

Multiple Accounts Evaluation for the Sechelt Airport Runway Extension



PREPARED FOR District of Sechelt

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1 Introduction

The Sunshine Coast is growing and could support scheduled increased air services to Vancouver International Airport. These air services would support the development of tourism and business on the Sunshine Coast, including new developments being planned now.

This paper explores the potential social and economic impacts on the Sunshine Coast if Sechelt Airport supports regional air services. This report analyses the potential impact on the region of scheduled air services from the Sunshine Coast using a Multiple Accounts Evaluation (MAE) methodology.

Sechelt Airport currently has a 2,400 foot long, 75 foot wide asphalt VFR (visual flight rules) runway that can accommodate fixed-wing aircraft and helicopters. A trailer serves as a passenger hold room for charter services. The Canadian Flight Supplement (CFS) recommends that only pilots who are familiar with the local terrain should use the airport at night and only in emergencies. The airport is registered.

Current air services at the Sechelt Airport are provided by commercial fixed-wing aircraft and helicopter operators. These offer charter services but not scheduled ones.

Sechelt can also be reached via scheduled seaplane services from Porpoise Bay on:

- Tofino Air, with scheduled seaplane service to Nanaimo, as well as charters and scenic tours; and
- Harbour Air flying to Vancouver Harbour, YVR and Nanaimo, as well as offering scheduled and charter services.

1.1.1 Airport Ownership History

The airport land was initially granted to the Districts of Sechelt and Gibsons from the Provincial Government in 1958, and was later transferred to the Federal Government (1965) until being returned to Sechelt and Gibsons in 1976 through a federal grant. The 1976 grant also included a right of first refusal, should Sechelt and/or Gibsons decide to sell their interest to the other in the airport lands. In 1996 Gibsons sold its one half interest in the airport to Sechelt, with the option for Gibsons to repurchase its interest.

¹ Sources: District of Sechelt Chronology of Airport Reports and Business Case for the Sechelt Airport Sunshine Coast British Columbia, Nov 2012.



1.1.2 The District of Sechelt

Sechelt is the fastest growing community on B.C.'s Sunshine Coast, with a 9.9% increase in population between 2006 and 2011. This is compared with a 3.1% increase for the Sunshine Coast Regional District overall, and with a 0.8% increase for Gibsons. Sechelt is 26 km from the Langdale Ferry Terminal near Gibsons, and the drive takes about 30 to 40 minutes drive time. ²

Sechelt's economy is mixed, driven historically by the forestry and mining resource industries, but has been shifting into other areas such as services, manufacturing and construction, technology, and real estate development. Tourism and cultural arts are also emerging sectors for the region.³

1.2 Report Outline

This analysis includes:

- Defining the current situation in Section Two;
- Section Three explores the Future Scenario for Sechelt Airport in detail, and the potential impacts of scheduled air services; and
- The costs and benefits of the proposed air service are discussed in **Section Four**.

² Source: Statistics Canada Population Data. Sechelt and Gibsons figures are for Population Centres.

³ Sources: BigPacific.com, Sechelt Chamber of Commerce, *Business Case for the Sechelt Airport Sunshine Coast British Columbia, Nov 2012.*



2 The Issue

Several investors are planning or considering investments in hotels and resorts on the Sunshine Coast, and are seeking passenger air services to support their goals. The current airport runway is not long or wide enough to support scheduled air services by many commercial air carriers.

The District of Sechelt therefore wants to expand the runway and related infrastructure to support the development of tourism and other business on the Sunshine Coast. Runway expansion to 1,200m would allow the Sechelt Airport to accept commercial flights on aircraft such as Dash 8s and Saab 340s, as well as B.C. Air Ambulance's King Airs for medevac purposes.





Presently, the majority of traffic between the Sechelt/Gibsons area and Vancouver is via BC Ferries service operating between Horseshoe Bay terminal in West Vancouver and Langdale terminal on the Sunshine Coast. In 2013, the Langdale-Horseshoe Bay ferry carried just over two million passengers.⁴ A one-way trip requires approximately three hours to travel to Vancouver International Airport (YVR) from Sechelt and costs \$65 and

⁴ Source: BC Ferries Passenger Traffic Statistics. Includes both directions of travel.



up for a round-trip ferry ticket⁵ and \$14 and up per day for parking at YVR.⁶ Arriving visitors travelling from YVR to Sechelt have no simple transportation option.

