced a marginal decline as air travel slowed due to the global economic downturn.

Scheduled services to YLW include direct non-stop flights to Kelowna from 7 cities within Canada and transborder services to Seattle. Total direct non-stop scheduled services to Kelowna in July 2010 included over 19,000 seats per week. Weekly seat capacity of total scheduled services to Kelowna increased by 12.5% from 2005 to 2010. A summary of the air services is provided in **Table 1-1**.

Figure 1-1: Growth of Air Passenger Traffic at YLW



Source: Kelowna International Airport Annual Report, 2009.

Table 1-1: Direct Non-stop Flights Arriving in Kelowna International Airport (YLW) – July 2005 and 2010

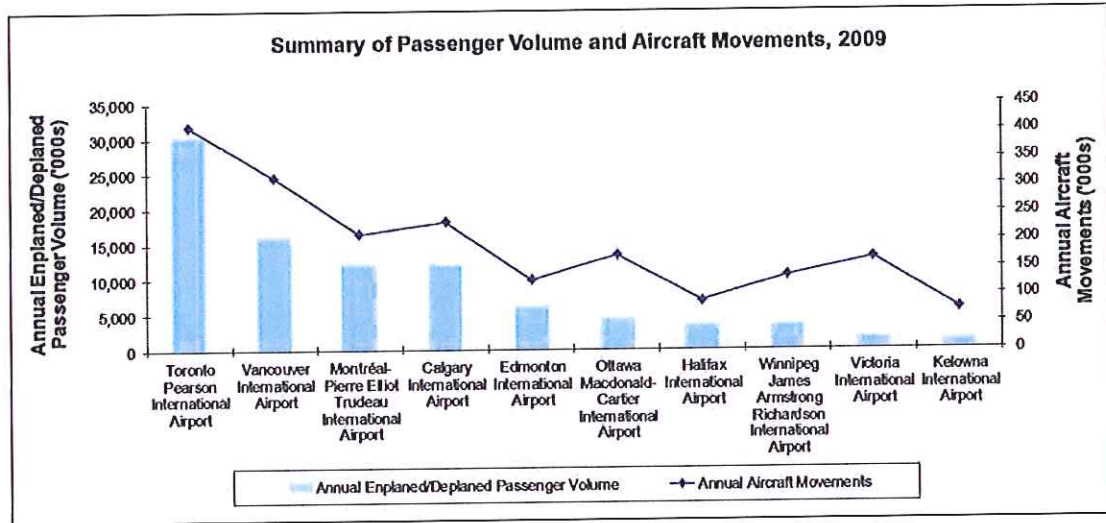
Country	City	Weekly Seat Capacity 2005	Weekly Seat Capacity 2010	% Change
Canada	Calgary	4,857	6,041	+24.4%
	Vancouver	5,562	5,274	-5.2%
	Edmonton	2,397	3,689	+53.9%
	Toronto	956	1,467	+53.5%
	Victoria (CA)	1,974	952	-51.8%
	Prince George	114	108	-5.3%
	Grande Prairie	38	-	-100.0%
Canada Total		15,898	17,531	+10.3%
U.S.A.	Seattle	1,036	1,520	+46.7%
U.S.A. Total		1,036	1,520	+46.7%
Grand Total		16,934	19,051	+12.5%

Source: Official Airline Guide (OAG). Based on summer services for week of 11 July 2010 and 12 July 2010.

Relative to other airports in Canada, passenger volume and aircraft movement at YLW ranks in the top 10, as shown in Figure 1-2 below. For the year 2009, annual

enplaned/deplaned passenger volume at YLW was nearly 1.4 million and annual aircraft movements were nearly 73,000.

Figure 1-2: Top 10 Airports in Canada Based on Passenger Volume and Aircraft Movements



Source: Statistics Canada and Individual Airport Statistics.

YLW contributes directly to the provincial and national Gross Domestic Product and to employment in the Kelowna region through its business activities and operations. More importantly, it also acts as an economic catalyst, facilitating the growth of regional businesses and industrial sectors by providing air links to the region. The economic contribution of the airport to the community is termed the economic impact of YLW. This study examines the economic impact of the airport on the provincial economy. One of the most important components of the YLW economic impact is given particular attention here: *Employment Impact*.

1.2 What is Economic Impact?

Economic impact is a measure of the spending and employment associated with a sector of the economy, a specific project (such as the construction of a new facility), or a change in government policy or regulation. Economic impact can be measured in various ways. Two of the most popular ways to assess economic impact are in terms of the dollar value of industrial output produced, or in terms of person years (full-time equivalents (FTEs)) of employment generated. Other measures include value-added (GDP) and the value of capital used and/or created. All of these are used to express the gross level of activity or expenditure from a sector of the economy, a specific project or a change in policy or regulation. As such, they are not “net” measures that weigh benefits against costs; nevertheless these measures can be useful in developing an appreciation of projects, investments and economic sectors.

1.3 Study Outline

This report provides an estimate of the economic impacts of employment related to YLW.

- **Chapter 2** explains the methodology for estimating the current economic impact of Kelowna International Airport.
- **Chapter 3** measures and describes the direct employment base from the results of a survey of employers related to the operations at Kelowna International Airport.
- **Chapter 4** uses multipliers to infer indirect and induced employment impacts related to YLW operations.
- **Chapter 5** uses multipliers to infer GDP and economic output impacts related to YLW operations.
- **Chapter 6** measures the tax contribution of YLW by estimating taxes paid by employers, employees and passengers using the airport.
- **Chapter 7** outlines the microeconomic impact related to specific passenger services and details the process and employment associated with each service.
- **Chapter 8** summarises the economic impact study results.

2. Methodology

2.1 Estimating Current Economic Impact

The direct employment base related to on-going operations at YLW is first measured. Employment figures are generally more understandable by the public than more abstract measures such as economic output or GDP. Employment figures also have the advantage of being a more accurate measure, both because the firms are more likely to provide data on employment, as opposed to information on revenues, wages and other monetary amounts, and because there is less chance of double counting economic activity.⁵

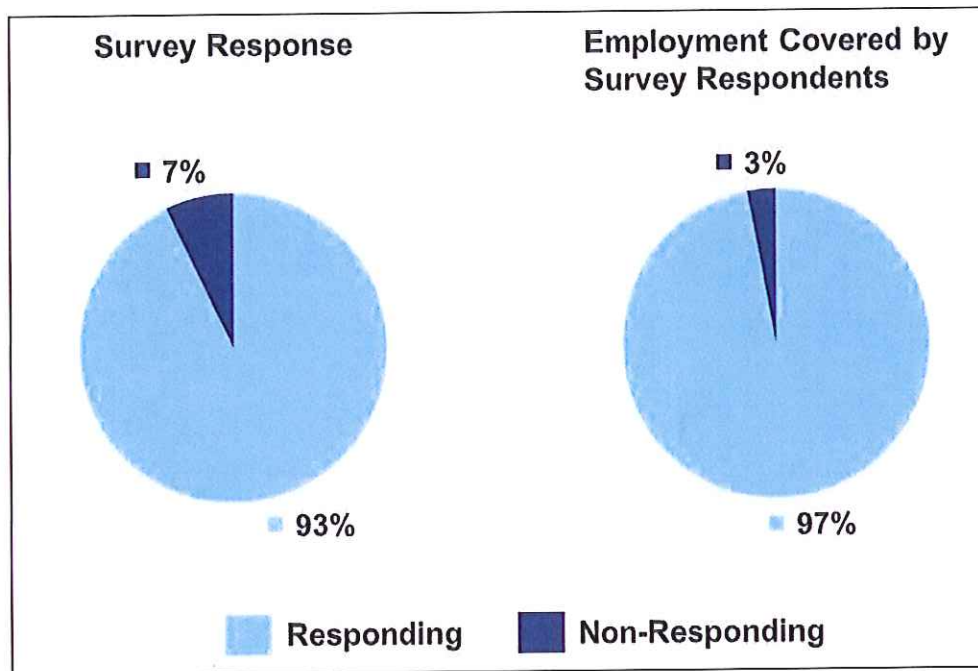
The economic impact study then assesses the indirect and induced (or “multiplier”) employment supported by YLW’s related operations, as well as economic activity in terms of economic output and GDP using Statistics Canada’s economic multipliers. The tax revenues generated annually by operations at Kelowna International Airport are also estimated.

2.2 Surveying Direct Employment

Employment attributable to on-going YLW operations was measured by surveying 118 tenants and related businesses and organizations located at YLW and other businesses economically linked to the airport. Specifics of the survey methodology are contained in the **Appendices** and a sample copy of the survey is provided in **Appendix B**. Telephone follow-up was conducted to increase the response rate. In total, 93% of the businesses and organisations contacted responded to the survey, representing over 97% of total person years of employment covered by the survey.

⁵ For example, revenues reported by an air carrier would double count revenues received by caterers. The caterer’s revenue is an expense for the airline.

Figure 2-1: Response Rate (Employers and Person Years)



2.3 Inferring Employment

Employment was “inferred” for firms that did not respond to the survey by using a proven and accepted methodology.⁶ This includes using other sources of employment information such as past employment surveys (if applicable) or using survey results for firms of similar types. A conservative approach was taken when using other survey or employment information to infer for non-responding firms.

There may be firms which were not surveyed simply because it was not known that they existed. We do not include an estimate of employment for such non-surveyed firms because there is no basis for an assessment. In any event, we expect most of these to be very small in terms of missed employment (See **Appendix E** and **Appendix F**).

⁶ The methodology employed in this study to infer for non-respondents is also used by the federal government for estimating the national income and product accounts.

2.4 Direct versus Indirect versus Induced Employment

Employment can be broken down into the following categories:

Direct economic impact is employment that can be attributed to the operation and management of YLW including firms on-site at the airport and airport-dependent businesses off-site. Thus, the direct employment base includes employees of airlines, aircraft maintenance, airport operators, among others, on-site at the airport plus off-site parts suppliers and couriers.

Indirect economic impact is employment in down-stream industries that results from the presence of YLW. For example, suppliers of food to businesses at YLW would be considered indirect employment. Indirect employment is generated in industries that supply or provide services to the airport.

Induced economic impact is employment generated from expenditures by individuals employed indirectly or directly. For example, if an airline maintenance firm employee at YLW decides to expand or re-model his/her home, this would result in additional (induced) employment hours in the general economy. The home renovation project would support hours of induced employment in the construction industry, the construction materials industry, etc.

Total economic impact is the sum of direct, indirect and induced effects. The multiplier (indirect and induced) economic impacts represent the maximum potential stimulus to the economy resulting from activity of YLW related businesses.

2.5 Economic Multipliers

Measurement of indirect and induced economic activity is difficult. While it might be possible to conduct a survey of such employers, the survey would need to cover thousands of firms for indirect employment. For induced employment, the entire economy would need to be scrutinised. In addition to the time and financial resources needed to conduct such surveys, the quality of responses would be suspect.

As an alternative to costly and inaccurate surveys, indirect and induced effects are typically measured by the use of *economic multipliers*. Multipliers are derived from economic/ statistical/accounting models of the general economy.⁷ They come in a variety of forms and differ greatly in definition and application. Thus, great care must be exercised in choosing the appropriate set of multipliers to use. In addition, the use of multiplier analysis is limited by a number of factors, these being:

- the accuracy of the structure and parameters of the underlying model;
- the level of unemployment in the economy;
- the assumption of constant returns to scale in production;

⁷ The multipliers used for the analysis are based on Statistics Canada economic multipliers for British Columbia from the 2006 Interprovincial Input-Output model, the most recent available. These multipliers were updated with Consumer Price Indices to account for inflation.

- the assumption that the economy's structure is static over time; and
- the assumption that there are no displacement effects.

Multiplier impacts must be interpreted with caution since they may be illusory when the economy experiences high employment and output near industry capacity. In general, the use and reporting of multiplier impacts is discouraged. When they are reported, it is recommended that the reader be reminded of the limitations on the use of multipliers. Mindful of these limitations, this study has undertaken multiplier analysis to estimate indirect and induced employment.

2.6 Study Time Frame

The employment survey was conducted between June to August 2010 and the results reflect employment as of June 2010. See **Appendix A** for more details on the employment survey process and **Appendix B** for a copy of the employment survey.

2.7 Jobs versus Person Years

Traditionally, one measures employment by the number of jobs. However, when part-time and/or seasonal workers are used, this can be a misleading measure resulting in an overstatement of economic impact. Whenever possible, employment impacts are measured both in terms of the number of jobs and the number of person years.⁸

⁸ One person year is equivalent to 1,832 hours of work. See **Appendix C** for a detailed calculation of the number of hours per person year. 1 person year (PY) is equal to 1 full time equivalent (FTE).

2.8 Comparison of Economic Impact Estimates for Kelowna International Airport

In 2001, Kelowna International Airport undertook a study of its economic impact based upon an economic impact model that was originally developed by the University of Manitoba. This model of measuring economic impact was also used by Transport Canada previously. This non-survey based study yielded an economic impact result of 1,834 person years and \$310 million in economic output for the airport was conducted by Jocelyn Purcell, Marketing & Communications.

