

FINAL REPORT:
**2011 Comox Valley Airport (YQQ)
Economic Impact Micro Studies**



strategic
transportation
& tourism
solutions



Prepared for
Comox Valley Airport

Prepared by
InterVISTAS Consulting Inc.

September 2011

Table of Contents

Executive Summary.....	1
Table ES-1: <i>Direct Annual Economic Impact of Air Service Operations and Servicing of Air Passenger Services at Comox Valley Airport (YQQ)</i>.....	2
1. Introduction.....	5
1.1 What is Economic Impact?.....	5
1.2 Scope of the Study.....	6
1.3 Outline of the Study.....	6
2. Methodology	7
2.1 Introduction	7
2.2 Estimating Economic Impact.....	7
2.3 Surveying Direct Employment.....	8
2.4 Economic Multipliers	8
2.5 Gross Domestic Product and Economic Output Impacts	9
2.6 Estimating Visitor Spending Impacts.....	9
3. Economic Impact of Passenger Services at Comox Valley Airport	11
3.1 Direct Airport Related Economic Impact of Air Service Operations.....	11
4. Visitor Spending Impacts.....	13
4.1 Non-Local Visitors	13
4.2 Visitor Spending Estimates	14
4.3 Direct Visitor Spending Impacts	15
5. Summary	16
Appendix A: Calculation of Person Hours per Year	20
Appendix B: Calculation of Estimated Annual Number of Non-Local Visitors	21

Executive Summary

InterVISTAS Consulting Inc. (InterVISTAS) was commissioned by Comox Valley Airport (YQQ) to conduct economic impact micro studies of current and potential air services to support the airport's ongoing air service development initiatives. The purpose of these micro studies is to demonstrate the extent of the potential economic benefits to the surrounding community and economy that are associated with the air passenger services. These studies do not quantify the full economic impact of the airport and its operations.

These micro studies estimate the annual economic impact of the following air services:

- A once daily year-round domestic air passenger service operated with a 119-seat B737-600 aircraft.
- A once daily year-round transborder air passenger service operated with a 70-seat Q400 aircraft.
- A once weekly seasonal international air passenger service to Europe operated with a 250-seat aircraft.

Every arrival of a passenger flight at YQQ generates labour hours for individuals with jobs involved in handling passengers, their baggage, cargo and the aircraft. In addition, each flight will bring in non-local visitors, who will spend money on hotels, taxis, food and beverage, entertainment, etc. These micro studies estimate the economic impact generated by current and potential services at YQQ, including:

- **Direct Aviation Sector Impacts:** those associated with employment in the aviation sector directly related to the operating and servicing the new air services (e.g., customer services, airline crew based in Comox, ground handling, cleaning, maintenance and airport staff members, etc.)
- **Direct Visitor Spending Impacts:** economic impacts generated by incremental visitor spending in the area that would be brought about by the new air service (e.g., on food, lodging, entertainment, etc.).

The economic impacts have measures in a number of ways including: additional spending in the local economy, additional full-time employment, and contribution to Gross Domestic Product (GDP).

The *direct* annual economic impacts of air service operations and servicing of each of the three services are provided in **Table ES-1**, while the *direct* annual economic impacts attributed to annual visitor spending from each air service are summarised in **Table ES-2**. **Table ES-3** shows the total direct economic impact of each air service combining the impact of the airport related operations and the visitor spending.¹

Table ES-1: Direct Annual Airport Related Economic Impact of Air Service Operations and Servicing of Air Passenger Services at Comox Valley Airport (YQQ)

Service	Direct Employment (Person Years²)	Direct Wages (\$ Millions)	Direct GDP (\$ Millions)	Direct Economic Output (\$ Millions)
Domestic <i>Daily service:</i> 119 seat, B737-600 aircraft	20	\$1.2	\$2.5	\$5.8
Transborder <i>Daily service:</i> 70 seat, Q400 aircraft	13	\$0.8	\$1.6	\$3.8
International <i>Once weekly seasonal service:</i> 250 seat aircraft	4	\$0.3	\$0.5	\$1.3

¹ Only the direct impacts is estimated (and not indirect and induced impacts) to mitigate double counting.

