

# Business Case Briefing:

## Parallel Taxiway and Apron Widening at Abbotsford International Airport

Prepared for

Abbotsford International Airport Authority

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## Executive Summary

Abbotsford International Airport (YXX) is a vital element of the infrastructure critical to the economic development of the Fraser Valley and B.C. It supports one of the fastest growing regions in the country.

YXX is among the fastest growing airports in Canada. Passenger numbers exceeded 500,000 in 2007 making it a major regional airport as defined by the strategic system criteria for transportation infrastructure of the western provinces.<sup>1</sup> Demand by carriers and other operators is growing so fast that it is now exceeding the facility's capacity. In order to be able to continue to support its fast growing region, the airport requires immediate capital investment. Without such investment, operators will experience increasing delays, higher costs, and greenhouse gas emissions will needlessly increase.

The potential pay-off for Canada and the Province from supporting the development of these initiatives is significant. The direct economic impacts of the airport by 2025 if development is not fettered by capacity constraints include

- Up to 1,500 person years in incremental jobs;
- Over \$400 million in GDP; and
- Roughly \$900 million in economic output.

<sup>1</sup> Western Canada Transportation Infrastructure Strategy for an Economic Network, March 2005

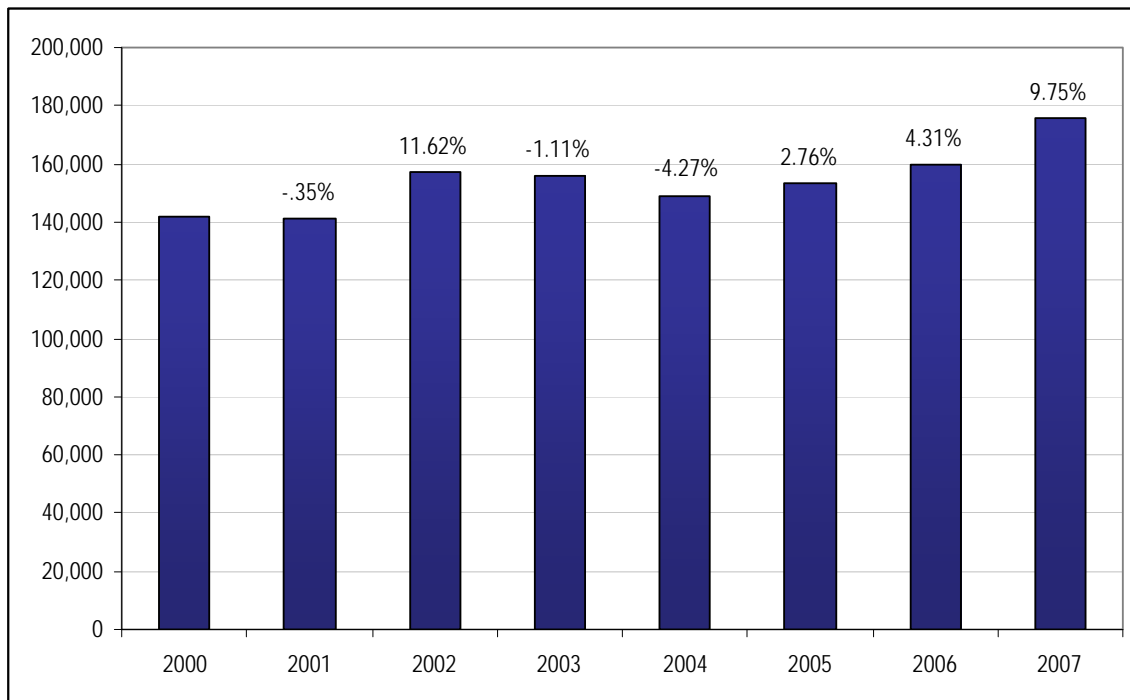
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## 1.0 Introduction

The Abbotsford International Airport (YXX) is located in the Fraser Valley, 70 km from Vancouver. The airport plays a complementary role to the Vancouver International Airport, serving as an alternate for a number of carriers and offering direct and more convenient air service options to the travelling public in the Fraser Valley to a range of destinations. In recent years, the City of Abbotsford and surrounding region has experienced strong economic growth and this has been reflected by steady growth in passengers and aircraft movements at the airport. Since 2000, the airport has achieved an annual average growth rate of 3.25%, exceeding its projected annual growth rate of 2.5%, as illustrated in Figure 1-1.

Figure 1-1: Aircraft Movements at Abbotsford International Airport, 2000-2007



Source: Statistics Canada

### 1.1 The Problem: Increasing Congestion Due to Rapid Growth

The increase in aviation activity at YXX has placed the airside system under pressure. Capacity limits are being approached on the runway and for aircraft parking areas.

Runway 07-25 is the main runway used by air carrier aircraft. Since 2000, total aircraft movements at YXX have increased from 141,500 to over 175,000 in 2007. During the same period, operations by large air carriers have doubled from 3,880 to 7,800. The majority of air carrier operations take place on Runway 07 due to wind, terrain and instrument approach requirements. Accordingly, the increase in operations has highlighted the limited capacity of the current airside system configuration which does not provide a parallel taxiway for Runway 07-25. As a result, air carrier aircraft landing on Runway 07 are required to make a 180° turn on the runway and “back-track” on the runway to access the passenger terminal.