In the City of Kelowna International Airport Master Plan 2025, prepared by InterVISTAS in 2005, there was an order-of-magnitude estimate of economic impact of the airport in 2015. This estimate was based upon mid-range forecasts using a methodology of applying a passenger to employment ratio to determine an estimated economic impact for the airport in future years. The incremental estimates were based on previous economic impact studies conducted by InterVISTAS of airports of similar size to YLW. The potential incremental economic impact was then added to the base economic impact developed in 2001 as an order-of-magnitude estimate.

To conduct the 2010 economic impact study, InterVISTAS did not rely upon factor-based macro estimates of impact. Instead the firm provided a much more robust and detailed approach using a survey-based methodology that collected information directly from airport tenants and also firms that are located off-airport that rely on YLW for its operations. Data collected from the survey accounted for 97% of the total direct person years. The overall survey response rate was also very high at 93% of total surveys sent out. The total economic impact (including direct, indirect and induced impacts) of YLW in 2010 results in over 2,500 person years of employment generating over \$600 million in economic output. Focusing only on direct impacts, this equates to nearly 1,300 person years of employment and \$300 million of economic output generated by YLW.

There are sizable methodological differences between the 2001-2005 and 2010 study approaches; these should not be directly compared. The earlier methodologies are appropriate for order-of-magnitude estimates. The 2010 study uses a methodology that major airports such as YVR, YEG and YOW have employed to better and more accurately represent jobs, economic output and benefits of the airport.

3. Direct Economic Impacts

3.1 Introduction

This section describes the total employment in both jobs and person years (or equivalently FTEs) and estimated payroll, attributable to employers directly related to on-going operations at YLW.

This section also examines the employment due to on-going operations at YLW in more detail.

Jobs are broken down by:

- Full-time versus part-time and seasonal employment; and
- Employment by trade.

YLW supports:

- 1,400 direct jobs
- 1,290 direct person years of employment
- \$70 million in wages

3.2 Jobs and person years

Direct employment related to on-going operations at YLW amounts to 1,400 jobs. After adjusting for part-time and seasonal employment, the 1,400 jobs amount to 1,290 person years of employment, resulting in a jobs to person ratio of 1.09.⁹

3.3 Wages

Employees at YLW and related firms earn nearly \$70 million in wages, yielding an average direct wage in excess of \$50,000 per person year of employment per annum.¹⁰ Employment figures are summarised in **Table 3-1** for wages as well as jobs and person years.

⁹ Of this total, less than 3% or 34 person years of employment were inferred for firms that did not respond to the survey. See **Appendix E**.

¹⁰ This is based on the average of all wages by employment type.

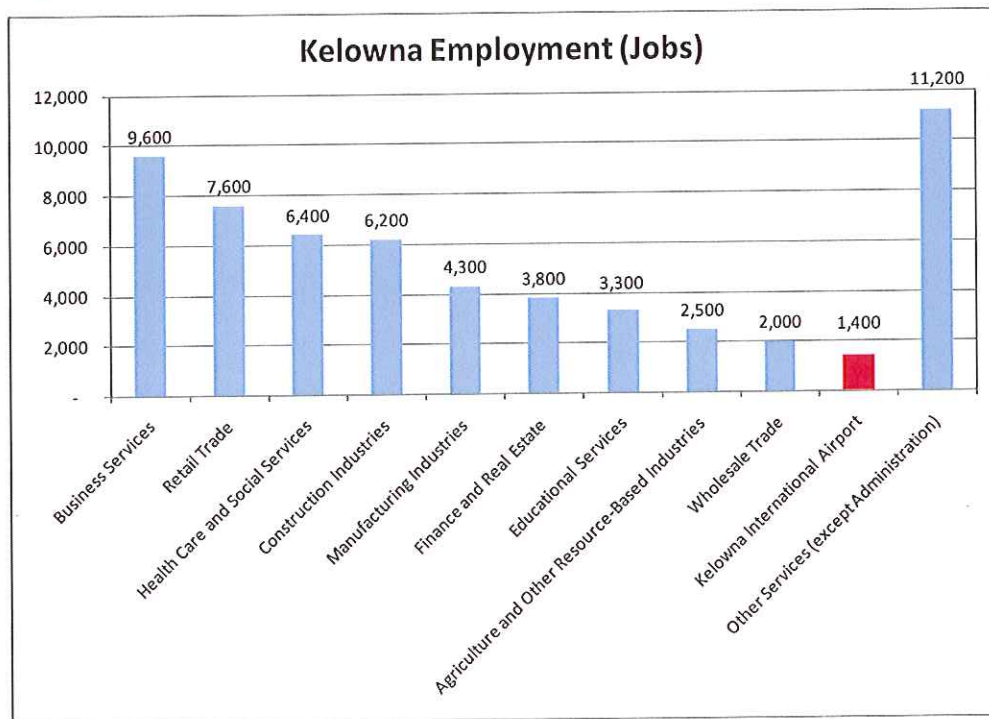
Table 3-1: Direct Employment and Wages at YLW

	Jobs	Person Years	Wages (\$ million)
Direct Employment	1,400	1,290	\$70

3.4 Comparison of YLW Direct Employment and Other Industries in Kelowna

As of the 2006 Census, there are an estimated 56,800 people over the age of 15 years of age that comprise the community's labour force.

Figure 3-1: Comparison of YLW Direct Employment and Other Industries in Kelowna



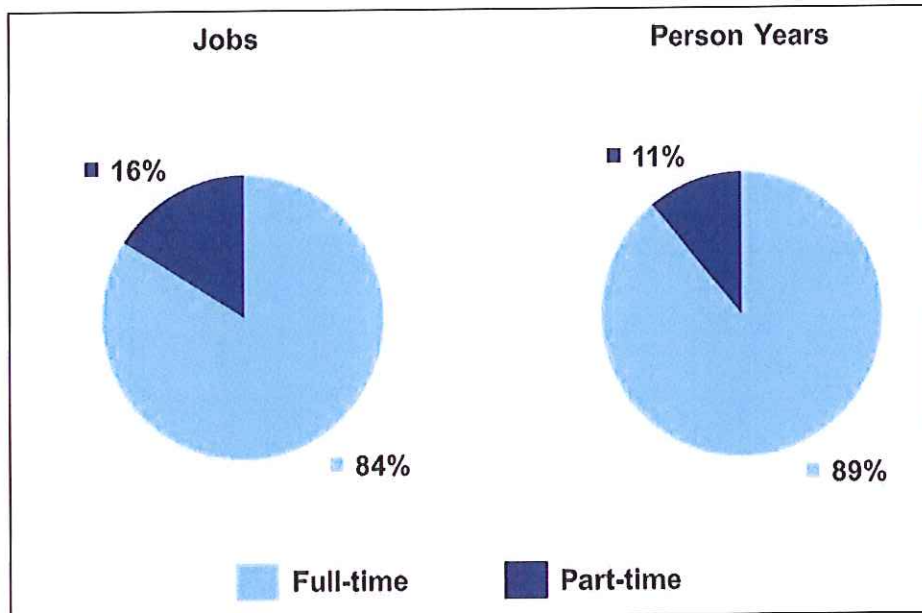
Source: Central Okanagan Economic Development Commission.

3.5 Full-time versus part-time and seasonal employment

A total of 1,400 direct jobs are attributable to YLW operations in 2010. Of these jobs, 1,290 (or 93%) jobs are from onsite firms located at the airport. About 97% of these are permanent jobs, and 83% of these permanent jobs are full-time positions. This

demonstrates that YLW is a source of stable, year-round employment. The breakdown of YLW person years by full-time and part-time positions is presented in **Figure 3-2**.

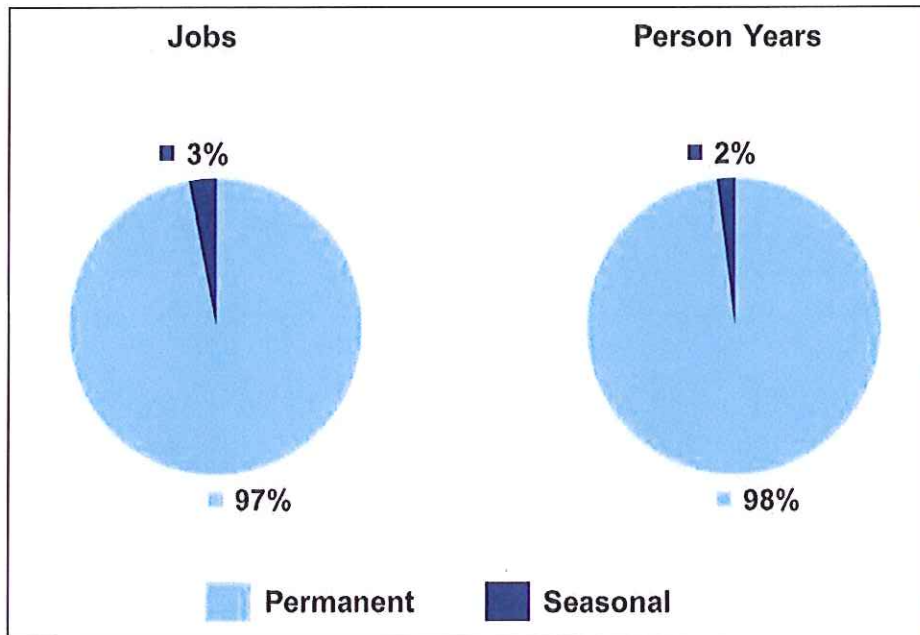
Figure 3-2: Full-Time Versus Part-Time YLW Employment



Note: The chart includes onsite and offsite firms.

Figure 3-3 shows that the seasonal component of YLW’s employment base was 3% of total surveyed jobs.

Figure 3-3: Permanent versus Seasonal YLW Employment



Note: The chart includes onsite and offsite firms.

3.5.1 Contract employment

Some airport employers contract out services to individuals and other firms. It is estimated that 38 jobs, equivalent to 20 person years of employment, are from contract firms and individuals operating at the airport. Employers indicated 27 contract individuals working firms at YLW, equivalent to 10 person years of employment.

A total of 20 person years of employment depend on labour contracts with YLW employers and related firms.

3.6 Employment by job type

YLW is a source of employment opportunities for individuals with a broad range of skills. Most businesses require a combination of management, clerical and trades as employees. Beyond that breakdown, jobs can also be classified into airline and airline-servicing trades, support trades, retail trades and general trades. These broad classes of job types are reported for surveyed jobs

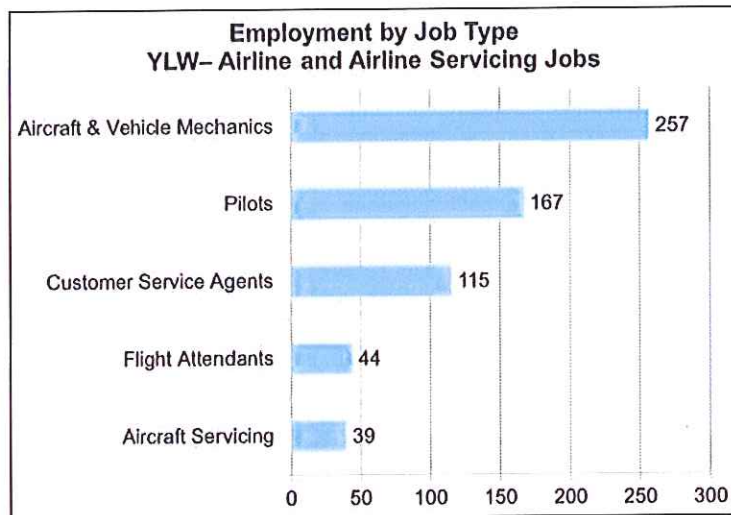
47% of surveyed positions are classified as airlines and aircraft servicing jobs by YLW employers.

only with more detail below.

3.6.1 Airline and airline servicing trade jobs

Over 600 or 47% of surveyed positions are classified as airlines and aircraft servicing jobs by YLW employers. Aircraft and vehicle mechanics are the largest component with nearly 300 jobs, followed by pilots with nearly 200 jobs.

Figure 3-4: Breakdown of YLW Airline and Airline Servicing Jobs



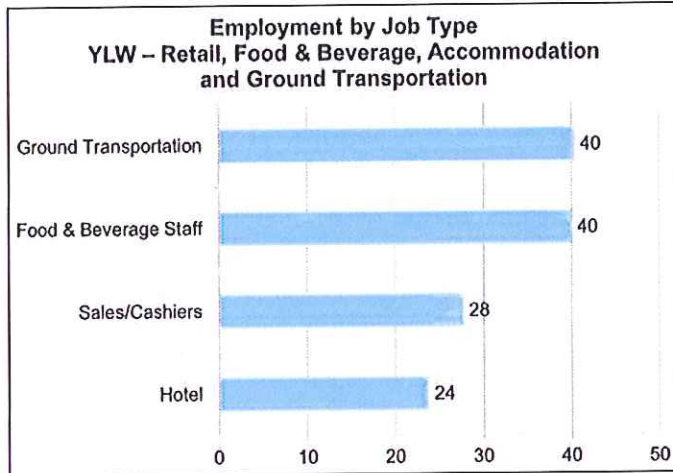
3.6.2 Support trades

Support trades account for 11% of YLW’s surveyed direct employment base with over 150 jobs. Support trades are made up of security agents, air traffic control, drivers and dispatchers.