² 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. See **Appendix A** for a detailed calculation of the number of hours per person year. Person years are the same as full-time equivalents (FTEs).

Table ES-2: Direct Annual Visitor Spending Impact of Air Passenger Services at Comox Valley Airport (YQQ)

Air Service	Direct Employment (Person Years³)	Direct Wages (\$ Millions)	Direct GDP (\$ Millions)	Direct Visitor Spending (Economic Output) (\$ Millions)
Domestic <i>Daily service:</i> 119 seat, B737-600 aircraft	237	\$6.6	\$11.0	\$20.6
Transborder <i>Daily service:</i> 70 seat, Q400 aircraft	109	\$3.2	\$5.3	\$9.7
International <i>Once weekly seasonal service:</i> 250 seat aircraft	18	\$0.5	\$0.9	\$1.6

Notes:

- Domestic air passenger service analysed is operated once daily year-round with a 119-seat B737-600 aircraft; transborder air passenger service analysed is operated once daily year-round with a 70-seat Q400 aircraft; and international air passenger service to Europe analysed is operated once weekly seasonal with a 250-seat aircraft.
- Domestic visitors' spending patterns is taken from Statistics Canada's Travel Survey of Residents of Canada and based on commercial airplane visitors to Vancouver Island.
- Transborder and international visitors' spending patterns is taken from Statistics Canada's International Travel Survey and based on commercial airplane visitors to British Columbia.
- Direct visitor spending is equivalent to direct economic output.

³ 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. See **Appendix A** for a detailed calculation of the number of hours per person year. Person years are the same as full-time equivalents (FTEs).

Table ES-3: Combined *Direct* Annual Economic Impact of Air Service Operations and Servicing and Visitor Spending Impact of Air Passenger Services at Comox Valley Airport (YQQ)

Service	Direct Employment (Person Years⁴)	Direct Wages (\$ Millions)	Direct GDP (\$ Millions)	Direct Economic Output (\$ Millions)
Domestic <i>Daily service:</i> 119 seat, B737-600 aircraft	257	\$7.8	\$13.5	\$26.4
Transborder <i>Daily service:</i> 70 seat, Q400 aircraft	122	\$4	\$6.9	\$13.5
International <i>Once weekly seasonal service:</i> 250 seat aircraft	22	\$0.8	\$1.4	\$2.9

⁴ 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. See **Appendix A** for a detailed calculation of the number of hours per person year. Person years are the same as full-time equivalents (FTEs).

1. Introduction

InterVISTAS Consulting Inc. (InterVISTAS) was commissioned by Comox Valley Airport (YQQ) to conduct economic impact micro studies of current and potential air services to support the airport's ongoing air service development initiatives. The purpose of these micro studies is to demonstrate the extent of the potential economic benefits to the surrounding community and economy that are associated with the air passenger services. These studies do not quantify the full economic impact of the airport and its operations.

These micro studies estimate the annual economic impact of the following air services:

- A once daily year-round domestic air passenger service operated with a 119-seat B737-600 aircraft
- A once daily year-round transborder air passenger service operated with a 70-seat Q400 aircraft
- A once weekly seasonal international air passenger service to Europe operated with a 250-seat aircraft

1.1 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 impacts 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 (sometimes called the Gross Domestic Product or GDP) and 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.

The economic impact can be broken down into the following categories:

Direct economic impact is employment that can be attributed to processing an aircraft and its passengers. It also includes some overhead labour. The direct employment base includes customer services, airline crew, ground handling, cleaning, maintenance and airport staff members.

Indirect economic impact is employment in down-stream industries that results from the presence of the air service. For example, food wholesalers that supply food for catering on flights would be considered indirect employment. Indirect employment is generated in industries that supply or provide services to the direct employment.