An analysis conducted in August 2001, found that the Abbotsford Airport met or exceeded the planning criteria for provision of parallel taxiways. This is true whether using the criteria established by Transport Canada, the U.S. Federal Aviation Administration and the International Civil Aviation Organization.<sup>2</sup> Since that time, operational activity has increased, runway capacity is under pressure and delays are growing.

The increased use of the Abbotsford International Airport for scheduled commercial and charter passenger services is also resulting in a need for additional aircraft parking areas. The area serving the terminal complex is quite restricted and little space exists on other areas of the apron due to the geometric design and layout that was put in place in the early development of the airport. Consequently, there is little available parking on the main apron area.

## **1.2 The Solution: Parallel Taxiway and Expanded Apron**

The provision of a parallel taxiway would confer significant operational benefits. Current runway occupancy times are approximately double those that would pertain if a parallel taxiway was in place. The reduction of occupancy time would add substantial capacity by doubling the arrival rate for jet aircraft on Runway 07, and doubling the departure rate on Runway 25.

A parallel taxiway would provide important safety benefits by simplifying operations, reducing air traffic control workload, and minimizing the risk of vehicle-aircraft conflicts.

The increased efficiency of ground operations would reduce taxi time resulting in reduced fuel consumption and also reducing greenhouse gas emissions.

In summary, the provision of a parallel taxiway for Runway 07-25 would enable the full potential capacity of the existing runway to be achieved, while enhancing safety, enhancing operational efficiency and reducing greenhouse gases. The development of a parallel taxiway was recommended in the Abbotsford International Airport Master Plan completed in 2006.

Additional aircraft parking area can be readily provided by widening the main apron area. This would also enhance aircraft movement on the airport by providing appropriate taxi-lanes for the larger size aircraft now frequently using the airport.

<sup>2</sup> *Parallel Taxiway Assessment Runway 07-25*, Abbotsford Airport, Inter VISTAS Consulting Inc., August, 2001

## 2.0 Background

### 2.1 Airport Overview

Abbotsford International Airport is owned by the City of Abbotsford and operated by the Abbotsford International Airport Authority. In 1997 the Airport was transferred to the City as part of the change in the Federal Government's National Airports Policy (NAP). The Abbotsford International Airport Authority was formed with a mandate to "manage and operate the Airport in compliance with the Abbotsford International Airport Authority By-law and to fund the operation of the Airport entirely from the Airport's own revenue."<sup>3</sup>



The airport has two paved runways (07/25, 9,600 x 200 feet and 19/01, 5,328 x 200 feet) and a turf runway (19A/01A, 1,500 x 100 feet). Recent upgrades include a \$4.3 million runway extension, the renovation of the international terminal and the addition of a new loading bridge.

Abbotsford Airport has regularly scheduled domestic jet service from WestJet and BC West Air, and Victoria service is provided by Airspeed Aviation. It has also been served at various times by Air Canada and Air Canada Jazz. WestJet also offers seasonal charter service to Las Vegas and Mexico, and other charter operations have served YXX. In 2007, the airport handled 508,564 enplaned/deplaned passengers and 175,405 total civilian movements, comprised of 55,023 commercial, 14,490 private/ government, and 105,149 local movements.

In addition to services offered in-terminal for passengers, there are over 20 tenants located at the airport including: aerospace/aerotech, aircraft maintenance/repair, aircraft fuel, aerospace/aviation training and aerial fire control services. Additionally, TRADEX, an exhibition space of 120,000 square feet, is immediately adjacent to the airport.

In 2007, YXX generated \$4,809,180 in revenue through rental income, aeronautical fees, concession fees, public parking fees and other income.

### 2.2 Community Overview

The Abbotsford International Airport is located on the outskirts of the City of Abbotsford, approximately one hour east of Vancouver, in British Columbia's Lower Mainland. Abbotsford is the fifth largest city in British Columbia and is home to 124,000 residents. The area's diversified economy is mainly comprised of agricultural activity, manufacturing, knowledge-based and value-added service industries. As shown in

<sup>3</sup> 2004 Annual Report, Abbotsford International Airport

**Figure 2-1**, sales and service, transportation-related occupations and financial services are the highest employing sectors in the area.

**Figure 2-1: Employment Breakdown by Industry Sector, 2006**

Group	City of Abbotsford	% of Occupations
Sales and Service	19,145	23.0%
Trades, transport and equipment operators and related	16,950	20.4%
Business, finance and administrative	12,185	14.6%
Management	7,325	8.8%
Primary Industry	7,255	8.7%
Social science, education, gov't services, and religion	6,275	7.5%
Processing, manufacturing and utilities	5,395	6.5%
Health	4,105	4.9%
Natural and applied sciences and related	3,050	3.7%
Arts, culture, recreation and sport	1,530	1.8%
<b>Total</b>	<b>83,215</b>	<b>100.0%</b>