3.6.3 Retail, food and beverage, accommodation and ground transportation jobs

Approximately 130 individuals, 10% of surveyed employment, are employed in the retail, food and beverage, accommodation and ground transportation trades serving YLW.

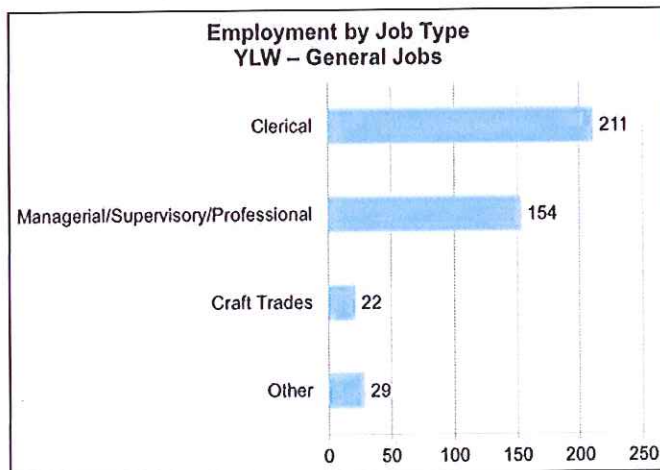
Figure 3-5: Breakdown of Retail, Food & Beverage, Accommodation and Ground Transportation Jobs



3.6.4 General jobs

Approximately 31% (over 400 jobs) of the total surveyed jobs can be classified as managerial/supervisory, clerical, craft trades.

Figure 3-6: Breakdown of General Jobs at YLW



3.7 Employment by type of firm

Employers at YLW can be separated into several distinct categories. Table 3-2 compares jobs, person years and the number of firms for 2010. The largest employment base at YLW is provided by aircraft maintenance, contributing over 600 jobs.

Table 3-2: Employment by Business Type

Type of Business	Jobs	Person Years	Firms	% Share of Employment
Aircraft Maintenance	623	620	3	48.1%
Charter Carrier	150	124	9	9.6%
Security Firm	120	113	2	8.8%
Scheduled Canadian Carrier	98	71	3	5.5%
Airport Retail Outlet, Restaurant, etc.	60	51	1	4.0%
Car Rental	54	47	3	3.6%
Freight Forwarder, Cargo Agent, etc.	54	43	5	3.3%
Ground Transportation	42	38	15	2.9%
Airport Administration	36	34	1	2.7%
Government Agency/Department	25	24	3	1.9%
Accommodations	24	24	39	1.8%
Air Traffic Control	18	19	1	1.5%
Facility Operator	15	19	2	1.5%
Scheduled Non-Canadian Carrier	18	13	1	1.0%
Aircraft Ground Handler	12	12	1	0.9%
Helicopter	10	9	1	0.7%
Airport Parking	9	7	1	0.6%
Other	23	10	10	1.5%
Total	1,391	1,288	101	100%

3.8 Passengers vs. Cargo Employment

Based on survey responses, total direct YLW employment (1,400 surveyed plus inferred jobs) can be related to air cargo services. The allocation of passenger and cargo jobs and person years at YLW and other airport-related employment is presented in **Figure 3-7**. The share of direct employment for passenger operations makes up approximately 60% of all employment, with cargo accounting for 30% of employment.

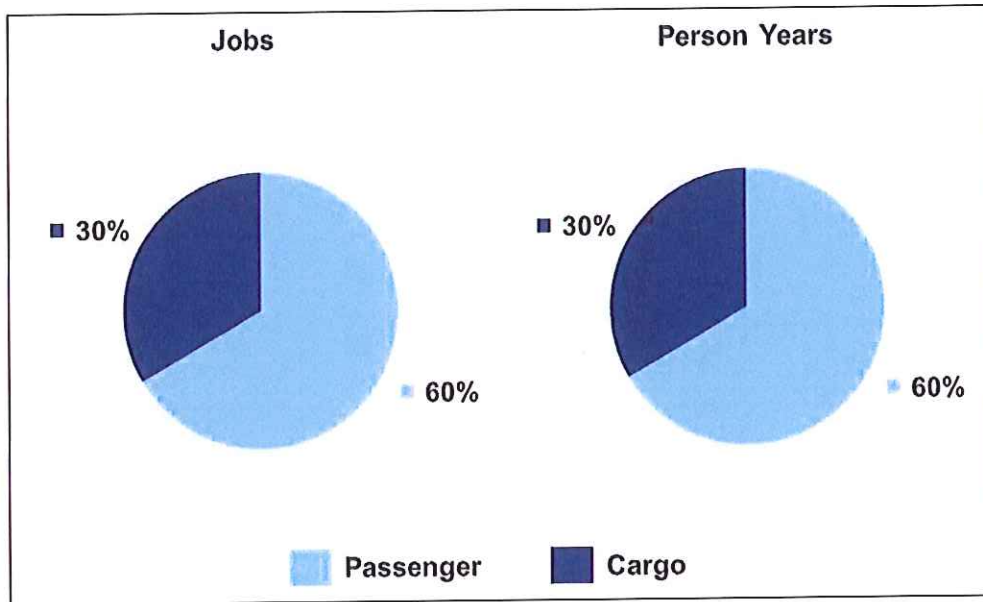
Passenger related employment is considered to include all employment in the passenger terminal and ground transportation and hotel employment off-site. As well, passenger related employment includes the majority of passenger air carriers' employment.¹¹ Cargo related employment comprises freight forwarders, customs brokers, and couriers/integrators.

There is direct employment at YLW which serves both passenger and cargo operations. This employment would include Kelowna International Airport Authority (the airport operator) and other services used by both passenger and cargo operations such as air traffic control, weather monitoring and other fixed base operators. Employment at these firms has been allocated between passenger and cargo categories depending on how their business activities were split between the two types of traffic.

Passenger operations make up 60% of direct employment, with cargo accounting for 30% of direct employment.

¹¹ Some passenger air carrier employment is allocated to cargo operations.

Figure 3-7: YLW Employment – Passenger and Cargo



4. Multiplier Economic Impacts

4.1 Introduction

The previous chapters discussed how direct employment related to on-going operations at YLW was measured and presented the results in some detail. However, the employment impact of the airport does not end there; other sectors of the economy are dependent on these employers' businesses. *Indirect* employment is generated at suppliers to the airport. Additionally, there may be a general stimulus to the overall provincial economy when direct (and indirect) employees spend their wages. These employment effects are referred to as *induced* employment. Total employment effects are the sum of direct, indirect, and induced effects.

Total employment effects are the sum of direct, indirect, and induced effects.

4.2 Methodology: economic multipliers

Measurement of indirect and induced economic activity is difficult. While it might be possible to conduct a survey of such employers, the survey would need to cover thousands of firms for indirect employment. For induced employment, the entire provincial economy would need to be scrutinised. In addition to the time and financial resources needed to conduct such surveys, the quality of responses would be suspect.

As an alternative to costly and inaccurate surveys, indirect and induced effects are typically measured by the use of *economic multipliers*. Multipliers are derived from economic/statistical/accounting models of the general economy. They come in a variety of forms and differ greatly in definition and application. Thus, great care must be exercised in choosing the appropriate set of multipliers to use. Multiplier impacts must be interpreted with caution since they may be illusory when the economy experiences high employment and output near industry capacity.

In general, the use and reporting of multiplier impacts is discouraged. When they are reported, it is recommended that the reader be reminded of the limitations on the use of multipliers. Mindful of these limitations, this study has undertaken multiplier analysis to estimate indirect and induced employment.

4.3 Indirect employment

Indirect employment is employment in non-airport industries that supply or provide services to this industry. Using British Columbia employment impact multipliers, 590 person years were estimated for total indirect person years related to YLW. The source of the multipliers was Statistics Canada's 2006 Interprovincial Input-Output Model.¹² This total suggests that 590 person years of employment are indirectly generated in British Columbia industries that supply the businesses of the airports of YLW. Labour income associated with the total indirect employment is estimated at over \$30 million per annum.

YLW indirect employment:

- 590 person years
- \$30 million in wages

4.4 Induced employment

Induced employment is somewhat more complicated than indirect employment. It is employment created because of expenditures by individuals employed both directly and indirectly by the airport's businesses. It is the demand for goods and services generated by wage earnings from economic activity at the airport. Induced employment attributable to YLW is estimated at 640 person years.¹³ Induced employment is associated with a wage bill of nearly \$40 million per annum.

YLW induced employment:

- 640 person years
- \$40 million in wages

4.5 Total employment

Table 4-1 summarises the direct, indirect, and induced and total employment attributable to on-going operations within YLW and the British Columbia economy.

¹² The multipliers used for the analysis are based on Statistics Canada economic multipliers for British Columbia from the 2006 Interprovincial Input-Output model, the most recent available. These multipliers were updated with Consumer Price Indices to account for inflation.

¹³ Statistics Canada has recommended some ratios of induced to direct plus indirect impacts which are used here.

Table 4-1: Direct and Total Employment in British Columbia: YLW

	Jobs	Person Years	Wages (\$ million)
Direct	1,400	1,290	70
Indirect	640	590	30
Induced	690	640	40
<i>Total</i>	2,730	2,520	140

5. Other Economic Impacts

5.1 Introduction: What are economic output and GDP?

Previous chapters of the report focused on the employment impacts of operations at YLW. This chapter turns to the broader economic impacts of YLW that are measured in dollar terms.

The two most common measures of economic contribution (in addition to employment) are *economic output* and *gross domestic product (GDP)*. Economic output roughly corresponds to the *gross* revenues of goods or services produced by an economic sector, while GDP measures only *value-added* revenues. As such, GDP removes the revenues to suppliers of *intermediate* goods and services and only includes the revenues from value-added production. Alternatively, economic output adds all revenues at each stage of

production together as a measure of total production in the economy. Economic output will always be greater than GDP (also termed value-added).

To estimate economic output for a sector, one might add up the gross revenues of the various firms in that sector. However, to find GDP for a sector, care must be taken to avoid double-counting. The revenues of one firm providing service to another are not incremental GDP. For example, in the automobile sector, one cannot add the value (gross revenue) of a finished auto to the value of the tires. The tires are already included in the value of the automobile.

One approach to measuring economic output and value-added is to ask firms in a survey to provide information on their gross revenues, payments to suppliers, etc. However, there are several problems with the approach. First, it is much too expensive. Second, the double counting problem makes this approach impractical.

An alternative is to infer economic output and GDP for an economic sector from employment data using economic multipliers. Statistics Canada produces economic multipliers both for Canada and all of the provinces and territories, and these are both more cost effective and more accurate than obtaining the data from surveys. This method, using Statistics Canada economic multipliers for British Columbia, is the approach adopted here.

Economic output:
total revenues from industrial output including materials and supplies.

GDP: *value-added in industrial output, net of intermediate revenues.*

5.2 Other economic impacts

Table 5-1 provides economic output and GDP impacts related to ongoing operations at YLW employment for the Province of British Columbia.

Table 5-1: Direct and Total GDP and Economic Output: YLW

Impact Type	GDP (\$ million)	Economic Output (\$ million)
Direct	120	300
Indirect	60	160
Induced	70	150
<i>Total</i>	250	610

The direct employment in YLW described in Chapter 3 generates approximately \$120 million in direct gross domestic product and nearly \$300 million in direct economic output in the provincial economy. Including multiplier effects, operations at YLW may be supporting up to \$250 million in total (direct, indirect and induced) GDP and \$610 million in economic output, economy-wide in British Columbia.

6. Tax Impacts

6.1 Introduction

This part of the report documents the current contribution to government revenues resulting from current operations at YLW and associated economic activity. This includes revenues received by federal, provincial and local governments.

Revenue contributions are divided into three groups, based on who is making the payment:

- **Taxes paid by employers and employees.** These are taxes paid by the airport employers and employees. They include income and payroll taxes, social insurance contributions (such as the employment insurance premiums) and the federal and provincial fuel taxes.
- **Taxes paid by passengers.** Visitors pay various taxes and fees.¹⁴ For example, these include taxes on personal expenditures at YLW such as taxes on food and beverages, taxes on airline tickets and taxes on single night hotel stays by connecting passengers and overnight flight crews, as well as the passenger facility charge.
- **Taxes paid by the airport authority.** YLW does not pay property taxes as it is owned and operated by the City of Kelowna. YLW does not currently make a federal lease payment.

For each category, taxes paid to the federal, provincial and local levels of government are separately identified.¹⁵

The purpose of this section is to present the tax revenue contributions resulting from the activity attributable to YLW. As with all such studies, a conceptual decision has to be made as to how broad a definition of *economic activity* should be used in measuring the impacts. For this study a relatively narrow definition has been taken, for example, the following have **not** been included:

- Taxes associated with indirect or induced employment (i.e. multiplier effects);
- Consumption taxes (e.g., GST) paid by airport employees when they spend their income in the broader economy.