2.1 Tourism and Business Development on the Sunshine Coast

2.1.1 Tourism

British Columbia. British Columbia's five-year tourism strategy aims to increase visitor volume, revenue and employment related to tourism. Specifically, the province aims to leverage its scenic natural beauty and provide visitors with world-class experiences that highlight unique local experiences, including Aboriginal tourism and cultural experiences.

This strategy also includes removing barriers to industry growth, such as improving air access throughout the province and reducing wait times on Crown land-use decisions.⁷

B.C. has experienced 5.7% growth in international visitor arrivals since 2009 with 4.4 million visitors in 2013. The U.S., China and the U.K. are the top three growth markets. The Asia-Pacific market in general has grown significantly since that time, up 24% to 900,000 visitors in 2013. B.C. receives 58% of all Canada's overnight visitors from China, who typically visit the province for 20 nights. 9

The Canadian Tourism Commission's report, *Global Tourism Watch: China Summary Report 2012*, states that:

"Chinese travellers' product interests centre around scenic beauty, nature experiences close to cities, cultural and urban activities, and unique and local experiences. Canada performs fairly well on scenery and nature aspects, but lags behind Australia. Canada is rated poorly on cultural

⁵ Cost of one passenger fare and one vehicle fare (includes taxes), with the 3.5% fuel surcharge: (\$14.55 + \$49.05)*1.035 = \$65.83. Source: BC Ferries.

⁶ Cost of daily rate parking at YVR JetSet lot using online advance booking, including taxes. Drive-up price for JetSet parking is \$15 per day. YVR's economy lot is \$20-22 per day.

⁷ Gaining the Edge: A Five-year Strategy for Tourism in British Columbia, 2012-2016.

⁸ Source: Destination British Columbia – International Visitor Arrivals data.

⁹ Source: Tourism BC – China Market Profile 2012.



activities and unique and local experiences, identifying perceptions the destination needs to change."¹⁰

Regional Tourism. In 2010 3.4 million international overnight visitors stayed in the Vancouver, Coast and Mountains Region and 38% were from outside the United States. Passenger traffic at the Vancouver International Airport increased 2.1% in 2013 to 17.9 million enplaned deplaned passengers. Over the last five years, the airport's traffic has increased 11.0%. International traffic has increased 15.6% since 2009, and the Asia-Pacific sector in particular has jumped 22.1%.

Tourism BC observes that:

"Total annual inbound air capacity from China into the Vancouver International Airport (YVR) increased by 72% between 2009 and 2011. In 2011, airlines added over 65,000 inbound seats for Beijing-YVR and nearly 25,000 seats for Shanghai-YVR. Air capacity from Hong Kong grew 19% between 2009 and 2011 (30,000 inbound seats)."

Sunshine Coast Tourism. The Sunshine Coast has many of the attributes to which international and Chinese visitors are attracted. They are drawn to the Sunshine Coast for its beautiful scenery, access to watersports, and fishing. The region is also a cultural arts hub, hosting art displays, cultural events and encouraging its local arts and crafts community.

Sechelt and Gibsons have several tourism initiatives underway, mainly hotel and resort developments aimed at attracting foreign visitors to the region. These are described in **Figure 2-1** below.

These opportunities and others are already in the planning and investment stages. An airport capable of handling commercial flights will increase the connection speed between YVR and the Sunshine Coast, and will support these tourism initiatives by providing a direct, quick link for travellers. Visitors must currently access the Coast via ferry, other marine transportation, or small private aircraft. Local businesses would also benefit from improved air services, as they will enable these businesses to reach their customers in a more timely way.

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¹⁰ Source: Canadian Tourism Commission – Global Tourism Watch: China Summary Report 2012.

¹¹ Source: Tourism BC – China Market Profile 2012.