Source: 2006 Census, Statistics Canada

## 2.3 Future Outlook

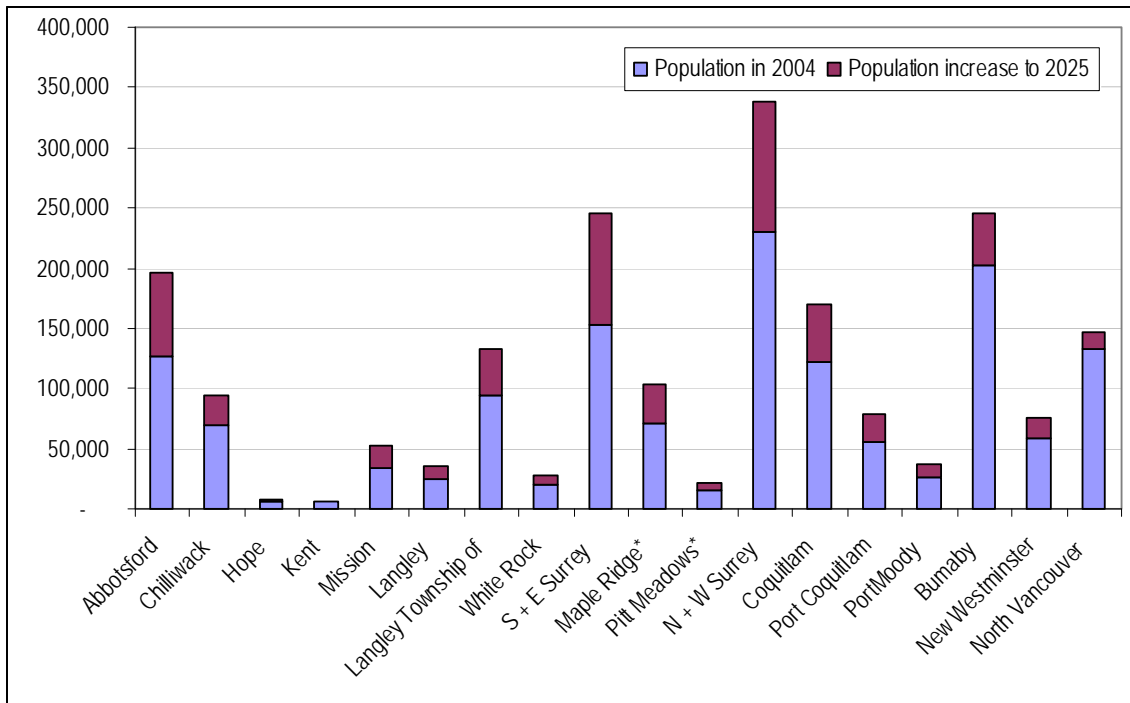
The medium-term economic outlook for the Abbotsford region suggests that it will continue to enjoy strong economic growth. Real gross domestic product (GDP) in British Columbia is forecast to grow at a compound annual rate of 3.1% from 2006 to 2011. Economic growth will be fuelled by increased inter-provincial migration, stronger global demand for B.C.'s export products, and a healthy construction sector buoyed by ongoing large-scale infrastructure investment.<sup>4</sup>

Specifically for Abbotsford and the surrounding area, economic growth will be fuelled by two key factors:

1. **Population Growth** – The City of Abbotsford is one of the fastest growing communities in the Lower Mainland. The City's population increased by 14% in the last year, fuelling demand for products and services and increasing the region's labour pool. Continued economic growth is forecast as both the primary and secondary catchment areas are projected to represent just over two million persons by 2025. **Figure 2-2** illustrates population growth in the airport's primary and secondary catchment area.
2. **Diversified economy** - Abbotsford's economic growth is fuelled by its diversified economy and broad tourism visitor base. The population growth mentioned above is directly related to the growth of the regional population.

<sup>4</sup> Provincial Outlook 2007: Long Term Economic Forecast, Conference Board of Canada

Figure 2-2: Population Growth in YXX Market Area, 2004 - 2025



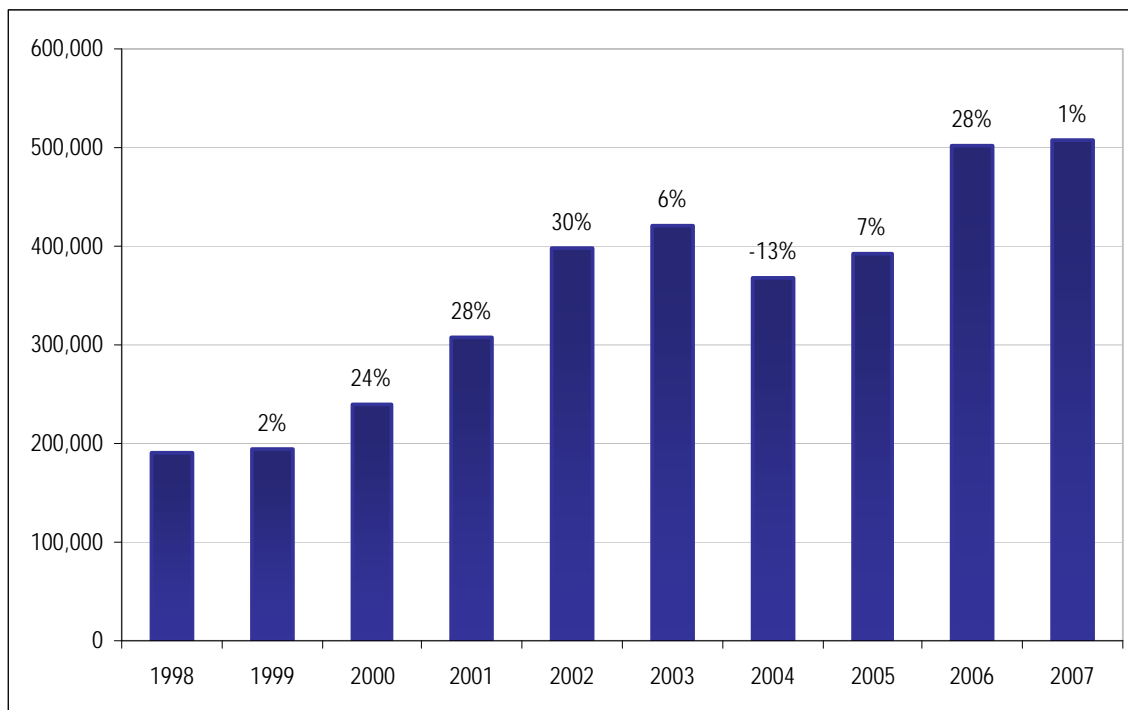
Source: BC Stats, 2005 & City of Abbotsford Development Services