¹⁴ For this study, only the Government Services Tax (GST) is calculated as the tax study analysis is for 2009. Thus, although the Harmonized Sales Tax (HST) was implemented beginning July 1, 2010 in British Columbia, this does not apply to the analysis presented in this report.

¹⁵ For the most part, this study **estimates** (some tax envelopes were measured directly, e.g., tenant property taxes) taxes paid from information on the passengers, employers and employees at the airports. In a few situations, such as the corporate income tax paid by employers, an approximate method was used to estimate taxes paid. In every case conservative methods were used. No major tax has been excluded.

- Excise or import taxes on cargo.
- Taxes paid by airport users outside of the airport.

It would be exceedingly complex to broaden the scope of the tax base in this analysis to include taxes generated by indirect and induced employment. The level of detail collected on direct employment by the survey is critical to the analysis while such information is not available for the indirect and induced employment. This being the case, impacts and speculation about the general economy would be complex and averages would not necessarily be precise or accurate. Therefore, the tax analysis in this report is limited to revenues attributable to direct employment only.

6.2 Taxes by Governmental Level

On-going economic activity at YLW generated tax revenue contributions to all levels of government, estimated to be in the order of \$30 million.¹⁶

- Approximately 23% of taxes were paid by air travellers, and the remaining 77% of taxes were paid by employers and their employees.
- Kelowna International Airport does not pay any property taxes to the City of Kelowna as it is owned and operated by the City. Instead, YLW pays the city a Municipal Services Fee of \$266,000 for services such as police, fire, and planning and development services. In addition, the airport is not required to make any federal lease payments to the Federal Government at the current time.

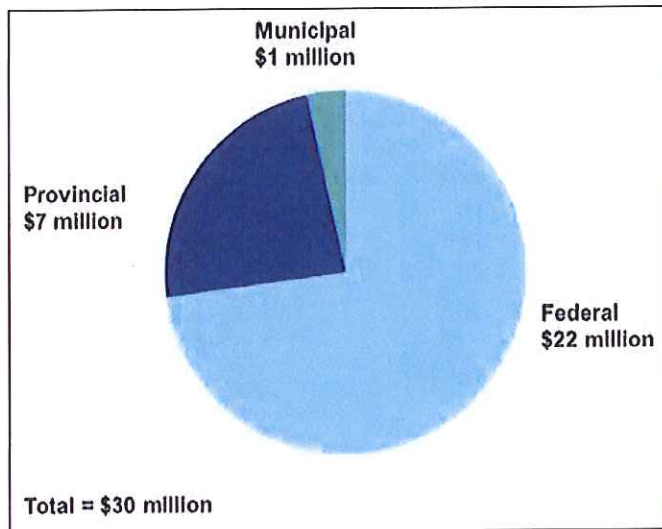
Tax revenues generated by YLW amount to \$30 million per year.

6.3 Summary of Tax Contributions

The federal government is the largest recipient of tax revenue, receiving nearly \$22 million (73% of the total), as seen in **Figure 6-1**.

¹⁶ See **Appendix G** for detailed calculations of taxes paid by employers and employees and **Appendix H** for taxes paid by passengers.

Figure 6-1: Breakdown of Tax Revenues by Government



A complete summary of tax contributions by YLW passengers and businesses is provided in Figure 6-2.

Figure 6-2: Current Tax Contributions of YLW Airport Passengers and Businesses - 2009

SUMMARY OF TAX CONTRIBUTIONS BY KELOWNA INTERNATIONAL AIRPORT - 2009

	Federal		Provincial		Municipal		All Gov'ts
	Tax	Amount (\$'000s)	Tax	Amount (\$'000s)	Tax	Amount (\$'000s)	Amount (\$'000s)
Paid by Passengers	GST on Accommodation	121	Hotel Tax	193			
	GST on Airport Concession	148	PST on Airport Concession	78			
	GST on Ground Transportation	776	PST on Ground Transportation	1,086			
	GST on AIF	429	PST on Accommodation	169			
	GST on ATSC	351					
	GST on Airfares	3,528					
	Total	6,353	Total	1,527	Total	0	6,880
Paid by Employers or Employees	Personal Income Tax	8,887	Personal Income Tax	3,228	Property Taxes	1,059	
	Corporate Income Tax	2,013	Corporate Income Tax	1,046			
	EI - Employer	973	Fuel Tax	6			
	EI - Employee	695	WCB	504			
	CPP - Employer	2,133	Health Insurance Plan	835			
	CPP - Employee	2,133	Hotel Tax	22			
	Fuel Tax	6	PST on Accommodation	19			
	GST on Accommodation	14					
	Total	16,854	Total	5,661	Total	1,059	23,574
Paid by Kelowna International Airport	Federal lease payment	0			Municipal Services Fee	266	
	Total	0			Total	266	266
Grand Total	22,208	Grand Total	7,187	Grand Total	1,325	30,720	

7. Microeconomic Impact of Passenger Services at Kelowna International Airport

Each departure of a passenger flight from Kelowna Airport (YLW) generates employment and labour hours for individuals with jobs involved in handling passengers, baggage, cargo, and the aircraft. In-terminal at the airport includes the preparation, processes and steps involved in processing passengers at the airport, and unloading and reloading aircraft with passengers, baggage and cargo. There are also direct labour hours associated with auxiliary services offered at the airport, including food and retail concessions and car rental services. During the flight, there is direct employment associated with aircraft personnel such as pilots and flight attendants. Off-site, there is also ground transportation (e.g., taxis, shuttle bus services) and hotel (e.g., overnight connecting traffic) associated with passenger air services. In this chapter, two microeconomic impact studies are used to describe and document the direct local labour hours generated in servicing the departure of each passenger flight at YLW. In particular, the following services from YLW are examined:

- A short-haul domestic jet service to Calgary (YYC) operated by WestJet with a B737-700
- A long-haul domestic jet service to Toronto (YYZ) operated by WestJet with a B737-700

Information for each micro study was gathered through interviews with WestJet's Station Manager at YLW and from observation of flight operations at the airport. In addition to the direct labour employment associated with each flight, the strategic importance of each service to the air service network at Kelowna Airport and to Kelowna as a leisure and business meeting destination is also discussed.

7.1 Overview of Labour Required in Handling Air Services

Each day, there are over 35 scheduled aircraft departures from Kelowna.¹⁷ Although WestJet serves several destinations from the airport, the procedures for handling the arrival and departure of a typical passenger flight have some common features, as described broadly overleaf.

Preparation for the incoming flight to Kelowna usually begins 24-48 hours prior to its arrival. This is when specific flight data regarding passenger loads and special instructions are transmitted to the airport.

Upon arrival of the flight, the aircraft is met by staff at the gate and on the ramp. Ground handling services typically involve 4-5 people working under the wing, with

¹⁷ Source: Official Airline Guide (OAG). Based on services for week of 12 July 2010.

additional staff in the baggage room handling the passenger luggage. Neither of these two flights have a significant amount of belly hold cargo so the unloading/loading of cargo is handled by ground handling staff at the ramp. For the flight from Calgary, three grooming staff are involved in cleaning the aircraft cabin, while the flight crew and an arriving agent help with grooming the flight from Toronto. WestJet has a maintenance base of four staff at Kelowna Airport, who service aircraft and conduct routine maintenance and inspection of aircraft upon arrival.

In the airport terminal, WestJet has staff working at the check-in and ticket counters, and in the back office supporting each flight. For some flights (such as the Toronto service), there is also a Guest Services Ambassador during peak hours to provide general assistance to passengers as needed.

WestJet operates a B737-700 on both the Calgary and Toronto service, and the cabin crew is the same on each flight (two pilots, four flight attendants).

The specific microeconomic impact of the Calgary and Toronto air services from Kelowna are outlined in the following sections.

7.2 Microeconomic Impact of Air Services to Calgary

Economic Impact

A summary of the economic impact of the Calgary passenger air service at Kelowna Airport is provided in **Table 7-1**. Each departing flight generates 0.04 person years of employment for a total of 16 person years of employment for the daily flight over the course of the year. This implies that each flight supports the equivalent of 16 full-time jobs in Kelowna on an annual basis.

A summary of the annual economic impact of the air passenger services, including wages, GDP and economic output, is provided in **Table 7-2**. The daily Calgary services from Kelowna generates 16 person years of employment and approximately \$950,000 in wages, along with \$1.7 million in value-added GDP and \$4.3 million in economic output.

Table 7-1: Direct Employment Impact of Air Passengers Services at Kelowna Airport (YLW) Per Flight

Service	Per Flight (Person Years) ¹⁸	Annual Employment (Person Years)
Short-haul domestic service to Calgary (YYC) (daily flights)	0.04	16

Table 7-2: Annual Direct Economic Impact of Air Passenger Services at Kelowna Airport (YLW)

Service	Direct Employment (Person Years)	Direct Wages (\$ million)	Direct GDP (\$ million)	Direct Economic Output (\$ million)
Short-haul domestic service to Calgary (YYC) (daily flights)	16	0.95	1.7	4.3

In addition to generating and supporting significant levels of employment, Kelowna Airport's services to Calgary also have strategic importance both to the airport's role as a regional hub and to Kelowna as a destination. A discussion of the strategic significance of this air service is provided below.

¹⁸ One person year or full time equivalent (FTE) of employment is equivalent to the number of hours that an individual would work on a full time basis for one year. In this study we have calculated one full time equivalent year to be equivalent to 1,832 hours. Full time equivalent years are useful because part time and seasonal workers do not account for one full time job.

An Aviation Link to Europe

WestJet offers daily, year-round direct services to Calgary (YYC) via B737-700 aircraft. This service links Kelowna to Calgary which provides passengers originating from Kelowna with a full array of domestic and international air services. This service also connects Kelowna as a destination to international markets world-wide via Calgary. A summary of the direct international air services from Calgary is provided in Table 7-3.

From Calgary, Kelowna is connected to major international source business and tourism markets, including U.K., Germany, France and Japan among others. Our analysis indicates that there has been a shift in the connecting hub that passengers use for international flights. Specially, it is estimated that the proportion of passengers travelling between Kelowna and Europe that used Calgary (YYC) as a connecting hub has increased from 37% in 2007 to approximately 49% in 2009.¹⁹ Comparatively, the proportion of passengers travelling between Kelowna and Europe that use Vancouver (YVR) as a connecting hub has decreased from 51% to 35%.²⁰ This is due to the improvement of air services to Europe from Calgary, including additional services from Air Canada and Lufthansa. With the announcement of WestJet's interline agreement with Air France and KLM, this trend is expected to continue.

Table 7-3: Direct Non-Stop Air Services from Calgary International Airport (YYC) – July 2010

Region	City	Weekly Frequency	Weekly Seat Capacity
Asia	Tokyo	3	633
Asia Total		3	633
Europe	Amsterdam	6	1,590
	Frankfurt	15	4,010
	Glasgow (UK)	1	185
	London (UK)	21	5,344
	Manchester	2	670
	Munich	1	335
	Paris	1	335
	Zurich	1	307
Europe Total		48	12,776
Latin America/Caribbean	Cancun	3	392

¹⁹ Information representative of global distribution system booking data.

²⁰ Information representative of global distribution system booking data.

Region	City	Weekly Frequency	Weekly Seat Capacity
	Mazatlan	1	136
	Mexico City	5	600
	Puerto Vallarta	3	392
	San Jose Cabo	2	272
	Santa Clara	1	120
	Varadero	1	120
<i>Latin America/Caribbean Total</i>		<i>16</i>	<i>2,032</i>
Grand Total		67	15,441

Source: Official Airline Guide (OAG). Based on summer services for week of 12 July 2010.

7.3 Micro-economic Impact of Air Service to Toronto

A summary of the economic impact of the Toronto passenger air services at Kelowna Airport are provided in the following tables. **Table 7-4** illustrates the direct employment impact of air passenger services on a per flight basis, and also indicates the annual impact based on the number of flights operated each year. The table shows that the long-haul Toronto service has a higher employment impact than the air services to Calgary - this is mainly due the longer flight time and associated labour hours from aircraft crew. Each flight to Toronto generates 0.06 person years of employment and supports 21 person years of employment on an annual basis.

Table 7-4: Direct Employment Impact of Air Passengers Services at Kelowna Airport (YLW) Per Flight

Service	Per Flight (Person Years) ²¹	Annual Employment (Person Years)
Long-haul domestic service to Toronto (YYZ) (daily flights)	0.06	21

The total annual economic impact of the Toronto air services is provided in **Table 7-5**. The daily flights generate 21 person years of employment annually, \$1.2 million in wages, and about \$2.2 million in value-added GDP and \$5.6 million in economic output.

²¹ One person year or full time equivalent (FTE) of employment is equivalent to the number of hours that an individual would work on a full time basis for one year. In this study we have calculated one full time equivalent year to be equivalent to 1,832 hours. Full time equivalent years are useful because part time and seasonal workers do not account for one full time job.