Induced economic impact is employment generated from expenditures by individuals employed indirectly or directly. For example, if an airline employee 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 the air service.

Only direct impacts are presented in this study.

1.2 Scope of the Study

The annual micro economic impact of three air services to/from YQQ was assessed based on two key aspects:

1. The employment impact of air service operations and servicing; and
2. Visitor spending impacts.

The air services examined are: domestic air passenger service operated once daily year-round with a 119-seat B737-600 aircraft; transborder air passenger service operated once daily year-round with a 70-seat Q400 aircraft; and international air passenger service to Europe operated once weekly seasonal with a 250-seat aircraft. These micro economic impact studies will approximate the economic benefits of the three air services to/from YQQ to the economy of the Province of British Columbia.

1.3 Outline of the Study

This report provides an estimate of the economic impacts related to three air services to/from YQQ.

- **Chapter 2** explains the methodology for estimating the potential annual economic impact of the three air services.
- **Chapter 3** measures and describes the annual employment impacts related to the three air services.
- **Chapter 4** measures and describes the visitor spending impacts related to the three air services.

2. Methodology

2.1 Introduction

Every arrival of a passenger flight at Comox Valley Airport generates labour hours for individuals with jobs involved in handling passengers, their baggage, cargo and the aircraft. To gain an understanding of the effect that new air services may have on the labour necessary to operate every aspect of a flight, economic impact studies examine the economic inputs and outputs of air service. We call these analyses micro studies to differentiate them from other broader economic impact studies of an airport that take into account all employment and economic activity at an airport, not just that associated with a given service to a particular destination.

These micro studies assess the impact of all activities related to aircraft landing, departure and activities completed during turnaround time and in-flight. Among others, these activities include unloading inbound passengers and their baggage, and then re-loading the aircraft with outbound passengers and their baggage. The estimated labour hours in these micro studies also include the employment involved in processing each aircraft and its passengers, such as catering, cleaning, maintenance, fuelling, ground service, etc. The impacts also include the labour hours of in-flight airline employees (flight and cabin crew).

The micro studies also assess the direct labour hours of other services offered at the airport, such as car rental agencies, food concessions, etc., are estimated. Direct employment impacts at ground transport providers and at hotels are also considered. In addition to the airline employees in the public areas of the terminal, the airlines also have administrative employees in the office area of the terminal. The labour hours of employees behind the scenes, such as managers, accountants, crew trainers and load planners are also included in these micro studies. The figures in these micro studies represent the average labour impacts of the air services. It includes the sum of all of the labour hours from all jobs associated with each flight - both “hands-on” jobs as well as “overhead” jobs.

In addition, each flight will bring in non-local visitors, who will spend money on hotels, taxis, food and beverage, entertainment, etc. The non-local visitor spending facilitated by the air services are estimated in these micro studies.

This section provides a brief overview of the methods employed in the analysis.

2.2 Estimating Economic Impact

The direct economic impact of air services to/from YQQ was based on an analysis of the employment associated with these services. Employment figures are generally more understandable by the public than more abstract measures such as Gross Domestic Product (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 For the specific purpose of these micro studies, we examine the size of the employment base involved in processing the aircraft and its passengers for each air service, and the impact it has on the economy.

In addition, economic multipliers were used to infer other economic impacts from the employment figures, such as wages, and GDP. Economic multipliers were also used to estimate the indirect and induced (or multiplier) impacts. The economic multipliers produced by Statistics Canada translate the number of direct person years of employment in a specific economic sector into the associated monetary measures of economic activity.

The air services will also bring in non-local visitors, who will spend money on items such as hotels, taxis, food and beverage, entertainment, etc. Non-local visitor spending impacts are estimated by making reasoned assumptions on the mix of outbound and inbound passengers on the air services and applying average domestic, transborder and international visitor spending data from Statistics Canada's Travel Survey of Residents of Canada and International Travel Survey.