Figure 2-1: Sechelt Area Hotel / Resort Development

Property	Opportunity	Time Horizon	Estimated Investment	Capacity
Sechelt Golf Course Hotel	Stratified hotel development with Golf Tour Packages to attract overseas Asian tourism.	1 - 3 years	\$30 million committed	150 room hotel. Space for weddings and corporate retreats.
The George Hotel	Attract Local and European tourism. Conference Centre at the George Hotel targeted at Vancouver businesses. Day marina with larger moorage space and a fuel dock facility	1 - 3 years	\$40 million	118 rooms, 40 condos 200+ person capacity convention centre
East Porpoise Bay Hotel	Aimed at Asian adventure tourism	1 - 3 years	\$20 million	120 rooms
Vanta Pacific Hotel	Aimed at the high- end Asian tourism market	1 - 3 years	\$7 million	20 boutique rooms
Marina Development	Attract both commercial and recreational boat traffic to Sechelt.	Next 3 years	Unknown	Unknown



Shíshálh Nation Tourism Strategy. The Shíshálh Nation has a long-term vision for their tourism development, stated in their 2005 Tourism Development Study:

"The Sechelt Nation will develop its tourism industry in a manner that ensures full participation by community members, long-term cultural and environmental sustainability, and long-term economic and financial viability. The development and operations of the tourism sector will involve all generations in the community, be market-oriented in the case of business operations, and encourage Aboriginal and non-Aboriginal partnerships for operations, packaging and marketing." 12

The shishalh Nation published a Land Use Plan in 2007¹³ with a section on tourism opportunities. There are a number of First Nations entrepreneurs that own or operate businesses catering to the tourism market on the Sunshine Coast, including:

- Fishing tours
- Kayaking tours
- Cultural workshops and performances
- First Nations art and clothing design
- Nature and medicinal plant tours
- Catering

The shíshálh Nation also has an interest in preserving the natural landscape, which aids to enhance the Sunshine Coast's appeal as an eco-tourism destination. They have worked with BC Parks to increase visibility of the Nation on the landscape by highlighting aboriginal cultural use of the area.

2.2 Regional Business

A regularly scheduled, all-weather air service will provide the Sunshine Coast region with a consistent, rapid link to the Lower Mainland. Local businesses would gain a more efficient mode of travel for same-day trips to and from the Lower Mainland and beyond, as well as improved speed for small packages and cargo transportation.

Examples of businesses on the Sunshine Coast that would immediately benefit from improved air access that the runway extension would provide include:

¹² Quoted in shíshálh Nation Land Use Plan 2007. V 1.1.

¹³ shíshálh Nation Land Use Plan 2007, V 1.1.



- Target Marine Hatcheries, producer of sturgeon caviar (among the top 5 producers in the world)
- SideStix, a world-renowned custom arm crutch manufacturer
- Coast Gravity Park, a mountain biking park
- Holy Crap, producer of non-GMO, gluten free, organic, vegan cereal
- Howe Sound Pulp & Paper
- Rockwood Resort
- Painted Boat Resort
- Secret Cove Marina

In addition to this, the District of Sechelt plans a 150-acre industrial and business park to attract and accommodate aviation-related businesses. This development will allow the airport to increase its revenues and develop local businesses.



3 Proposed Solution

This section explains the future case scenario for the Sechelt Airport. It discusses the proposed infrastructure solution to make scheduled air service by wheeled aircraft to the region possible, and the potential economic benefits to the region of the service, including tax benefits.

3.1 Proposed Sechelt Airport runway expansion

The District of Sechelt contracted with a professional engineering firm to obtain a design and estimated cost for developing a runway and supporting infrastructure at Sechelt Airport that would be adequate to support scheduled air services. The estimate plans for the construction of

- A 1200 x 30m runway to support turbo-prop operations;¹⁴
- Taxiway relocation (to allow for larger aircraft);
- Apron expansion; and
- Terminal Building and Groundside Development.

The estimated cost of the proposed project is \$10.7 million, as described in **Figure 3-1** below.