Table 7-5: Annual Direct Economic Impact of Air Passenger Services at Kelowna Airport (YLW)

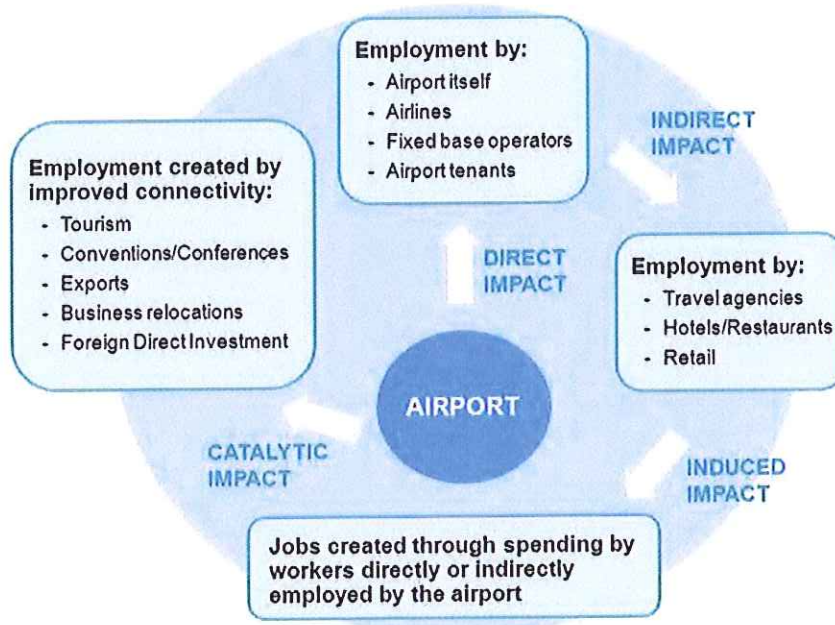
Service	Direct Employment (Person Years)	Direct Wages (\$ million)	Direct GDP (\$ million)	Direct Economic Output (\$ million)
Long-haul domestic service to Toronto (YYZ) (daily flights)	21	1.2	2.2	5.6

In addition to generating and supporting significant levels of employment, Kelowna Airport's services to Toronto also have strategic importance both to the airport's role as a regional hub and to Kelowna as a destination. A discussion of the strategic significance of this air service is provided below.

7.3.1 Catalytic Impacts

Beyond the direct, indirect, and induced economic impacts noted earlier, air service also contributes other positive effects on a region that can be more difficult to assess. These "catalytic effects" of air transport contribute in other ways to a local or regional economy. They are important beneficial economic events or activities that occur in an area that are attributable to the presence of the airport or of a particular type of air service. **Figure 7-1** illustrates the potential catalytic impacts of an airport, together with the direct, indirect and induced economic impacts. This section provides a discussion of these catalytic impacts.

Figure 7-1: Potential Direct, Indirect, Induced and Catalytic Impacts of an Airport



Air transportation facilitates employment and economic development in the national and regional economy through increased trade, attracting new businesses to the region and encouraging investment. Industries and activities that would otherwise not exist in a region can be attracted by improved air transport connectivity. In particular, catalytic effects can include some or all of the following:

- **Employment effects** - the attractiveness of an area for the creation of new or retention of existing job opportunities. For example, companies may choose to locate in a region because of the presence of the airport, particularly if the airport enjoys service to a certain destination.
- **Trade effects** – additional air services opens new export markets to many businesses as a result of new destinations, better flight connections and higher frequencies offered. For example, the airport's presence can contribute to the export success of companies located in the area by the provision of freight links to key markets or by its ability to provide fast and efficient freight service. This leads to a broader demand for existing products.
- **Investment effects** – a key factor many companies take into account when taking decisions about location of office, manufacturing or warehouses is proximity of an international airport.

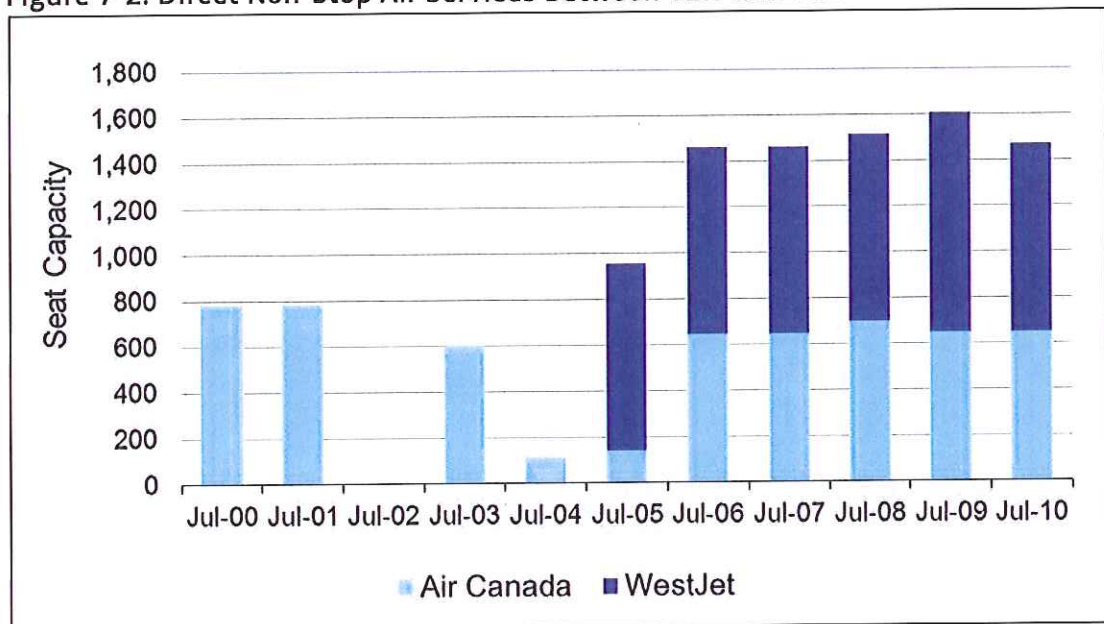
- **Productivity effects** – air transportation offers access to new markets which in term enables businesses to achieve greater economies of scale. Air access also enables companies to attract and retain high quality employees.

Taken together, these issues contribute to an overall sense of a region’s attractiveness and competitiveness.

The Importance of the Toronto Market

WestJet offers daily, year-round direct services to Toronto (YYZ) via B737-700 aircraft (there are six flights per week in the summer and seven flights per week in the winter to accommodate the ski season demand). As shown in **Figure 7-2**, air capacity between Toronto and Kelowna has doubled between July 2000 and July 2010 – from weekly flights by Air Canada to weekly flights from both Air Canada and WestJet for double daily flights. This link provides significant benefits to Kelowna both as a leisure and business meetings destination.

Figure 7-2: Direct Non-Stop Air Services Between YLW and YYZ



Source: Official Airline Guide (OAG). Based on summer services for week of mid-July in each year.

On the leisure side, the Toronto service enables Kelowna and its ski resorts, such as Big White and Silver Star, to tap into the outbound travel market from Toronto – the single largest tourism source market in Canada. Tourism packaging from Toronto to Kelowna have allowed the sale of packaged vacations to Kelowna in the Toronto region. Destination ski resort opportunities have been advanced by these packages, and these packages also support summer travel such as wine and golf tours. According to Statistics Canada, domestic travel from Toronto to other Canadian

destinations accounts for over 14 million person trips annually, with expenditures of over \$3 billion.²²

The Toronto market is also significant from a business market perspective. The non-stop service also supports the development of new meeting and convention opportunities because it the air service has made Kelowna much easier to get to from Canada's foremost corporate municipality. Toronto has the greatest number of head offices in Canada - more than Calgary and Montreal combined. Kelowna's air services to Toronto provides the region with an air link to these corporate headquarters which enable local and regional organizations in Kelowna to conduct business with these firms. The link also provides an opportunity for the development of MICE (Meetings, Incentives, Conventions & Exhibitions) travel from the Toronto market to Kelowna which furthers tourism development in the region.

According to Inter *VISTAS*' market size study, there are nearly 57,000 person-trips of Kelowna area residents travelling to Toronto each year, and over 75,000 visitors from Toronto that visit Kelowna for leisure or business for a total of 132,000 origin-destination air passengers between Kelowna and Toronto (one-way). Based on the average spending rates of domestic travellers from Toronto, these 75,000 visitors are estimated to spend upwards of \$16 million in Kelowna each year.

Tourism Kelowna, whose mandate is to drive travel to Kelowna, has identified Toronto as a priority target market in its most recent business plan. In its opportunity analysis, the destination marketing organization has identified that the daily non-stop air service to/from Toronto has resulted in an increased opportunity to attract small to mid-size meetings, conventions and incentive travel to Kelowna in the October through May period. Some hotels have already increased their capacity to host meetings, and many tour operators, restaurants, and attractions are already welcoming these groups from Toronto.²³

Most recently Tourism Kelowna has hired an in-market sales representative in the Toronto market to help with continuing to develop meetings, incentives and conference business for Kelowna from Toronto. This is supported by media and other marketing programs in the region. According to Tourism Kelowna, awareness of Kelowna as a leisure and business destination in the Toronto market continues to grow, and Toronto will continue to be a primary target market for Kelowna that is expected to grow in significance over the next several years.²⁴

²² Source: Statistics Canada Domestic Travel Survey.

²³ Source: Tourism Kelowna 2008-2013 Business Plan and Inter *VISTAS*' discussions with Tourism Kelowna.

²⁴ Source: Tourism Kelowna 2008-2013 Business Plan and Inter *VISTAS*' discussions with Tourism Kelowna.

8. Summary of Economic Impact Results

Ongoing operations at YLW generates 1,290 direct person years of employment and nearly \$70 million in direct wages

On-going operations at YLW may support up to a total of 2,730 jobs equivalent to 2,520 person years of employment province-wide, when multiplier impacts are present. Of this employment, 1,400 jobs (equal to 1,290 person years) are directly related to the airport. Because jobs related to the airport extend far beyond the Kelowna region, the total also includes both indirect (approximately 590 person years) and induced employment (640 person years).

YLW generates direct employment in the Kelowna region and contributes significantly to the British Columbia economy. The significance of the airport in terms of the provincial economy is demonstrated by the *direct* economic impact of the airports' employment on GDP and output, measured at \$120 million and \$300 million respectively. Including indirect and induced impacts, the *total* impacts are approximately \$250 million and \$610 million respectively. **Table 8-1** summarises the economic impacts of on-going operations at YLW.

Table 8-1: On-Going Total Economic Impacts of YLW In British Columbia

Type of Impact	Jobs	Person Years	Wages (\$ million)	GDP (\$ million)	Economic Output (\$ million)
Direct	1,400	1,290	70	120	300
Indirect	640	590	30	60	160
Induced	690	640	40	70	150
Total	2,730	2,520	140	250	610

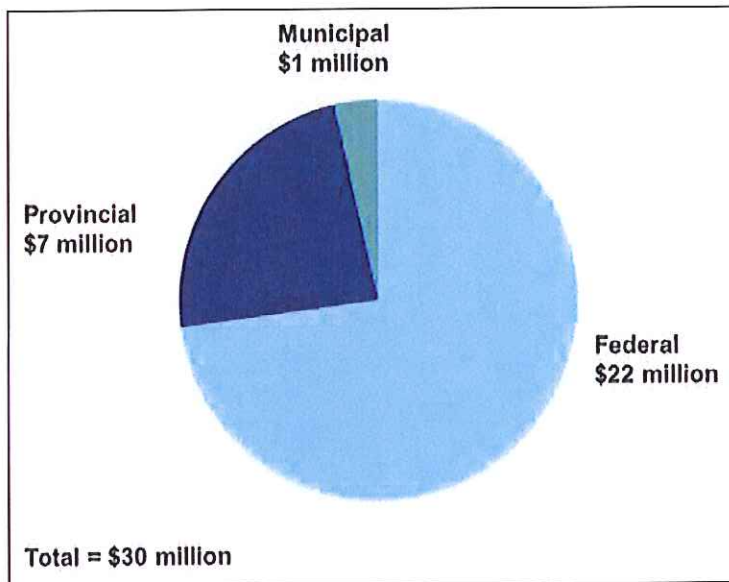
Ongoing operations at YLW contribute to employment in the transportation industry in the Thompson-Okanagan region. Direct and total jobs attributed to operations at YLW make up 14% and 26%, respectively, of employment in the transportation and warehousing industry of the Thompson-Okanagan region.²⁵

²⁵ This is based on the 2009 employment by industry figures for Thompson Okanagan in the *2010 Economic Profile Regional District of the Central Okanagan* by the Central Okanagan Economic Development Commission, 2010.