2.3 Surveying Direct Employment

Employment attributable to air services to/from YQQ was estimated through interviews with airline and airport representatives, as well as InterVISTAS' knowledge gained from other studies and existing industry data. Direct employment associated with air service includes customer services, ground handling, cleaning, maintenance, airport staff members, and airline crew. Airline staff was asked to provide time and resource estimates required in processing a flight with respect to different tasks and functions that an airline needs to execute to turn an aircraft at the airport. The responses provided were then used as the primary inputs to modeling the total estimated amount of employment that is associated with a particular air service.

2.4 Economic Multipliers

Indirect and induced effects are typically measured by the use of *economic multipliers*. Economic multipliers account for the inter-industry relationships within regions and describe how local economies are likely to respond to various changes. Multipliers are based on complex accounting and economic "input-output" analyses, which shows the distribution of the inputs purchased and the outputs sold for particular industries.⁶ They come in a variety of forms and differ greatly in definition and application. Thus, analysts must exercise great care 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;

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, which needs to generate revenues to cover the caterer's revenues.

⁶ The multipliers used for the analysis are based on Statistics Canada economic multipliers for British Columbia from the 2007 Interprovincial Input-Output model, the most recent available. These multipliers were updated with Consumer Price Indices to account for inflation.

- the level of unemployment in the economy;
- the assumption of constant returns to scale in production;
- the assumption that the economy's structure is static over time; and
- the assumption that there are no displacement effects.

The multiplier impacts present the potential indirect and induced impacts that can be achieved under a given set of economic conditions. In reality, these conditions may not all apply, and the multiplier impacts may be somewhat different. That said, the multipliers used are based on the best model and data available. In general, the focus of our report is on the direct impacts which are the most accurate and verifiable figures. While multiplier impacts are useful and important, the user should be mindful of their limitations.

2.5 Gross Domestic Product and Economic Output Impacts

In addition to employment, the economic impact of the air services can be measured in terms of the dollar impacts on the economy.

The two most common measures of economic contribution (in addition to employment) are *gross domestic product (GDP)* and *economic output*. 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).

One approach to measuring economic output and GDP 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.

2.6 Estimating Visitor Spending Impacts

Air service delivers in-bound business and leisure travelers into a market. These visitors then spend money in the local economy – on hotels, taxis, recreation, food and beverage, entertainment, etc. By bringing money into a region and spending it there, in-bound visitors exert an immediate and direct impact on the local economy.

This study includes an estimate of the non-local visitor spending facilitated by the air services. Given estimates of the number of in-bound visitors, we apply estimates of domestic and

international visitor spending patterns supplied by Statistics Canada's Travel Survey of Residents of Canada and International Travel Survey to produce estimates of the total spending of non-local visitors from each air service, and how that spending is distributed among different categories (e.g., accommodations or entertainment).

3. Economic Impact of Passenger Services at Comox Valley Airport

Micro economic impact studies are used to describe and document the direct local labour hours generated in servicing the departure of each passenger flight at YQQ. In particular, the following services at YQQ are examined:

- A once daily year-round domestic air passenger service operated with a 119-seat B737-600 aircraft.
- A once daily year-round transborder air passenger service operated with a 70-seat Q400 aircraft.
- A once weekly seasonal international air passenger service to Europe operated with a 250-seat aircraft.

Information for each micro study was gathered through telephone interviews with WestJet's and Central Mountain Air's Station Managers at YQQ. Based on these interviews, certain assumptions were made to estimate the employment and labour hours needed in handling potential transborder and international services.

3.1 Direct Airport Related Economic Impact of Air Service Operations

Table 3-1 illustrates the direct employment impact of air passenger services on a per flight basis for jobs occurring at the airport, and also indicates the annual impact based on the number of flights operated each year. The table shows that the domestic air service has a higher employment impact - this is mainly due the larger aircraft size and associated labour hours from aircraft crew.