Figure 3-1: Estimated Airport Project Costs

Item	Estimated Cost (\$ millions)
Runway and Access Road	\$5.3
Taxiway A Relocation	\$0.2
Apron Expansion	\$0.4
Terminal Building and Groundside Systems	\$2.2
Contingency and Engineering	\$2.6
Total	\$10.7

Source: Associated Engineering

 $^{^{14}}$ Meets the requirements of TP312 -5^{th} edition (draft) for operations by aircraft such as Dash 8-200s.



3.2 Activity Scenario

If the runway and supporting airport systems were expanded as proposed, The Sechelt Airport would be able to support activity by turbo prop aircraft up to Dash 8-200s and Saab 340s.

To develop this scenario, scheduled air carrier activity at similar communities on Vancouver Island and Southern B.C. were considered. The scenario assumes that the airport would be served by

- a combination of daily service by 19- and 30-seat aircraft;
- a total of 38 one-way flights (19 return flights) per week providing over 44,000 seats annually into the market;
- Supporting a 65% load factor, or approximately 29,000 one-way passengers per year.

It is further assumed that these services would serve YVR's South Terminal and that Canadian Air Transport Security Authority (CATSA) security screening would not be provided at Sechelt Airport. (Obtaining CATSA screening would be difficult as Sechelt Airport is not on Transport Canada's list of airports to receive security screening.) Other services to Vancouver Island, such as Nanaimo, may also develop as long as the services could be supported without security screening.

With the expansion, the airport would also be able to support service from fixed wing medevac aircraft and larger private aircraft. This would save the Province up to \$100,000 annually on average.

3.3 Potential Economic Impact of Developments

Every arrival of a passenger flight generates labour hours for individuals with jobs involved in handling passengers, their baggage, cargo and the aircraft. In addition, each flight brings tourists, who spend money on hotels, taxis, food and beverage, entertainment, etc. This analysis estimates the economic impact generated by potential services at Sechelt Airport, including:

 Total Aviation Sector Impacts: those associated with employment in the aviation sector directly related to operating and servicing the new air services (e.g., customer services, ground handling, 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.).¹⁵

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

The *total* potential annual economic impacts on the Sunshine Coast are provided in **Figure 3-2.** The table shows the potential impacts at the airport of workers serving the incremental increase in air traffic. These include annual direct impacts of 10 new person years, \$0.7 million in wages, and \$1.1 million in GDP. This analysis is based on averaging per flight economic impacts at comparable Canadian airports.

Figure 3-2: Potential Annual Airport Related Economic Impact of Air Service Scenario

Type of Impact	Employment (Person Years)	Income (\$ Millions)	GDP (\$ Millions)	Economic Output (\$ Millions)
Direct	10	0.7	1.1	3.6
Indirect	10	0.7	1.0	1.6
Induced	5	0.3	0.6	1.0
Total	25	1.7	2.8	6.2

¹⁵ Only direct impacts of visitor spending are estimated (and not indirect and induced impacts) to mitigate potential double counting.



To develop potential tourism spending impacts, the inputs shown in **Figure 3-3** were developed. Using these inputs, the incremental visitors would generate approximately \$6.8 million.

Figure 3-3: Tourism Inputs Used for Potential Impacts

	Incremental Visitors	Spending per trip	Average Total Non-Local Expenditure
U.S.	3,031	\$1,300	\$3.9 million
International	2,887	\$1,000	\$2.9 million

Source: Statistics Canada's 2010 International Travel Survey (ITS).

The potential *direct* annual economic impacts of new tourism spending on the Sunshine Coast resulting from the spending scenario are shown in **Figure 3-4**. The table shows the potential annual economic impacts in B.C. of the incremental tourists only. These include annual *direct* impacts of 85 person years, \$3.3 million in wages, and \$4.9 million in GDP. Only direct impacts have been shown to avoid possible double counting of impacts.

Figure 3-4: Potential *Direct* Annual Visitor Spending Impact

Type of Impact	Employment (Person Years)	Wages (\$ Millions)	GDP (\$ Millions)	Visitor Spending (Economic Output) (\$ Millions)
Direct	85	3.3	4.9	7.5

3.4 Catalytic Impacts

Catalytic Impacts refers to how aviation ultimately improves the productivity of an economy. To this point, this report has focused on impacts we can directly measure such as tourists arriving by aircraft and workers returning home from shift work. Ultimately, aviation enhances productivity of economies further by



- providing better access to markets;
- enhancing communications and interactions between and within business; and
- providing access to a larger labour pool.