## 3.0 Airport Growth

### 3.1 Passenger Traffic

The introduction of WestJet services in 1997 had a significant impact on passenger growth at YXX. In 1998, after a full year of WestJet's operations, the airport recorded 190,000 enplaned/deplaned passengers, a 7,500% increase in traffic over the previous year. As shown in **Figure 3-1**, the airport has sustained consistent overall passenger growth since 1998, experiencing an annual average growth of 14% between 1999 and 2006. Unlike the majority of Canadian airports, passenger demand at YXX was not affected by the events of September 11<sup>th</sup> and the SARS health crisis in 2001 and 2003, respectively. Air Canada's cessation of service caused a temporary decline in 2004 which was quickly reversed with the introduction of daily Toronto flights by WestJet in 2005. By 2006, the airport had recovered to 2003 air traffic levels.

Figure 3-1: Enplaned and Deplaned Passenger Growth at YXX, 1998 – 2007



Source: Abbotsford International Airport

### 3.2 Passenger Traffic Forecasts

Air passenger forecasts are based on estimated travel demand. An airport's travel demand is driven by population growth within the catchment area and the airport's attractiveness to the travelling public. The airport currently serves a market area of 1.5 million residents and could potentially serve a market area in excess of 2.1 million by 2025.

The airport authority completed a Master Plan in 2006, which included traffic projections. **Figure 3-2** depicts forecast travel demand for Vancouver and the Fraser Valley from the Master Plan.<sup>5</sup> Projected growth is estimated to be over 3% a year between 2005 through 2025.

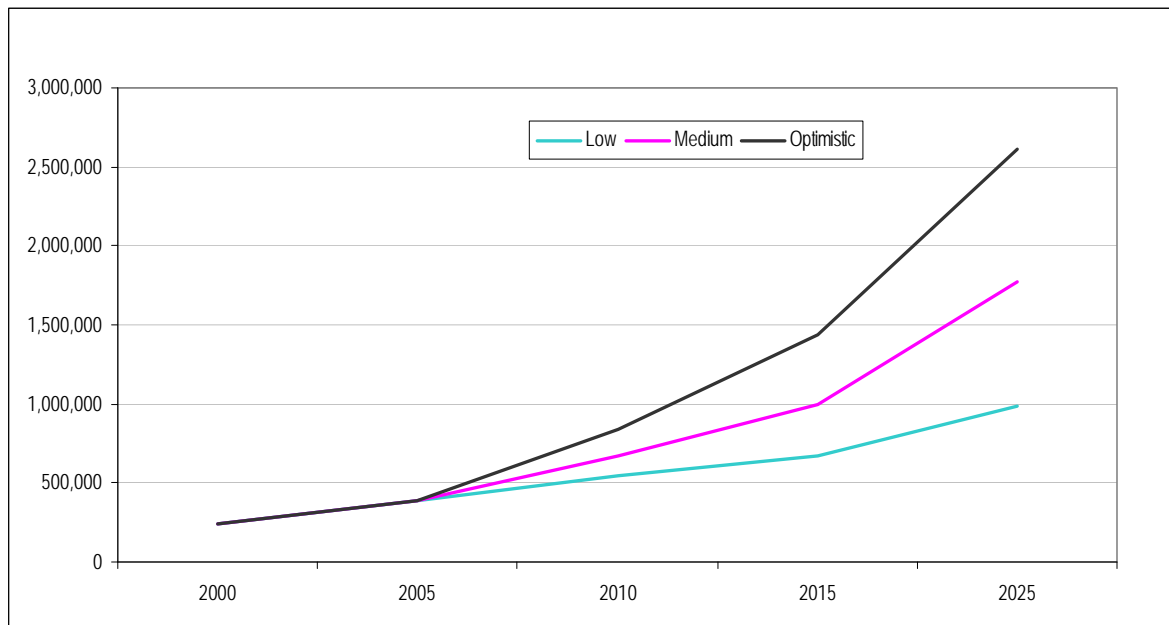
**Figure 3-2: Forecast Regional Enplaned-Deplaned Passenger Demand**

	Domestic	Transborder	International	TOTAL
2010	10,582,496	5,209,476	5,110,134	20,901,750
2015	11,834,374	6,300,712	6,330,466	24,465,801
2025	14,385,159	8,334,101	9,053,617	31,772,564
<b>Average annual growth rates</b>				
2005-10	3.0%	4.5%	5.0%	3.8%
2005-2015	2.6%	4.2%	4.7%	3.5%
2005-2025	2.35	3.5%	4.2%	3.1%

Source: Abbotsford International Airport Master Plan, 2006

The regional demand forecast was then used to develop passenger forecasts for YXX. The passenger growth scenarios developed for the Master Plan are depicted in **Figure 3-3**. The scenarios provide a passenger traffic range of between one million and 2.5 million passengers per year.