Table 3-1: Direct Airport Related Employment Impact of Air Service Operations and Servicing of Air Passengers Services at Comox Valley Airport (YQQ)

Air Service	Number of Annual Services	Per Flight (Person Years) ⁷	Annual Employment (Person Years)
Domestic	365 flights	0.05	20
Transborder	365 flights	0.03	13
International	20 flights	0.21	4

Notes: Domestic air passenger service analysed is operated once daily year-round with a 119-seat B737-600 aircraft; transborder air passenger service analysed is operated once daily year-round with a 70-seat Q400 aircraft; and international air passenger service to Europe analysed is operated once weekly seasonal with a 250-seat aircraft, operating for 20 weeks.

A summary of the annual direct economic impact of the air passenger services, including wages, GDP and economic output, is provided in **Table 3-2**.⁸ The once daily year-round domestic service from Comox Valley generates 20 person years of employment and approximately \$1.2 million in wages, along with \$2.5 million in value-added GDP and \$5.8 million in economic output. The once daily year-round transborder service from Comox Valley generates 13 person years of employment and nearly \$800,000 in wages, along with approximately \$1.6 million in value-added GDP and \$3.8 million in economic output. The once weekly seasonal international service to Europe from Comox Valley generates 4 person years of employment and nearly \$300,000 in wages, along with over \$500,000 in value-added GDP and approximately \$1.3 million in economic output.

Table 3-2: Annual Direct Airport Related Economic Impact of Air Service Operations and Servicing of Air Passenger Services at Comox Valley Airport (YQQ)

Service	Employment (Person Years)	Wages (\$ Millions)	GDP (\$ Millions)	Economic Output (\$ Millions)
Domestic	20	\$1.2	\$2.5	\$5.8
Transborder	13	\$0.8	\$1.6	\$3.8
International	4	\$0.3	\$0.5	\$1.3

Notes: Domestic air passenger service analysed is operated once daily year-round with a 119-seat B737-600 aircraft; transborder air passenger service analysed is operated once daily year-round with a 70-seat Q400 aircraft; and international air passenger service to Europe analysed is operated once weekly seasonal with a 250-seat aircraft.

⁷ 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. See **Appendix A** for a detailed calculation of the number of hours per person year. Person years are the same as full-time equivalents (FTEs).

⁸ Only the direct impacts is estimated (and not indirect and induced impacts) to mitigate double counting.

4. Visitor Spending Impacts

The new air services will bring in non-local visitors to Comox, spending money on items such as hotels, taxis, food and beverage, entertainment, etc. This section presents the non-local visitor spending impacts of the three air services to/from YQQ.

4.1 Non-Local Visitors

After making reasoned assumptions on the mix of outbound and inbound passengers on the air services, the annual number of non-local visitors to the Comox Valley from the three air services is estimated.⁹ Domestic, transborder and international visitor characteristics and spending patterns from Statistics Canada's Travel Survey of Residents of Canada and International Travel Survey are used to estimate the total spending of non-local visitors from each air service. **Figure 4-1** shows the estimated number of non-local visitors from each of the air services per annum, the average nights per trip, average tourist spend per night and the total expenditure. The number of non-local visitors to Comox resulting from the once daily year-round domestic air service analysed is estimated to be 19,492 non-local visitors per annum. The potential once daily year-round transborder air service is expected to bring in 10,702 visitors per annum to the Comox Valley region. An estimated 1,063 non-local visitors to Comox a year are expected from the potential once weekly seasonal international air service from Europe.