Significant analysis on this has been completed at the national level, but is not yet available at a micro level. However, on a national level we do know that regression analysis shows that increased aviation connectivity increases the national economy by a statistically significant amount. What this means is that beyond the impacts we have measured in this analysis, scheduled air services would have a measurable, positive economic impact on the Sunshine Coast.

3.5 Tax Impacts

This part of the report documents the potential contribution to government revenues resulting from the air services scenario at the Sechelt Airport. This includes revenues received by the federal and provincial governments.

Revenue includes taxes paid by employers, employees and tourists.

- Taxes paid by employers and employees. These are taxes paid by the airport employers and employees. They include income and payroll taxes, and social insurance contributions (such as the employment insurance premiums).
- Taxes and fees paid by tourists. Visitors pay various taxes and fees. For example, these include taxes on personal expenditures at the Sechelt Airport such as taxes on airline tickets and taxes on hotel stays.

The purpose of this section is to present the tax revenue contributions resulting from the activity of the aviation scenario. The tax analysis in this report is limited to revenues attributable to direct employment only.

On-going economic activity related to the Sechelt Airport air services scenario would contribute revenue to all levels of government, estimated to be in the order of \$3.3 million per year. The federal government would be the largest recipient of tax revenue, receiving nearly \$2.4 million annually. In the scenario, the provincial government would receive a tax revenue contribution of \$0.9 million annually. Municipal impacts were not calculated.

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¹⁶ http://www.iata.org/publications/economics/Documents/890700-aviation-economic-benefits-summary-report.pdf



4 Multiple Accounts Evaluation

4.1 Multiple Accounts Evaluation Methodology

Multiple Accounts Evaluation (MAE) and Social Cost Benefit Analysis are tools that can be used by government to review the utility of major policy or program decisions.

Social Cost Benefit Analysis differs from financial analysis by including impacts on the environment, communities, users of services and others. Social cost benefit analysis converts travel time savings and other benefits (and costs) into dollar values, which are then added to the financial analysis to result in a "net social benefit" computation to guide policy makers. Social Cost Benefit analysis, however, requires that all impacts be converted into dollars and cents and then aggregated into a single net benefit number, and many impacts (e.g., impacts on First Nations) cannot be 'monetized'.

For this reason, Social Cost Benefit Analysis often is replaced with MAE analysis. This technique lists, analyses and quantifies (where possible) all impacts, but without the need to convert every impact into dollars and cents. MAE is increasingly preferred by governments as a tool to guide decision makers as it provides more detailed information on the various impacts of the investment or policy.

4.2 Multiple Accounts Evaluation Matrix

The following matrix provides a Multiple Account Evaluation of the Status Quo – no upgrades to the Sechelt Airport, and also the potential impacts to the community if Sechelt Airport is upgraded. The following accounts are addressed for each alternative:

- Capital Investment;
- Ongoing Economic Impact;
- Tourism Impacts;
- Government Revenues;
- Catalytic Impacts and Regional Development;
- Environmental Impact;
- First Nations;
- Social Impacts;
- Transportation Impacts; and
- Political Impact.



Figure 4-1: Sechelt Airport Development MAE Matrix

Account	Scenario 1:	Scenario 2:
	Status Quo	Sechelt Airport Development Scenario
Capital Investments	\$0	Up to \$10.7 million in one-time capital investment. This estimate is for expanding the main runway, apron and air terminal building development, and apron expansion.
		The development of air services assumes \$10.7 million in incremental capital investment at Sechelt Airport. This capital investment would generate additional one-time direct impacts of up to:
		■ 59 FTEs;
		\$3.6 million in wages;
		\$4.7 million in GDP; and
		 \$10.7 million in economic output.
		This capital expenditure may be supported by federal and provincial public-private partnership financing programs.
Economic Impact	None	The development of ongoing air services at Sechelt Airport of over 28,865 annual passengers would result in economic impacts in the region. This is primarily because this economic activity would create jobs. Jobs resulting from this would be primarily at the airport and ground transportation jobs supporting the airport. The activity generated in the