**Figure 3-3: Forecast Total Enplaned / Deplaned Passengers YXX**



Source: Abbotsford International Airport Master Plan, 2006

<sup>5</sup> These forecasts were prepared by Sypher:Mueller Inc.

The three scenarios in the Master Plan are defined as follows:

- Low Scenario – Traffic grows at an annual average growth rate of 4.7% to 2025, consistent with the forecast population growth rate.
- Medium Scenario – Traffic grows at an annual average growth rate of 7.8% to 2025, more in line with the airport's average annual growth in recent years (6%). In this scenario, growth is consistent with the forecast population growth rate and partial allowance has been made for an expected increase in attractiveness stimulated by an increase in the number of available flights.
- Optimistic Scenario – Traffic grows at an annual average growth rate of 10% to 2025. A successful marketing campaign has increased the number of available flights and allowed the airport to increase its capture rate from 3% to 5% of regional passenger traffic.

The Medium Scenario uses a growth rate consistent with recent growth trends. Under this scenario, passenger demand will double in less than 10 years and will more than triple by 2025. The airport's current infrastructure is insufficient to cope with the level of activity that this demand will generate.

**The Medium Scenario growth rate will result in passenger demand doubling in 10 years, and tripling by 2025. Current infrastructure will not support this level of demand.**

### 3.3 Aircraft Activity Forecasts

In line with passenger forecasts, the Master Plan forecasts that aircraft movements are expected to increase at YXX. It is anticipated that growth in scheduled air service will be tempered by changes in aircraft size and load factors as WestJet makes increasing use of the B737-800, and services to the U.S. and international destinations increase. The Master Plan projects that the average number of seats per aircraft at YXX will increase by 1% per year over the period 2005 – 2015 and by 0.5% during 2015 to 2025.

Scheduled aircraft movements are forecast to increase by 1% or 0.5% less than the forecast growth in enplaned-deplaned passengers. Increases in regional services will offset the use of larger aircraft to some degree. Smaller air carrier traffic is forecast to grow in line with B.C.'s economic growth. Slow growth is forecast for private aircraft traffic and growth is expected to be modest for local movements. Forecast aircraft movements are presented in **Figure 3-4**.

**Figure 3-4: Current and Forecast Itinerant Aircraft Movements, 2007 – 2025**

	Air Carriers	Other	Total
2007	36,645	33,611	70,256
2010	46,073	27,751	73,824
2015	56,721	27,480	84,201
2020	66,823	27,384	94,207
2025	79,250	27,302	106,552

Source: Abbotsford International Airport Master Plan, 2006

## 4.0 Proposed Parallel Taxiway and Apron Expansion

### 4.1 Objectives

The objective of the proposed capital project is to enable the Abbotsford Airport Authority to continue to serve its role in serving the rapidly growing region; continue to serve as YVR's alternate airport, contribute to economic growth in the Province by supporting increased air transportation services and to reduce greenhouse gas emissions. To do this, YXX must be able to accommodate the larger aircraft serving the airport, in line with its Master Plan. These objectives can be achieved by the construction of a parallel taxiway and apron expansion which will:

- Increase runway capacity;
- Reduce the airport's environmental footprint per movement by reduced greenhouse gas emissions (reduced taxi times and delays);
- Improve operating efficiencies for the airlines utilising the airport by providing a more direct link to the main apron (thus reducing fuel-burn for operations at YXX); and
- Expand aircraft parking areas to increase capacity by adopting Code E planning standards in operating areas
- Provide appropriate capacity for YXX to undertake its role as an alternate to Vancouver International Airport.

### 4.2 The Need for Capital Improvement

Runway 07-25 is the primary runway used by larger aircraft. Since 2000, total aircraft movements (including local movements) at Abbotsford have increased from 141,500 to over 175,000 in 2007. During the same period, operations by large air carrier have doubled from 3,880 to 7,800. The majority of air carrier operations take place on Runway 07 due to wind, terrain and instrument approach requirements. Accordingly, the increase in operations has highlighted the limited capacity of the current airside system configuration which does not provide a parallel taxiway for Runway 07-25. As a result, air carrier aircraft landing on Runway 07 are required to make a 180° turn on the runway and "back-track" on the runway to access the passenger terminal.

The provision of a parallel taxiway would significantly reduce "runway occupancy" time resulting in important capacity benefits for both arrivals and departures. On Runway 07, the arrival rate for jet aircraft would be doubled. Departure rates on Runway 25 would undergo a similar major capacity increase.

**The construction of the parallel taxiway would double the arrival and departure rate of aircraft on the existing runway.**

The parallel taxiway will provide safety benefits by simplifying operations, reducing air traffic control workload, and minimizing the risk of vehicle-aircraft conflicts.