Ongoing operations at YLW generate \$30 million per annum in government tax revenues

- YLW is also an important generator of taxation revenues to all levels of government. Total taxes paid on an annual basis, by employers, employees and airport users, are estimated at \$30 million per year. The majority of taxes collected accrue to the federal and provincial governments, at 73% and 24% respectively. Local governments also benefit from YLW, such as through the collection of property taxes amounting to approximately \$1 million paid by the airport’s tenants. In addition, YLW pays the City of Kelowna a Municipal Services Fee of \$266,000 for services such as police, fire, and planning and development services.

Figure 10-2: Estimated Annual Tax Revenues to Government



Employment is created each time an aircraft lands at YLW.

- WestJet’s daily short-haul service to Calgary generates 16 person years of employment and \$950,000 in wages annually at YLW.
- The proportion of passengers travelling between Kelowna and Europe that used Calgary (YYC) as a connecting hub increased from 37% in 2007 to about 49% in 2009.
- WestJet’s daily long-haul service to Toronto generates 21 person years of employment and \$1.2 million in wages annually at YLW.
- There are nearly 57,000 person-trips of Kelowna area residents travelling to Toronto each year, and over 75,000 visitors from Toronto that visit Kelowna for

leisure or business for a total of 132,000 origin-destination air passengers between Kelowna and Toronto (one-way).

Appendix A: Employment Survey

Identification of the survey population

A total of 118 firms received employment surveys for the YLW economic impact study included airport tenants, off-site firms, hotels and ground transportation firms directly related or dependent upon the airport. Kelowna International Airport provided a list of airport tenants. Inter *VISTAS* identified the off-site employers, hotels and ground transportation firms closely tied to airport operations using several phone directories.

Table A-1: Total Number of Firms Surveyed

Type of Business	Number of Firms Surveyed	Number of Firms' Responses	Response Rate
Kelowna International Airport Employers (YLW)	34	33	97%
Off-site Employers	24	23	96%
Ground Transport Firms	16	15	94%
Hotels	44	39	89%
<i>Total</i>	<i>118</i>	<i>110</i>	<i>93%</i>

Questionnaire design

The basic questionnaire was designed to be effective in obtaining information and, equally importantly, to be as clear and easy to understand as possible for respondent firms. The basic survey was provided to employers at each airport. Three other surveys were developed for off-site employers, hotel employment and ground transportation employment. The basic questionnaire provided to airport tenants contained questions in the following areas:

General Company Information

- Name of firm, address
- Contact person's name and title
- Phone and fax numbers
- Email and website address
- Type of business

Total Employment Numbers

- Total employees (*as of June 2010*)
- Total payroll excluding benefits
- Number of on-site employees
- Number of off-site employees

Part-time and Full-time Employment

- Full-time permanent employees
- Part-time permanent employees
- Full-time seasonal employees
- Part-time seasonal employees
- Average hours and weeks for part-time and seasonal employees

Employment by Trade

- A selection of job trades was provided to categorise employment

Outsourcing and Contracting Out

- Number of individuals on contract
- Number and names of firms on contract

A copy of the on-site employment survey is provided in **Appendix B**.

Conducting the survey

The survey was mailed out electronically by Inter *VISTAS* Consulting with a cover letter signed by Kelowna International Airport, Airport Director, Sam Samaddar. The letter explained the purpose of the study, the confidentiality of responses and encouraged members of the airport business community to participate.

Following the initial electronic mail-out of the surveys and throughout the following weeks, non-responding firms were contacted by telephone to follow up. Firms were encouraged to return the survey and new copies were offered if the originals were lost. The replacement surveys were emailed once again, or sent via regular mail with postage-paid envelopes. Some survey responses were collected via a telephone interview with firms.

Analysis of the results

The survey results were compiled into an MS Excel spreadsheet.

Appendix B: Sample Survey



June 2010

To All Members of the Kelowna International Airport Business Community

Re: Kelowna International Airport Economic Impact Study

A critical factor in winning community and government support for future initiatives that benefit all airport-related businesses is our ability to demonstrate the significant economic impact of Kelowna International Airport (YLW) upon our community and province.

Kelowna International Airport has therefore commissioned an economic impact study. The results of the study will be used to raise public awareness of the airport, the airlines and other related businesses' contribution to local employment and economic activity. We receive many requests for economic impact information and it is important that the public continues to appreciate the benefits of the Kelowna International Airport to the economy of British Columbia.

Kelowna International Airport has commissioned InterVISTAS Consulting to conduct the economic impact study on our behalf. InterVISTAS Consulting has completed similar economic impact studies for airports across Canada. In order to undertake this study, we are seeking your co-operation through participation in the attached employment survey. In order to keep this initiative on time and on budget, we request that you complete this survey as soon as possible, so that InterVISTAS Consulting can compile the results without delay or additional cost.

We appreciate that some of the information requested in the survey may be of a sensitive nature to your firm. You may be assured that Kelowna International Airport will not view your completed survey. Please send your survey results directly to InterVISTAS via one of the following methods:

- Fax to 604-717-1818 to the attention of Doris Mak; or
- Email your response back to InterVISTAS Consulting at doris.mak@intervistas.com

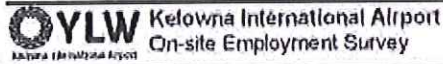
InterVISTAS Consulting will maintain the confidentiality of your survey response and will not provide individual firm results to Kelowna International Airport. Only the aggregate survey totals will be provided to Kelowna International Airport for the purposes of the economic impact study. The published document will not reveal employment figures for any individual firms.

The economic impact study is conducted under the supervision of Doris Mak at InterVISTAS Consulting. Should you have any questions regarding the study or the survey, please contact her at 1-877-717-6246 (ext. 1038).

Thank you for your co-operation in this important study. We all look forward to the results as they will benefit all members of the Kelowna International Airport business community.

Sincerely,

Sam Samadder
Airport Director



June 2010

The figures you provide in the following sections are strictly confidential and will be viewed only by InterVISTAS Consulting and reported only in an aggregate form. For the purposes of this study, it is important that the figures you provide are as accurate and current as possible. When answering the questions below regarding your business, please include all related subsidiary businesses.

Name of Firm _____

Address of Firm: _____

City, Province: _____ Postal Code: _____

Contact Person: _____ Phone number: _____

Email: _____

Q1. Location of Firm

Please indicate the general location of your firm:

- Kelowna International Airport (YLW)
- Other, please specify: _____

Q2a. Business Related to Kelowna International Airport

Please estimate the amount of your business that is related to Kelowna International Airport.

YLW Related Business: (as of June 2010)	%
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Q2b. Cargo Related Business

We would like to be able to document the impact of the airport's air cargo services. Please help us by indicating the portion of your business that is involved in servicing air cargo.

Please estimate the proportion of your business (revenue) that can be attributed to air cargo related activities?

Air Cargo Related Business: (as of June 2010)	%
--	---

Q3. Type of Business (check one)

If you are involved in more than one of the businesses below, please choose the one that best describes your business.

Air Carriers

- 1. Scheduled Canadian Carrier
- 2. Scheduled Non-Canadian Carrier
- 3. Charter Carrier
- 4. Helicopter
- 5. Air Taxi
- 6. Cargo Carrier
- 7. Courier
- 8. Other Type of Air Carrier:

Other Business Types

- 9. Facility Operator
- 10. Freight Forwarder, Cargo Agent, etc.
- 11. Warehousing
- 12. Customs Broker
- 13. Aircraft Maintenance
- 14. Aircraft Ground Handler
- 15. Fueling Company
- 16. Fixed Base Operator
- 17. Aircraft Parts Supplier
- 18. Aviation Related Manufacturing
- 19. Aviation Related Training
- 20. Caterer
- 21. Security Firm
- 22. Hotel
- 23. Taxi, Bus
- 24. Car Rental
- 25. Airport Retail Outlet, Restaurant, etc.
- 26. Government Agency/Department
- 27. Air Traffic Control
- 28. Other: _____

Q4. Total Employment

Please state the total number of employees that you have at present. This figure should include all full-time, part-time and seasonal work but should not include employment for work done on contract.

Total Number of Employees: (as of June 2010)	
Total Annual Payroll: (Excluding employee benefits, 2010 figures)	

- OR.** Provide an estimate of the average annual salary per employee \$ _____
- Less than \$20,000
 - Between \$20,000 and \$40,000
 - Between \$40,000 and \$60,000
 - Between \$60,000 and \$80,000
 - Between \$80,000 and \$100,000
 - More than \$100,000

Q5. On-site versus Off-site Employees

For the purpose of this study, on-site workers are employees who work on airport land. Off-site employees are those who do not work on airport land, but are primarily performing airport or aviation related duties (e.g., airline sales representatives at a downtown office). Of the total number of employees listed in Q4, how many work on-site and how many work off-site?

Number or % of Employees On-Site:	
Number or % of Employees Off-Site:	

Q6. Part-Time and Full-Time Employees

A. Permanent Employees: A permanent employee is one who works year round. In reference to the number of total employees in Q4, how many are permanent employees and how many are full-time and how many are part-time?

Number of Full-Time <u>Permanent</u> Employees:	
Number of Part-Time <u>Permanent</u> Employees:	
Total <u>Permanent</u> Employees:	

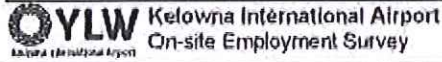
For part-time employees, on average, how many hours per week will they work this year?

# of Weekly Hours:	
--------------------	--

If it is difficult to obtain this information or if there is great variation, you may provide a range of weekly hours (i.e., less than 10 hours, 10-15 hours, etc).

B. Seasonal Employees: A seasonal employee is one who is hired for work during peak or specific time periods only. In reference to the number of total employees in Q4, please indicate how many are seasonal full-time and part-time employees (2010)?

Number of Full-Time <u>Seasonal</u> Employees:	
Number of Part-Time <u>Seasonal</u> Employees:	
Total <u>Seasonal</u> Employees:	



June 2010

For seasonal workers, on average, how many weeks will they work this year (2010)?

Number of Weeks Per Year:	
---------------------------	--

For part-time seasonal workers, on average, how many hours per week will they work this year (2010)?

Number of Weekly Hours:	
-------------------------	--

If it is difficult to obtain this information or if there is great variation, you may provide a range of weekly hours (i.e., less than 10 hours, 10-15 hours, etc).

THE SUM OF THE PERMANENT AND SEASONAL EMPLOYEES LISTED IN Q6A AND Q6B SHOULD EQUAL THE NUMBER OF TOTAL EMPLOYEES IN Q4.

Q7. Employment by Trade

In order to reflect the diversity of employment at the airport, please provide us with a breakdown of your total payroll employees, by position

Employment by Trade		Number or % of Employees
General	Managerial/Supervisory	
	Clerical	
	Craft Trades (Electricians, Steam Fitters, etc.)	
Airline & Airline Servicing Trades	Pilots	
	Flight Attendants	
	Aircraft & Vehicle Mechanics	
	Customer Service Agents	
Support Trades	Aircraft Servicing	
	Security Agents	
	Food Service Workers	
	Drivers / Delivery / Couriers	
	Dispatchers	
	Call Centre / Reservations	
Retail Trades	Air Traffic Control	
	Sales / Cashiers	
	Food & Beverage Staff	
Other (Please specify)		

Q8. Outsourcing and Contracting Out

Since we do not want to exclude any employment from the airport, we would like you to briefly comment on whether your firm contracts out any important services.

A. Individuals on Contract: If you pay some individuals through a contract, as opposed to through payroll, please indicate the number of such employees.

Number of <u>Contract</u> Employees:	
--------------------------------------	--



Kelowna International Airport
On-site Employment Survey

June 2010

Of these employees on contract, how many weeks, on average, will they work this year? And, on average, how many hours per week do they work?

Number of Weeks Per Year:	
Number of Weekly Hours:	

B. Firms on Contract: Do you contract any work out to other firms? For example, janitorial services, ground handling, etc.

- No. (continue to next question)
- Yes. If yes, please complete the following table indicating the functions you contract out to other firms and an estimate of the annual hours on contract. Also include the names of the firms you use so we can ensure that we do not double count any work performed by other firms that we are surveying as a part of this study.

Function	Name of Firm	Estimated Number of Hours to be Performed by Firm in 2010
<i>Example: Janitorial</i>	<i>Spic and Span Cleaners</i>	<i>100 a year (2 hours per week)</i>

Q9. Property Taxes Paid in 2009

Please indicate the amount of property taxes paid by your firm in 2009.

Total Property Taxes Paid (2009)	
-------------------------------------	--

**Thank you for your assistance in completing this survey.
Please return this survey using by fax to:**

Attention: Doris Mak, Fax: 604-717-1818

Or via e-mail to doris.mak@intervistas.com

If you have any questions, please call Doris at 1-877-717-6246 (ext. 1838)

Appendix C: Calculation of Person Hours per Year

The following are details of calculations for the average number of hours per person year (PY).

Table C-1: Person Hours per Year

Calculation of person hours per year:	
	365 days per year
Less:	(104) weekend days
	(11) legal holidays
	(15) average vacation days
	(6) sick leave
	229 days per person year
	* 8 hours per work day
	1,832 hours per person year

Workdays vary anywhere from 6.5 to 8 hours; however, in order to be conservative, an 8 hour workday was assumed.²⁶ Similarly, numbers of vacation and sick leave days may also vary.