Table 4-1: Estimated Number of Non-Local Visitors of Air Passenger Services at Comox Valley Airport (YQQ) per Annum

Service	Non-Local Visitors	Average Nights per Trip	Average Spend per Night
Domestic	19,492	6.59	\$160
Transborder	10,702	4.56	\$198
International	1,063	8.63	\$171

Notes:

- Domestic air passenger service analysed is operated once daily year-round with a 119-seat B737-600 aircraft; transborder air passenger service analysed is operated once daily year-round with a 70-seat Q400 aircraft; and international air passenger service to Europe analysed is operated once weekly seasonal with a 250-seat aircraft.
- Non-local visitors per air service calculated based on estimated load factor and % of non-resident passengers per potential air service. See **Appendix B** for a detailed calculation.
- Domestic visitors' average nights per trip and average spend per night is taken from Statistics Canada's Travel Survey of Residents of Canada and based on commercial airplane visitors to Vancouver Island.
- Transborder and international visitors' average nights per trip and average spend per night is taken from Statistics Canada's International Travel Survey and based on commercial airplane visitors to British Columbia.

⁹ See **Appendix B** for a detailed calculation of the estimated load factor and % of non-resident passengers per potential air service.

4.2 Visitor Spending Estimates

By applying average domestic, transborder and international visitor spending data from Statistics Canada's Travel Survey of Residents of Canada and International Travel Survey, the total spending of non-local visitors from each air service and how that spending is distributed among different categories (e.g., accommodations or entertainment) is estimated. The additional average non-local expenditure per year for each category and total expenditure that is attributed to each air service is shown in **Table 4-2**. The non-local visitors to Comox resulting from the once daily year-round domestic air service analysed are estimated to spend over \$20 million each year. The potential once daily year-round transborder air service is expected to bring a total expenditure of over \$9 million each year. An estimated total expenditure of nearly \$1.6 million a year is expected from the potential once weekly seasonal international air service from Europe.

Table 4-2: Average Annual Non-Local Expenditure of Air Passenger Services at Comox Valley Airport (YQQ)

Category	Average Expenditure per Air Service (\$ Millions)		
	Domestic	Transborder	International
Accommodations	\$7.6	\$4.1	\$0.5
Local Transportation	\$3.2	\$1.3	\$0.2
Food & Beverage	\$7.1	\$2.0	\$0.4
Recreation and Entertainment	\$0.7	\$1.2	\$0.2
Other (Souvenirs, Shopping, Etc.)	\$2.0	\$0.9	\$0.3
Total Expenditure	\$20.6	\$9.7	\$1.6

Notes:

- Values may not add up due to rounding.
- Domestic air passenger service analysed is operated once daily year-round with a 119-seat B737-600 aircraft; transborder air passenger service analysed is operated once daily year-round with a 70-seat Q400 aircraft; and international air passenger service to Europe analysed is operated once weekly seasonal with a 250-seat aircraft.
- Domestic visitors' spending patterns is taken from Statistics Canada's Travel Survey of Residents of Canada and based on commercial airplane visitors to Vancouver Island.
- Transborder and international visitors' spending patterns is taken from Statistics Canada's International Travel Survey and based on commercial airplane visitors to British Columbia.

4.3 Direct Visitor Spending Impacts

In addition to the employment and other economic impacts of the operations and servicing of the three air passenger services, there are also economic impacts associated with visitor spending. The economic impacts associated with the non-local visitor spending from the air services are estimated using Statistics Canada multipliers. These multipliers estimate the direct employment generated by each dollar of non-local visitor spending, as well as wages and GDP.¹⁰ Visitor spending from the once daily year-round domestic air services at YQQ analysed in this study could potentially support up to 237 direct person years of employment and \$11.0 million in direct GDP per annum in the Province of British Columbia. The total expenditure of non-local visitors on the potential once daily year-round transborder service could yield up to 109 direct person years of employment and \$5.3 million in direct GDP per annum in the province. Each year visitor spending from the potential international air service from Europe could generate 18 direct person years of employment and \$0.9 million in direct GDP per annum in the Province of British Columbia. The direct economic impacts attributed to annual visitor spending from each air service are summarised in **Table 4-3**.