Account	Scenario 1:	Scenario 2:
	Status Quo	Sechelt Airport Development Scenario
		air service scenario would generate direct annual activity including
		■ 10 FTEs;
		■ \$0.7 million in wages;
		■ \$1.1 million in GDP; and
		 \$3.6 million in economic output.
		Total economic outputs would be greater.
Tourism	None. The area is unique as a tourism region which lacks wheeled air services.	The air services scenario assumes that increased ease of access to the region combined with developing tourism infrastructure would result in increased U.S. and international visitors. It is estimated that an additional 6,000 visitors per year would arrive. The total incremental spending of these visitors would be approximately \$6.8 million annually. (This does not include tourists arriving by other modes of transport.) This tourism spending would result in direct annual economic impacts of 85 FTEs;
		• \$3.3 million in wages;
		\$4.9 million in GDP; and
		 \$7.5 million in economic output.
		Total economic outputs would be



Account	Scenario 1:	Scenario 2:
	Status Quo	Sechelt Airport Development Scenario
		greater. Scheduled wheeled air services on the Sunshine Coast will give a boost for visitors travelling long distances. It will make the region more attractive to U.S. and international visitors by decreasing total travel time. Air services at Sechelt would support B.C.'s tourism strategy by helping to creating a "world class visitor experience" and "removing barriers to growth." 17
Government Revenues	Not applicable.	Air services to Sechelt Airport would generate significant revenue for the federal and provincial governments. This would include taxes paid by employers, employees and visitors. Estimated annual incremental tax increases by level of government Federal: \$2.4 million; and Provincial: \$0.9 million.
Catalytic Impacts and Regional Development	None	Air services would support economic development in the region in general by • providing better access to markets;

 $^{^{\}rm 17}$ BC Jobs, Tourism and Innovation, "Gaining the Edge: A Five-year Strategy for Tourism in British Columbia, 2012 - 2016."



Account	Scenario 1:	Scenario 2:
	Status Quo	Sechelt Airport Development Scenario
		 enhancing communications and interactions between and within businesses; and providing access to a larger labour pool.
Environmental Impact	No	No significant environmental impact from the proposed infrastructure development of air service is envisaged. All development would be redevelopment of existing infrastructure.
First Nations	None	This project aligns with Sechelt Nation objectives.
Social Impact	None	Scheduled wheeled air services would have a significant impact on the quality of life of people in the region by Education and Training. Easier for educators and students of all
		levels and complexity to travel to and from the region.
		 Greying population. Gives an alternative transport mode to seniors, particularly those with mobility issues.
		 Disabled. Provides a transport option for the physically disabled to and from the region.
		 Leisure and recreation. Increases options for residents and visitors



Account	Scenario 1:	Scenario 2:
	Status Quo	Sechelt Airport Development Scenario
		wanting to come of the area. This includes supporting community events like sports tournaments.
		 Attraction and retention. Scheduled air transportation options will make the region more attractive to residents, businesses, and people thinking of moving there.
		 Health and medical services. The air service would also make it easier for medical professionals and related people to travel to Edson and the region and deliver services.
Transportation Impact	No scheduled transportation option for region.	Provides a new transportation option for passengers and time-sensitive cargo.
		This would include daily flights representing at least 44,500 seats per year in the Sechelt catchment region.
Political Impact	Municipal and provincial leaders are organized to support air service from Sechelt.	Achieving this service would support municipal and provincial objectives. Development of the air services would support federal objectives of increasing exports (tourism) and growing the Canadian economy and tax base.



Appendix A: Glossary of Terms

Air Traveller Security Charge (ATSC): A fee collected by the Federal Government from air travellers to help fund security improvements at Canadian airports. The fee varies by region of travel and is charged to the passenger per enplanement.

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.

Economic 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.

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.

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.

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 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.

Airport Improvement Fee (AIF): A fee collected by air airport authority from passengers to help with funding capital improvements at the airport. In some regions of Canada, this is also referred to as the Passenger Facility Charge (PFC).

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.

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.



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