²⁶ Essentially, we are using a measure of paid hours per year. Using a measure of productive hours per year with 6.5 hour workdays (8 hours less 1 hour for lunch less two 15 minute work breaks) would give 1,489 hours per person year. Using this lower figure would result in inferring a greater number of person years from seasonal and part-time jobs. Using the 1,832 figure, we infer a lower number of person years.

Appendix D: Summary of Total Jobs and Person Years

Table D-1: Total Jobs and Person Years

Total Jobs and Person Years		
	Jobs	Person Years
Surveyed employment ¹	1,320	1,237
Inferred employment for non-respondents ²	44	34
Contract employment ³	38	20
<i>Total</i>	<i>1,401</i>	<i>1,291</i>
¹ Appendix A ² Appendix E ³ Appendix F		

Appendix E: Inferred Employment

This appendix describes how employment was inferred for non-responding airport employers.

InterVISTAS' approach was to utilise information from responding firms for each type of business and use it, along with publicly available information on individual non-responding firms, to make inferences. This approach is generally deemed to be the best approach, and indeed is often used for developing the national income and products account (i.e. partial survey with inference for non-surveyed or non-responding firms based on responses of surveys received). The approach was conservative in that, unlike the national income and products account inference, we assumed that the non-responding firms were smaller than respondents.²⁷

The employment data in this report was constructed from a combination of two sources:

1. **Employment reported by employers on surveys.**
2. **Employment inferred for employers who did not provide a survey response.** Inferred employment was based on employment information from firms in each business type that did respond to the survey. The mean employment of respondents in each business type was calculated, excluding outliers, and then adjusted downwards based on standard deviation from the mean. For example, especially large firms were excluded from the "mean without outliers" to obtain conservative results. This "adjusted mean" employment for each business type was then applied to the non-respondent firms.

²⁷ As with the national income and products account approach, we recognise and discard outliers in the survey respondents when making inferences for non-respondents.

Appendix F: Contract Employment

Some firms contract out services which they do not have expertise in providing, or when there are cost advantages to doing so. For example, many airport firms contract out janitorial, elevator and maintenance services. The employment survey asked firms to identify whether they contracted out some of their work, and to estimate the number of annual hours involved.

Contract work was separated into two distinct categories in the employment survey: i) individual "employees" paid through a contract, rather than via payroll, and, ii) contracting out services to other firms.

The employment results for individuals on contract were derived by counting the number of individual positions for the number of *jobs* and dividing the total hours of employment by 1,832 to estimate person years. The employment results for firms on contract were derived by dividing the total hours of employment by 1,832 to estimate person years.

It is estimated that 38 jobs, equivalent to 20 person years of employment, are from contract firms and individuals operating at the airport. Employers indicated 27 contract individuals working firms at YLW, equivalent to 10 person years of employment.

Appendix G: Tax Revenues Attributable to Airport Employers

Introduction

This appendix describes the employment and other assumptions on which tax revenues calculations are based. As well, the approaches used to estimate employer and employee contributions to local, provincial and federal governments are presented. All estimates are for the 2009 calendar year unless otherwise stated.

Some of the taxes pose conceptual questions about how much, or if any, tax revenue from a particular source should be attributed to firms serving YLW. These questions are highlighted and simplifying assumptions are put forth.

Employment at YLW

The majority of tax calculations in this report depend on direct employment and total wages. The total direct employment, in person years, used for these calculations is 1,290 person years. The total payroll is estimated at nearly \$70 million.

Personal income tax (federal and provincial)

Tax base and rates. Under the *Income Tax Act* federal income tax is paid on taxable income at a rate that increases with taxable income.

Provincial income tax was formerly calculated as a percentage of federal tax, but most provincial governments have begun collecting taxes on a sliding scale.

Estimation Method and Results

Because the tax rate is progressive, the tax paid by a group of employees depends on the distribution of income among those employees. Unfortunately, the distribution of income is not known and average incomes must be used.

Each employee is assumed to pay tax as a single tax filer. Estimated income tax payable is \$9,000 in federal tax and \$3,000 in provincial tax.

Table G-1: Income Tax Revenues

	Person Years	Average Payroll	Payroll (\$k)	Average Income Tax Rates (%)		Estimated Income Tax (\$k)	
				Federal	Provincial	Federal (\$k)	Provincial (\$k)
Air Traffic Control	19	\$ 83,528.19	\$1,620.00	17.1%	6.6%	\$276.31	\$107.26
Aircraft Ground Handler	12	\$ 31,097.70	\$360.00	7.2%	2.7%	\$25.97	\$9.56
Aircraft Maintenance	620	\$ 61,085.71	\$37,885.24	14.8%	5.3%	\$5,604.50	\$2,006.69
Airport Administration	34	\$ 60,282.36	\$2,065.00	14.8%	5.3%	\$305.48	\$109.38
Airport Parking	7	\$ 37,135.14	\$270.00	7.2%	2.7%	\$19.48	\$7.17
Airport Retail Outlet, Restaurant, etc.	51	\$ 17,129.20	\$879.65	0.0%	0.0%	\$0.00	\$0.00
Aviation Related Training	4	\$ 59,338.48	\$239.88	11.7%	4.3%	\$28.00	\$10.21
Building Owners (Cargo 1 Bldg.)	1	\$ 29,183.76	\$29.18	7.2%	2.7%	\$2.11	\$0.78
Car Rental	47	\$ 27,132.98	\$1,264.05	7.2%	2.7%	\$91.20	\$33.58
Charter Carrier	124	\$ 42,051.88	\$5,223.97	11.7%	4.3%	\$609.75	\$222.37
Facility Operatr	18	\$ 54,314.43	\$997.50	11.7%	4.3%	\$116.43	\$42.46
Flying Club	-	\$ -	\$0.00	0.0%	0.0%	\$0.00	\$0.00
Freight Forwarder, Cargo Agent etc.	43	\$ 29,662.23	\$1,278.53	7.2%	2.7%	\$92.25	\$33.96
Government Agency/Department	24	\$ 84,572.86	\$2,071.20	17.1%	6.6%	\$353.27	\$137.13
Helicopter	9	\$ 111,348.83	\$1,000.00	18.6%	7.9%	\$186.49	\$78.91
Personal Aircraft Hangars	-	\$ -	\$0.00	0.0%	0.0%	\$0.00	\$0.00
Police Services	3	\$ 70,000.00	\$210.00	14.8%	5.3%	\$31.07	\$11.12
Scheduled Canadian Carrier	71	\$ 41,386.39	\$2,931.72	11.7%	4.3%	\$342.20	\$124.80
Scheduled Non-Canadian Carrier	13	\$ 55,116.16	\$720.00	11.7%	4.3%	\$84.04	\$30.65
Security Firm	113	\$ 44,774.76	\$5,057.89	11.7%	4.3%	\$590.37	\$215.30
Aircraft Avionics	1	\$ 52,138.72	\$60.41	11.7%	4.3%	\$7.05	\$2.57
Aircraft engine overhaul	1	\$ 59,315.45	\$35.00	11.7%	4.3%	\$4.09	\$1.49
Aircraft Parts Supplier	4	\$ 27,480.00	\$109.44	7.2%	2.7%	\$7.90	\$2.91
Courier	2	\$ 26,554.03	\$53.11	7.2%	2.7%	\$3.83	\$1.41
Customs Broker	0	\$ 24,182.40	\$1.45	7.2%	2.7%	\$0.10	\$0.04
Helicopter Component Repair and Overhaul	5	\$ 23,000.00	\$115.00	7.2%	2.7%	\$8.30	\$3.06
Wireless Communication	0	\$ 75,401.90	\$17.00	14.8%	5.3%	\$2.51	\$0.90
Taxi, Bus	38	\$ 20,811.52	\$782.21	7.2%	2.7%	\$56.44	\$20.78
Hotel	24	\$ 22,222.16	\$526.55	7.2%	2.7%	\$37.99	\$13.99
TOTAL	1,289		\$65,803.96			\$8,887.13	\$3,228.48

The average tax rates used are derived from the more detailed calculations of taxes payable shown in **Table G-2**. In those calculations, assumptions have been made about income from non-employment sources, tax deductions from income (e.g. RPP and RRSP contributions), and tax credits applied against tax otherwise payable (e.g. CPP, EI and charitable contributions). Average credits are calculated from Revenue Canada, *General Income Tax Forms, 2009*.

Table G-2: British Columbia Single Tax Filer Income Tax Calculation – 2009

Income						
Employment	20,000	40,000	60,000	80,000	100,000	
Other	2,000	4,000	6,000	8,000	10,000	
TOTAL	22,000	44,000	66,000	88,000	110,000	
Deductions						
RPP	70	587	2,130	2,477	2,243	
RRSP	237	864	1,719	4,277	7,029	
Carrying Charges	30	59	244	693	929	
Union	39	149	445	455	356	
TOTAL	376	1,659	4,538	7,902	10,557	
Taxable Income	21,624	42,341	61,462	80,098	99,443	
Credits						
Basic Federal	10,320	10,320	10,320	10,320	10,320	
Basic Provincial	8,605	8,605	8,605	8,605	8,605	
CPP	579	1,281	1,631	1,690	1,727	
EI	241	456	572	578	513	
Charity	164	364	548	792	1,520	
Federal TOTAL	11,304	12,421	13,071	13,380	14,080	
Provincial TOTAL	9,589	10,706	11,356	11,665	12,365	
Federal Credits	1,696	1,863	1,961	2,007	2,112	
Provincial Credits	925	1,033	1,096	1,126	1,193	
Tax Payable						
Federal - Bracket 1	3,244	6,109	6,109	6,109	6,109	
Federal - Bracket 2	0	355	4,562	8,662	8,960	
Federal - Bracket 3	0	0	0	0	4,678	
Federal Total	3,244	6,464	10,671	14,771	19,746	
Basic Federal	1,548	4,601	8,710	12,764	17,634	
Provincial - Bracket 1	2,087	3,446	3,446	3,446	3,446	
Provincial - Bracket 2	0	962	3,735	6,437	9,242	
Provincial - Bracket 3	0	0	0	1,389	4,485	
Provincial Total	2,087	4,408	7,180	11,272	17,172	
Basic Provincial	1,161	3,375	6,084	10,146	15,979	
TOTAL TAX PAYABLE	2,709	7,976	14,795	22,910	33,613	
Average Rate of Tax	12.3%	18.1%	22.4%	26.0%	30.6%	
Federal	7.2%	10.9%	14.2%	15.9%	17.7%	
Provincial	5.4%	8.0%	9.9%	12.7%	16.1%	

Corporate income tax (federal and provincial)

All corporations are liable to pay federal income tax under the *Income Tax Act*. The tax rate varies by type and size of company and by province. Provincial governments also levy a corporation income tax on any company having a permanent establishment in that province.

Estimation Method and Results

1. To calculate tax liability precisely is very difficult. It requires knowledge of the total tax base, and the proportion of the tax base attributable to the provinces. Therefore, an approximate method has been used.
2. In British Columbia, the federal corporate income tax collected per employee was \$1,605 provincial corporate income tax collected per employee was \$833 in 2009.
3. Assuming all companies pay tax at the average rate per employee calculated above, the 2009 corporation income tax liability of the airports of YLW employment sector is estimated to be \$2 million toward federal revenues and \$1 million toward provincial revenues. The estimated total corporate income tax revenue is about \$3 million as shown in **Table G-3**.

Table G-3: Estimated Corporate Income Tax Paid by Firms within YLW

Government	Revenue (\$ million)
Federal	\$2
Provincial	\$1
<i>Total</i>	<i>\$3</i>

Aviation Fuel Tax

The federal and provincial governments levy taxes on jet fuel. The tax rates for fuel sales are shown in **Table G-4**.

Table G-4: British Columbia Fuel Tax Rates, 2009

Federal	British Columbia
\$/Litre	
\$0.04	\$0.02

Estimation Method and Results

The main fuel concessions were surveyed as to the total amount of fuel sold in 2009. The total tax revenues from fuel sales at YLW amount to approximately \$12,000. Of this total, \$6,000 was collected by the Federal government and the government of British Columbia collected \$6,000.

Employment Insurance premiums

Tax base and rates. In 2009, employees in Canada paid employment insurance (EI) premiums equal to 1.73% of earnings up to a maximum of \$732 per year. (Maximum insurable earnings are \$42,300). Employers paid EI premiums equal to 1.4 times employee premiums.

Estimation Method and Results

The employee premium rate is applied to total payroll costs for employees earning less than \$42,300 per year. The maximum contribution was used for employees earning more than \$42,300 per year. Estimated employee payments were approximately \$700,000 in 2009.

The employer rate is applied to the employee payments. Estimated employer payments were approximately \$1 million in 2009.

Canada Pension Plan contributions

Tax base and rates. In 2009, employee contributions for the Canada Pension Plan (CPP) were 4.95% of pensionable earnings. Pensionable earnings are actual earnings less \$3,500, to a maximum of \$46,300. The maximum annual employee contribution is \$2,119. The employer contribution is the same as the employee contribution.