Table 4-3: Direct Annual Visitor Spending Impact of Air Passenger Services at Comox Valley Airport (YQQ)

Air Service	Visitor Spending (\$ Millions)	Employment (Person Years)	Wages (\$ Millions)	GDP (\$ Millions)
Domestic	\$20.6	237	\$6.6	\$11.0
Transborder	\$9.7	109	\$3.2	\$5.3
International	\$1.6	18	\$0.5	\$0.9

Notes:

- Domestic air passenger service analysed is operated once daily year-round with a 119-seat B737-600 aircraft; transborder air passenger service analysed is operated once daily year-round with a 70-seat Q400 aircraft; and international air passenger service to Europe analysed is operated once weekly seasonal with a 250-seat aircraft.
- Domestic visitors' spending patterns is taken from Statistics Canada's Travel Survey of Residents of Canada and based on commercial airplane visitors to Vancouver Island.
- Transborder and international visitors' spending patterns is taken from Statistics Canada's International Travel Survey and based on commercial airplane visitors to British Columbia.

¹⁰ Only the direct impacts of visitor spending is estimated (and not indirect and induced impacts) to mitigate double counting.

5. Summary

InterVISTAS Consulting Inc. (InterVISTAS) was commissioned by Comox Valley Airport (YQQ) to conduct economic impact micro studies of current and potential air services to support the airport's ongoing air service development initiatives. The purpose of these micro studies is to demonstrate the extent of the potential economic benefits to the surrounding community and economy that are associated with the air passenger services. These studies do not quantify the full economic impact of the airport and its operations.

These micro studies estimate the annual economic impact of the following air services:

- A once daily year-round domestic air passenger service operated with a 119-seat B737-600 aircraft.
- A once daily year-round transborder air passenger service operated with a 70-seat Q400 aircraft.
- A once weekly seasonal international air passenger service to Europe operated with a 250-seat aircraft.

Every arrival of a passenger flight at YQQ generates labour hours for individuals with jobs involved in handling passengers, their baggage, cargo and the aircraft. In addition, each flight will bring in non-local visitors, who will spend money on hotels, taxis, food and beverage, entertainment, etc. These micro studies estimate the economic impact generated by current and potential services at YQQ, including:

- **Direct Aviation Sector Impacts:** those associated with employment in the aviation sector directly related to the operating and servicing the new air services (e.g., customer services, airline crew based in Comox, ground handling, cleaning, maintenance and airport staff members, etc.)
- **Direct Visitor Spending Impacts:** economic impacts generated by incremental visitor spending in the area that would be brought about by the new air service (e.g., on food, lodging, entertainment, etc.).

The economic impacts have measures in a number of ways including: additional spending in the local economy, additional full-time employment, and contribution to Gross Domestic Product (GDP).

The *direct* annual economic impacts of air service operations and servicing of each of the three services are provided in **Table 5-1**, while the *direct* annual economic impacts attributed to annual visitor spending from each air service are summarized in **Table 5-2**. **Table 5-3** shows the total direct economic impact of each air service combining the impact of the airport related operations and the visitor spending.¹¹

Table 5-1: Direct Annual Economic Impact of Air Service Operations and Servicing of Air Passenger Services at Comox Valley Airport (YQQ)

Service	Direct Employment (Person Years¹²)	Direct Wages (\$ Millions)	Direct GDP (\$ Millions)	Direct Economic Output (\$ Millions)
Domestic <i>Daily service:</i> 119 seat, B737-600 aircraft	20	\$1.2	\$2.5	\$5.8
Transborder <i>Daily service:</i> 70 seat, Q400 aircraft	13	\$0.8	\$1.6	\$3.8
International <i>Once weekly seasonal service:</i> 250 seat aircraft	4	\$0.3	\$0.5	\$1.3

¹¹ Only the direct impacts is estimated (and not indirect and induced impacts) to mitigate double counting.

¹² 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. See **Appendix A** for a detailed calculation of the number of hours per person year. Person years are the same as full-time equivalents (FTEs).