The increased capacity and consequent reduction in delays will in turn reduce fuel consumption and emissions per movement.

In summary, the provision of a parallel taxiway for Runway 07-25 would enable the full potential capacity of the runway to be achieved, while enhancing safety and operational efficiency. The development of a parallel taxiway was recommended in the Abbotsford International Airport Master Plan completed in

Although the Abbotsford Airport has been a designated YVR alternate for many years, only relatively small areas of the airport are zoned with the appropriate clearances and standards to accommodate large aircraft. ( Code E) The Code E category includes aircraft with wing spans of 52 to 65 metres and the Abbotsford Airport is already being served by aircraft in this category - the Airbus A330. As manufacturers reach for greater fuel efficiency with increased wing spans, more Code E aircraft will be in use and both the twin-engined Boeing-787 and Airbus A 350 are Code E category. The 787 will shortly be joining the fleet of Air Canada and other carriers serving YVR.

The 2006 Airport Master Plan recommended establishing Code E as the airside planning standard. For this reason, YXX is also proposing to expand the major apron areas and related taxiways stretching from the Air Terminal Building north to Taxiway A. These improvements will allow improved flow of larger aircraft and provide additional parking for large aircraft in the event of aircraft diversion from other sites such as Vancouver to Abbotsford.

### 4.3 Scope of Proposed Development

The project includes two proposed airfield developments on existing YXX property. One development area includes the expansion of Apron 1 to the east to maximize aircraft parking capabilities along the existing apron pavement and to allow use of this area by larger Code E aircraft. The second development includes a parallel taxiway with connections to Apron 1, Runway 01-19, Taxiway D and Runway 07-25, including two rapid exit taxiways. The layout concept for the expanded apron and parallel taxiway is shown in **Figure 4-1**.

**Figure 4-1: Proposed Apron and Parallel Taxiway Projects**

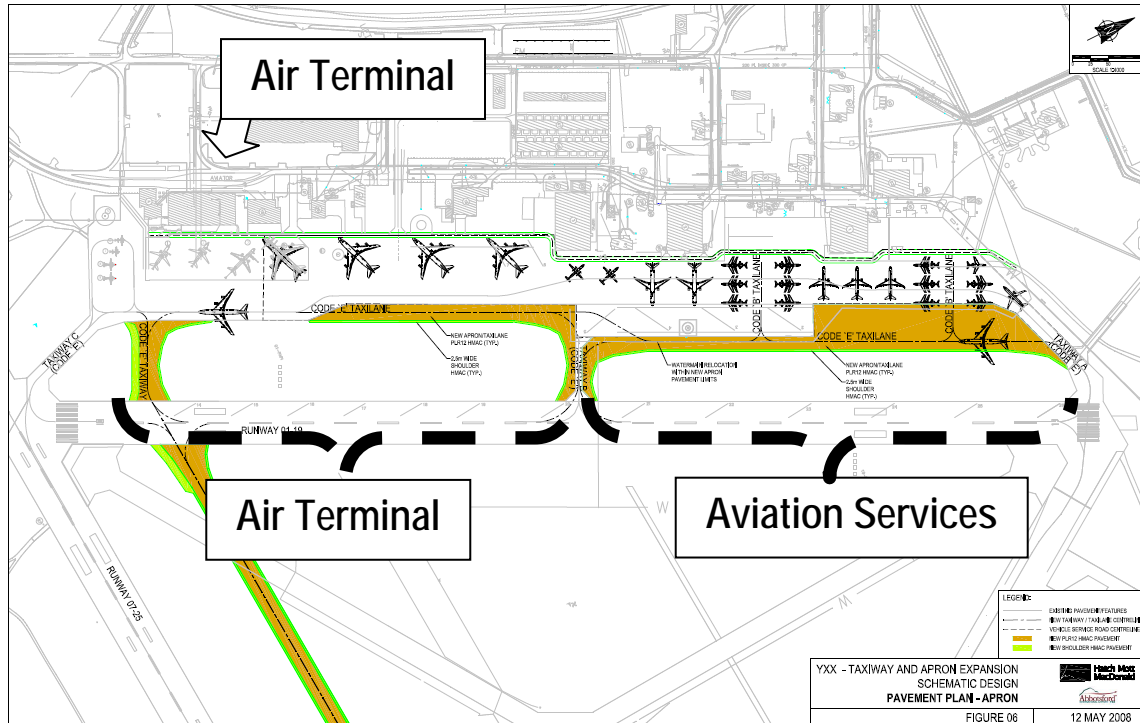


Source: Hatch Mott MacDonald

A closer view of the proposed apron expansion is shown in **Figure 4-2**. In this diagram, the left edge is basically south, and the right edge is roughly north. The southern half of the proposed apron expansion would support aircraft circulation in the Air Terminal area. The expansion would allow large jet aircraft to

safely taxi past large jet aircraft parked in the Air Terminal Building Area. The apron development in the northern half would support the aviation services area of the apron, and would provide additional space for parking large aircraft in the event of significant diversions of aircraft from Vancouver International Airport. This expansion would support the potential development of new aviation services and/or cargo.