Estimation Method and Results

The employee contribution rate is applied to average payroll for employees earning less than \$42,800 a year. The maximum contribution was used for employment earning more than the maximum pensionable earnings.

Estimated employer and employee contributions are about \$2 million each, for a total of \$4 million.

Workers' Compensation Board contributions

Tax base and rates. Employers in each province are required to make contributions to the Workers' Compensation Board to help offset the cost of on-the-job injuries. Employers are classified into industry groups. The contribution rate for each group is based on the injury costs associated with all companies in that group.²⁸ The group

²⁸ Subject to Experience Rating Adjustment for individual companies.

contribution rate varies widely among industries and provinces. Some major companies are not included in the general "rateable" method of contribution but simply pay the actual cost of their claims plus an allowance for WCB administration costs. As it is not generally known which firms contribute in this manner, nor the value of their claims, an estimate based on reported payroll has been made for all firms.

Conceptual issues. It is possible that some companies are self-insured and their payments could be viewed as a business expense rather than a tax. However, we have chosen to include their contribution because they are required to be part of this government-mandated program.

Estimation Method and Results

The contribution rates for each employment classification at the airport have been applied to the total payroll for that group. YLW employees paid an estimated \$500,000 to Worker's Compensation in 2009.

Medical Services Plan premiums

Tax base and rates. Medical Services Plan (MSP) premiums for British Columbia in 2009 were:

Single	- \$54 per month
Family of two	- \$96 per month
Family of three or more	-\$108 per month

Conceptual issue. Premiums must be paid by any person registered with the Plan, whether they are employed or not.²⁹ Therefore, premiums are not directly related to employment. Nevertheless, many employers pay premiums on behalf of their employees. Therefore, premiums are included as a tax contribution.

²⁹ Low income persons may qualify for premium assistance.

Estimation Method and Results

Many employees may be covered by premiums paid by or on behalf of a spouse. Therefore, an employee may not need the coverage offered by an employer. For any group of employees it is difficult to know how many have coverage through a spouse. Therefore, we have assumed that all employees are covered as a result of employment, but that the premium required is only the rate for single persons.

Total employment of 1,290 person years at \$648 per employed person (\$54 x 12 months) equals a total contribution of \$835,000.

Property Taxes collected by local government

Local governments levy property taxes to help them finance local services.

YLW does not pay property taxes to the City of Kelowna, as the airport owned and operated by the city. Instead, YLW pays the city a Municipal Services Fee of \$266,000 for services such as police, fire, and planning and development services.

However, YLW tenants paid municipal taxes amounting to \$1 million for the 2009 tax year.

Federal Ground Lease Payable in 2009

The Kelowna International Airport did not pay the Federal Ground Lease payment to the Federal Government in 2009.

Appendix H: Tax Revenues Attributable to Airport Users³⁰

YLW Passengers in 2009

In 2009, over 1.3 million passengers enplaned and/or deplaned at YLW. **Table H-1** shows the passenger movements used in this study including breakdown into sectors and percentage of connecting passengers at YLW.

Table H-1: Passenger Movements 2009

Sector	Enplaned Plus Deplaned 2009	Percent Connectin g
Domestic	1,254,544	0%
Transborder	92,531	0%
International	20,556	0%
<i>Total</i>	1,367,631	
Daily Average	3,747	

Notes: The percent of connecting passengers is negligible and close to zero.

NAV CANADA Charges

Prior to November 1, 1998, the Canadian government collected the Air Transportation Tax (ATT) to fund aviation programs, including air navigation services. The ATT was levied on all tickets purchased in Canada as well as those purchased internationally for trips that included an enplanement in Canada. ATT rates were adjusted frequently, reaching a high in May 1995 of 7% + \$6 (to a maximum of \$55) for domestic and transborder flights, and a flat rate of \$55 for international flights.

When control of air navigation services was privatised and passed to NAV CANADA on November 1, 1996, the ATT was gradually replaced by NAV CANADA charges. These fees, collected under authority of the Civil Air Services Commercialisation Act, *are not*

³⁰ For this study, only the Government Services Tax (GST) is calculated as the tax study analysis is for 2009. Thus, although the Harmonized Sales Tax (HST) was implemented beginning July 1, 2010 in British Columbia, this does not apply to the analysis presented in this report.

taxes on ticket sales; they are service charges billed to aircraft operators. In order to recover these costs, airlines usually pass these charges on to passengers, though NAV CANADA does not dictate how this is done. Most carriers apply a flat rate NAV CANADA surcharge to tickets they sell.

NAV CANADA fees consist of two parts: en route charges and terminal charges. En route charges are based on the maximum permissible take-off weight of the aircraft (metric tonnes) and the distance being flown in Canadian-controlled airspace. Terminal charges are dependent only on aircraft weight.

Conceptual Issues. Because the ATT is no longer collected and the fees that NAV CANADA now charges are service fees, rather than taxes, no taxes for air navigation services will be included in total taxes paid.

GST on Air Fares and the Airport Improvement Fee (AIF)

Tax Base and Rate

The 5% Goods and Services Tax (GST) applies to all tickets purchased in Canada and includes all domestic, transborder and international flights.

The airport authority charges all passengers originating their journey at YLW a Passenger Facility Charge (PFC) that is collected for the sole purpose of funding capital improvements at the airport. GST is levied on the fee.

Conceptual Issues. Taxes levied on the airfare should be shared among airports in Canada associated with the journey. The estimation method builds in a sharing assumption (50% YLW and 50% other Canadian airports).

Estimation Method and Results

GST is levied on all domestic airfares; however, due to the sharing assumption stated above, only 50% of the estimated taxes per departing passenger are attributable to YLW.

All GST paid by transborder passengers can be attributed to YLW, as the tax need not be "shared" with the American airport. However, GST is levied only on the transborder passengers who purchase their tickets in Canada, which are assumed to be the outbound portion.

Connecting passengers are excluded, as it is assumed that taxes paid by these travellers are attributable to their originating and terminating airports. Total tax on airfares is estimated to be in the range of \$4 million.

The airport authority collected nearly \$6 million through the AIF in 2009. GST tax revenue on this amount is approximately \$400,000.

GST on Air Traveller Security Charge

The Canadian Government enacted the Air Traveller Security Charge (ATSC) on April 1, 2002 to help fund security improvements at airports across Canada, as a result of the

terrorist attacks on September 11, 2001. There is a flat rate fee of \$4.67 for each chargeable enplanement for domestic travel, \$7.94 for transborder travel, and \$17 for international travel.

Tax Base and Rate

The GST applies to the ATSC.

Estimation Method

The volume of origin/destination traffic at YLW was determined. It was assumed that 50% was origin traffic at YLW. Each origin passenger pays the ATSC. A total of \$350,000 in taxes was collected on the ATSC in 2009.

Tax on Concession Purchases

Tax Base and Rate

The GST rates apply to food and beverage and retail concession purchases by travellers at the airport, while PST rates apply only to retail concession purchases.

Estimation Method and Results

Based on sales of \$3 million, GST is \$148,000 and PST is \$78,000.

Tax on Ground Transportation, Parking, and Car Rentals

The GST and PST rate applies to taxi, limousine and bus transportation, as well as to parking fees and car rentals.

Estimation Method and Results

Based on the information provided by the airport authority, parking and ground transportation revenues was about \$16 million 2009. GST on these expenditures is estimated at nearly \$800,000 and PST is estimated at over \$1 million.

Appendix I: Comparison of Economic Impact Estimates for Kelowna International Airport

In 2001, Kelowna International Airport undertook a study of its economic impact based upon an economic impact model that was originally developed by the University of Manitoba. This model of measuring economic impact was also used by Transport Canada previously. This non-survey based study yielded an economic impact result of 1,834 person years and \$310 million in economic output for the airport was conducted by Jocelyn Purcell, Marketing & Communications.

In the City of Kelowna International Airport Master Plan 2025, prepared by Inter *VISTAS* in 2005, there was an order-of-magnitude estimate of economic impact of the airport in 2015. This estimate was based upon mid-range forecasts using a methodology of applying a passenger to employment ratio to determine an estimated economic impact for the airport in future years. The incremental estimates were based on previous economic impact studies conducted by Inter *VISTAS* of airports of similar size to YLW. The potential incremental economic impact was then added to the base economic impact developed in 2001 as an order-of-magnitude estimate. Direct employment was estimated to nearly 2,000 jobs in 2006. In the same report, direct employment was forecasted to over 3,000 jobs by 2015 and economic output was forecasted to over \$525 million by the same year.

To conduct the 2010 economic impact study, Inter *VISTAS* did not rely upon factor-based macro estimates of impact. Instead the firm provided a much more robust and detailed approach using a survey-based methodology that collected information directly from airport tenants and also firms that are located off-airport that rely on YLW for its operations. Data collected from the survey accounted for 97% of the total direct person years. The overall survey response rate was also very high at 93% of total surveys sent out. The total economic impact (including direct, indirect and induced impacts) of YLW in 2010 results in over 2,500 person years of employment generating over \$600 million in economic output. Focusing only on direct impacts, this equates to nearly 1,300 person years of employment and \$300 million of economic output generated by YLW.

There are sizable methodological differences between the 2001-2005 and 2010 study approaches; these should not be directly compared. The earlier methodologies are appropriate for order-of-magnitude estimates. The 2010 study uses a methodology that major airports such as YVR, YEG and YOW have employed to better and more accurately represent jobs, economic output and benefits of the airport.

Appendix J: Glossary of Terms

Contract Work: Any work which is done for a company by an individual who is not on the payroll or work done for a company by another company. Generally speaking, firms will contract out work in areas in which they do not have expertise or when there are cost advantages to doing so.

Direct Employment: Direct employment is employment that can be directly attributable to the operations in an industry, firm, etc. It is literally a head count of those people who work in a sector of the economy. In the case of the airport, all of those people who work in an aviation related capacity would be considered direct employment.

Economic Activity: (also Output, Production) The end product of transforming inputs into goods. The end product does not necessarily have to be a tangible good (for example, knowledge), nor does it have to create utility (for example, pollution). Or, more generally, the process of transforming the factors of production into goods and services desired for consumption.

Employment Impact: Employment impact analysis determines the economic impact of employment in terms of jobs created and salaries and wages paid out. In the case of the airport, the direct, indirect, induced and total number of jobs or person years created at the airport is examined to produce a snapshot of airport operations.

Full Time Equivalent (FTE): (also Person Year) One full time equivalent (FTE) year of employment is equivalent to the number of hours that an individual would work on a full time basis for one year. In this study we have calculated one full time equivalent year to be equivalent to 1,832 hours. Full time equivalent years are useful because part time and seasonal workers do not account for one full time job.³¹

GDP: (also value-added) A measure of the money value of final goods and services produced as a result of economic activity in the nation. This measure is net of the value of intermediate goods and services used up to produce the final goods and services.

GNP: GNP is equal to GDP plus the incomes of nationals abroad and minus income of foreigners.

Ground Transportation: Ground Transportation at the airport includes any vehicles which transport passengers from the airport to the cities or from the cities to the airport. This would include taxicab service, limousine service and hotel van service. Valet services as well as skycaps are included in this category.

Indirect Employment: Indirect employment is employment which results because of direct employment. For the airport, it would include that portion of employment in

³¹ *The Dictionary of Modern Economics*, David W. Pearce, General Editor, The MIT Press, Cambridge Mass., 1984

supplier industries which are dependent on sales to the air transport sector. In some cases, contract work would be considered indirect employment.

Induced Employment: Induced employment is employment created because of expenditures by direct and indirect employees.

Multiplier Analysis: Analysis using economic multipliers in which indirect and induced economic impacts is quantified. Essentially, a multiplier number is applied to the "directly traceable economic impact" to produce indirect and total effects (see Multiplier.)

Multiplier: Economic multipliers are used to infer indirect and induced effects from a particular sector of the economy. They come in a variety of forms and differ in definition and application. A multiplier is a number which would be multiplied by direct effects in order to calculate indirect or induced effects. In the case of the airport, as in many other cases, multipliers can lead to illusory results, and thus must be used with great care.

Output: (also Economic Activity, Production) The end product of transforming inputs into goods. The end product does not necessarily have to be a tangible good (for example, knowledge), nor does it have to create utility (for example, pollution). Or, more generally, it is defined as the process of transforming the factors of production into goods and services desired for consumption.

Seasonality: Seasonality results when the supply and demand for a good is directly related to the season in which is consumed. For example, ski resorts experience changes in net income as a result of seasonality. Airports and airport services also experience seasonality as a result of vacation times for families (typically during the summer) and/or temperatures abroad (typically at Christmas time). As a result of seasonality in demand for flights, some air carriers increase frequency of flights to certain areas during the busy season.

Tenant: A firm which pays a lease to a leasing company or to the airport authority directly.

Value-Added: (also GDP) A measure of the money value of final goods and services produced as a result of economic activity in the nation. This measure is net of the value of intermediate goods and services used up to produce the final goods and services.