Table 5-2: Direct Annual Visitor Spending Impact of Air Passenger Services at Comox Valley Airport (YQQ)

Air Service	Direct Employment (Person Years¹³)	Direct Wages (\$ Millions)	Direct GDP (\$ Millions)	Direct Visitor Spending (Economic Output) (\$ Millions)
Domestic <i>Daily service:</i> 119 seat, B737-600 aircraft	237	\$6.6	\$11.0	\$20.6
Transborder <i>Daily service:</i> 70 seat, Q400 aircraft	109	\$3.2	\$5.3	\$9.7
International <i>Once weekly seasonal service:</i> 250 seat aircraft	18	\$0.5	\$0.9	\$1.6

Notes:

- Domestic air passenger service analysed is operated once daily year-round with a 119-seat B737-600 aircraft; transborder air passenger service analysed is operated once daily year-round with a 70-seat Q400 aircraft; and international air passenger service to Europe analysed is operated once weekly seasonal with a 250-seat aircraft.
- Domestic visitors' spending patterns is taken from Statistics Canada's Travel Survey of Residents of Canada and based on commercial airplane visitors to Vancouver Island.
- Transborder and international visitors' spending patterns is taken from Statistics Canada's International Travel Survey and based on commercial airplane visitors to British Columbia.
- Direct visitor spending is equivalent to direct economic output.

¹³ 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. See **Appendix A** for a detailed calculation of the number of hours per person year. Person years are the same as full-time equivalents (FTEs).

Table 5-3: Combined *Direct* Annual Economic Impact of Air Service Operations and Servicing and Visitor Spending Impact of Air Passenger Services at Comox Valley Airport (YQQ)

Service	Direct Employment (Person Years¹⁴)	Direct Wages (\$ Millions)	Direct GDP (\$ Millions)	Direct Economic Output (\$ Millions)
Domestic <i>Daily service:</i> 119 seat, B737-600 aircraft	257	\$7.8	\$13.5	\$26.4
Transborder <i>Daily service:</i> 70 seat, Q400 aircraft	122	\$4	\$6.9	\$13.5
International <i>Once weekly seasonal service:</i> 250 seat aircraft	22	\$0.8	\$1.4	\$2.9

¹⁴ 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. See **Appendix A** for a detailed calculation of the number of hours per person year. Person years are the same as full-time equivalents (FTEs).

Appendix A: Calculation of Person Hours per Year

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

Table A-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.¹⁵ Similarly, numbers of vacation and sick leave days may also vary.

¹⁵ 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 1,840 figure, we infer a lower number of person years.

Appendix B: Calculation of Estimated Annual Number of Non-Local Visitors

The following are details of calculations for the annual number of non-local visitors per air passenger service at Comox Valley Airport (YQQ).

Table B-1: Estimated Annual Number of Non-Local Visitors of Air Passenger Services at Comox Valley Airport (YQQ)

Potential Air Service	Domestic	Transborder	International
Aircraft Type	B737-600	Q400	
Capacity	119 seats	70 seats	250 seats
Load Factor	75%	70%	85%
Weekly Frequency	7	7	1
Weeks per Year	52	52	20
Estimated % Visitors	60%	60%	25%
Annual Estimated Total Visitors	19,492	10,702	1,063

Notes: Domestic and transborder air services are assumed to be operated once daily year-round, while the international air service from Europe is assumed to be operated once weekly during 20 weeks of the year. It was assumed that 60% of domestic and transborder were non-local visitors, and 25% of passengers from Europe were non-local visitors. These percentage allocations were based on a previous market study completed by InterVISTAS Consulting for Comox Valley Airport.

Annual estimated total non-local visitors are calculated by multiplying the aircraft capacity by the load factor, the weekly flight frequency, the number of weeks per year, and the estimated percentage of visitors on board each flight.



Prepared by
InterVISTAS Consulting Inc.

Airport Square – Suite 550
1200 West 73rd Avenue
Vancouver, BC
Canada V6P 6G5

Telephone: 604-717-1800
Facsimile: 604-717-1818
www.intervistas.com