Figure 4-2: Proposed Apron Expansion



Source: Hatch Mott MacDonald

## 4.4 Project Costs

The current estimated cost of construction for the taxiway construction and apron expansion is estimated at approximately \$30 million and includes site works, removals, excavation, pavement and drainage. A breakdown of the project costs are provided in Figure 4-3.

These are capital costs only and do not include engineering (design and field supervision), project and construction management, and other potential relevant costs.

The cost estimate is for a single project although it would be feasible to phase the development of both the taxiway and parking aprons.

Figure 4-3: Cost Estimate Summary

<b>Cost Estimate Summary</b>	<b>Cost</b>
<b>YXX Apron Expansion</b>	
Site Works	\$1,236,132
Removals	\$272,400
Excavation	\$381,740
Pavement	\$5,315,108
Drainage & Water Supply	\$898,150
<b>Total YXX Apron Expansion</b>	<b>\$8,103,530</b>
<b>YXX Parallel Taxiway</b>	
Site Works	\$3,178,097
Removals	\$179,188
Excavation	\$401,906
Pavement	\$12,921,725
Drainage	\$4,153,275
<b>Total YXX Parallel Taxiway</b>	<b>\$20,834,192</b>
<b>Electrical</b>	
Ductbanks and Manholes	\$305,500
Removals and Relocations	\$155,000
Airfield Lighting Cabling	\$582,000
Inset Lighting (If Required)	\$36,000
Elevated Taxiway/Apron Lighting	\$422,000
Runway Guard Lighting	\$39,000
Guidance Signs	\$125,000
New Prefabricated FEC	\$730,000
New Airfield Lighting Control and Monitoring System	\$38,000
Testing and Commissioning	\$10,000
<b>Total Electrical</b>	<b>\$2,442,500</b>

Source: Hatch Mott MacDonald

## 5.0 Benefits to the Province

### 5.1 Connecting to Provincial Objectives

The proposed projects and the underlying demand driving them would support federal, provincial and local government objectives. Examples of this include:

- Helping to double provincial tourism by 2015. The province and the tourism industry have recognized that expanding infrastructure is critical to meeting provincial tourism goals. This project would increase capacity at one of B.C.'s largest airports and help to increase capacity.
- Facilitating the 2010 Winter Games and creating opportunities to generate related sustainable investment for the Province. The increased capacity on Runway 07 and additional parking at the site would both ease aviation capacity concerns for the province ahead of the 2010 Games.
- Supporting international trade. YXX has the potential to develop as an international destination in its own right as the Lower Mainland grows. The increased capacity proposed would help the airport accept larger aircraft, typical of intercontinental flights. The investment is focused on allowing international and U.S. visitors to visit and invest in B.C.
- Reducing greenhouse gas emissions. The proposed project will reduce greenhouse gas emissions per movement by reducing delays and taxi times.

### 5.2 Environmental Advantages

The proposed initiatives would reduce potential green house gas (GHG) emissions and reduce the potential carbon footprint of YXX, relative to the level of emissions that would occur without the investment in the parallel taxiway. This initiative will achieve these goals by reducing aircraft taxiing and delays.

The reductions in fuel burn and emissions are significant. The increased efficiency of the parallel taxiway in moving commercial aircraft off the runway achieves CO<sub>2</sub> emission reductions of an estimated 98.6 million kilograms over 20 years.<sup>6</sup> Total runway delay is estimated to grow from roughly 60,000 minutes per year in 2008 to just over 350,000 minutes per year in 2028. Reduced fuel burn is roughly 700,000 kilograms in 2008, increasing to 3.3 million in 2028.

<sup>6</sup> This is computed as follows: it was assumed that YXX commercial movements will be roughly 70% of 737 type operations and 30% turboprop. These consume roughly 15.1 and 5.3 kilograms of jet fuel per minute of delay (computed as a combination of idle and taxi delay). Jet fuel is .8075 kilograms per litre, and each litre of jet fuel generates 2.54 kilograms of CO<sub>2</sub> when burned. Traffic delay was computed in the first year as 3 minutes delay per aircraft, 8 aircraft per hour for a total of 192 delays minutes per day. Traffic grows at the medium scenario of 7.8% per annum at YXX, and delay increases 30% beyond year 10.

## 5.3 Potential Growth Scenarios

There are a number of scenarios which might lead to the development of additional passengers, cargo, or other aviation activity at YXX, and help it achieve its best case development scenario. This section reviews two examples of potential growth scenarios to help explain what growth might look like.

### 5.3.1 Cargo Development

Air cargo traffic has been growing rapidly since the Second World War. In Canada, this has included the development of increasingly significant cargo operations at airports across the country. For example, FedEx recently announced the development of regional hub operations at Kelowna International Airport. Given its proximity to centres of population in the Lower Mainland, the rapid rate of population growth in the Fraser Valley, and the Lower Mainland's role as a trade centre, YXX may see the development of increased cargo operations at Abbotsford including operations by one or more carriers as a regional or transborder facility .

Hamilton International Airport is an example of a regional airport which has grown rapidly as a cargo centre on the periphery of a major urban region in the past two decades. Cargo operations generate relatively high-paying jobs. The types of jobs that might be created if additional cargo services were developed include pilots, mechanics, aviation support staff, cargo handlers, truckers and delivery jobs, government employment, fuelers, airport authority positions, and others. A regional cargo facility could support up to 200 related jobs.

### 5.3.2 International, Transborder and Charter Flights

Regional airports are also increasingly attracting international, transborder and charter flights. Examples of this include Mexico charters from Comox and transborder services between Seattle and Prince George. Hamilton is again an example, where an increasing range of international charter flights are offered, despite its proximity to the major gateway airport at Toronto International Airport. Abbotsford has already developed some services of this type, and the medium-term potential for additional services may be significant. This might take the form of intercontinental charter flights, scheduled services to some major U.S. destinations, or an increased range of transborder/Mexico/domestic charter flights. All of these activities would generate additional revenue and jobs for the community.

The types of jobs that might be created if additional long haul passenger services were developed include pilots, customer service agents, baggage handlers, government employment, aircraft crew, mechanics, aviation support staff, fuelers, airport authority positions, and others.

## 5.4 Potential Economic Impact

Economic impact is used to measure the spending and employment associated with a specific project or economic sector. Economic impact can be measured in various ways. For the purposes of this business case, economic impact has been estimated in terms of person years (full-time equivalents or FTEs), employment generated and tax contributions. This measure is not a "net" measure that weighs benefits against costs, but rather, provides an estimate of the impact of the forecasted growth in activity at the airport.

### 5.4.1 Employment Impact

InterVISTAS has not completed a detailed economic impact report for Abbotsford International Airport, but it has completed detailed studies at comparable airports across Canada. These studies allow InterVISTAS to examine ratios between airport activity and economic impacts at other airports and create reasonable scenarios for growth at YXX. Applying ratios from comparable Canadian airports, potential incremental jobs related to increased airport activity if the optimistic case is achieved may be as shown in Figure 5-1.<sup>7</sup> The table shows that jobs at the airport may more than double by 2025.

Figure 5-1: Potential Annual Jobs Generated by YXX for Select Years

	Forecast Passengers	Direct Jobs	Direct Person Years
2010	676,000	1,305	1,289
2015	1,000,000	1,930	1,907
2025	1,772,000	3,420	3,378

Based on the potential jobs created by projected growth at Abbotsford, other potential economic impacts can also be derived. These are shown in Figure 5-2. Numbers are in 2008 dollars. The analysis shows that if Abbotsford achieves its projected passenger growth, the airport will generate thousands of incremental jobs of high value to the B.C. economy, producing significant GDP and economic output impacts. Between 2010 and 2025, GDP and economic output are projected to double. By 2025, economic output may approach \$1 billion, and GDP at the airport may approach \$500 million per year.

Figure 5-2: Projected Annual Total Economic Impacts of Airport Growth Forecasts

	Forecast Passengers	GDP	Output
2010	676,000	\$ 154,900,118	\$ 329,659,224
2015	1,000,000	\$ 229,142,186	\$ 487,661,575
2025	1,772,000	\$ 406,039,953	\$ 864,136,310

<sup>7</sup> The economic impact analysis shown here is based upon more detailed economic impact analysis that InterVISTAS has completed for comparable Canadian airports. The total direct jobs have been related to jobs per passengers at these actual sites.

## 5.4.2 Tax Revenue

Based on the job and economic impact estimates generated, and tax impacts analysis completed by Inter *VISTAS* at other comparable Canadian airports, the potential tax impacts of this incremental activity can be estimated (based on the current tax structure). Order of magnitude calculations are provided for federal and provincial tax revenues in **Figure 5-3**.

**Figure 5-3: Estimated Tax Contributions Generated by Projected Passenger Activity**

	Forecast Passengers	Federal Tax Projections	Provincial Tax Projections
2010	676,000	\$20,851,939	\$5,560,517
2015	1,000,000	\$30,846,063	\$8,225,617
2025	1,772,000	\$54,659,224	\$14,575,793

## 5.6 Summary

By comparing projected activity at YXX with economic impact studies completed by Inter *VISTAS* for other airports, potential best case incremental economic impacts were developed. The analyses suggests that unfettered by capacity constraints, Abbotsford International Airport could generate significant job and economic impacts in the future. These economic projections, assume that airport capacity is not reduced or hindered in any way. If capacity is not expanded and delay is allowed to grow, then the full amount of these economic impacts would be unlikely to be realised.

## 6.0 Conclusion

Abbotsford International Airport (YXX) is a vital element of the infrastructure critical to the economic development of the Fraser Valley and B.C. It supports one of the fastest growing regions in the country.

YXX is among the fastest growing airports in Canada. Passenger numbers exceeded 500,000 in 2007 making it a major regional airport as defined by the strategic system criteria for transportation infrastructure of the western provinces.<sup>8</sup> Demand by carriers and other operators is growing so fast that it is now exceeding the facility's capacity. In order to be able to continue to support its fast growing region, the airport requires immediate capital investment. Without such investment, operators will experience increasing delays, higher costs, and greenhouse gas emissions will needlessly increase.

The potential pay-off for Canada and the Province from supporting the development of these initiatives is significant. The direct economic impacts of the airport by 2025 if development is not fettered by capacity constraints include

- Up to 1,500 person years in incremental jobs;
- Over \$400 million in GDP; and
- Roughly \$900 million in economic output.

<sup>8</sup> Western Canada Transportation Infrastructure Strategy for an Economic Network, March 2005