

2004 Economic Impact of the Ottawa International Airport

L'impact économique de l'Aéroport international d'Ottawa en l'an 2004



**Prepared for the Ottawa International Airport Authority by:
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EXECUTIVE SUMMARY

Since the last economic impact study was completed in 2000 there have been many significant world events which have impacted the aviation industry. Despite these challenges, and because of prudent risk-mitigation and management focus, the Ottawa Macdonald-Cartier International Airport Authority (OMCIAA) continues to meet its mandate to manage, operate and develop airport facilities and lands in

The airport makes a significant contribution in terms of the taxes it pays directly to various levels of government and the taxes generated as a result of the associated business activity.

In 2003 OMCIAA paid \$3.4M in taxes to the municipality, as well as remitting \$11.3M in rent to the federal government.

Direct personal income and consumption taxes paid by people employed at firms associated with the airport is estimated at \$37.4M in 2003.

support of the economic growth of the National Capital Region.

Airports provide significant economic and transportation benefits and have become an integral part of local, regional and national economies. They are a key catalyst for economic growth through employment and have a profound influence on the quality of life.

This Study for Ottawa International Airport found:

- YOW accounts for approximately 4,207 direct jobs in the local economy annually or 3,914 (Full Time Equivalent) person years;
- At \$37,500, the mean annual wage for these employees is approximately 20% above the Canadian average: the total direct wage bill for the airport is \$147 million;
- Since 2000, the airport community's FTE employment has grown from approximately 3,455 to 3,914 direct jobs (+13%);
- Considering multiplier effects, YOW activity creates an additional 4,615 indirect and induced jobs for a total impact of 8,529 jobs in the community at large;
- The Direct Economic Output of this employment base is \$541 million annually or almost \$1.5 million per day;

Category	2000	2004	%Change
Direct Impacts			
FTE	3,455	3,914	13%
Wages	\$129M	\$147M	14%
Total Impacts			
FTE	7,857	8,529	9%
Wages	\$299M	\$283M	(6%)
Economic Output	\$958M	\$1,061M	11%

- The Total Economic Output attributable to the airport (including indirect and induced) is \$1,060 million annually or just under \$3 million per day, an 11% increase over 2000;
- Air carriers remain the single largest employer at the airport;
- Only 2% of jobs at the airport are seasonal and full time employment accounts for over 75% of jobs;
- Every additional million passengers served by the airport would generate approximately 1,200 jobs.

There are distinct advantages for communities or regions that are within the reaches of efficient air transportation. By facilitating the activity of industrial and service sectors – connecting them to global economic activity - airports play a key role in a community's ability to attract and retain business.

The 2004 Economic Impact Study found that fourteen major scheduled carriers operate from the Ottawa International Airport and provide non-stop flights to over 30 different cities in the UK and North America. A total of ninety businesses operate at the Airport. Many more located in the Ottawa/Gatineau Region provide services to the airport community.

Global air travel is not generally forecast to recover to the pre-9/11 levels until 2005 or 2006. However, the Study found that Ottawa is showing signs of being ahead of that curve. Even with the negative impacts of SARS, the war in Iraq and the challenge created by the August 2003 electricity grid shut-down, the total number of enplaned/deplaned (E/D) passengers grew by 1.4% in 2003 over the 2002 levels.

That growth has continued. The first quarter of 2004 has seen increases in domestic, transborder and international travel over comparable 2003 figures. In fact, passenger traffic during February 2004 set a new record for that month, and January and March 2004 approached the all-time highs recorded in the same months in 2001.

Year	Total Movements	Level I-III Carriers
2000	181,399	83,841
2001	177,491	81,127
2002	165,704	77,028
2003	156,270	77,437

2003's total of 156,270 aircraft movements, including commercial and general aviation, itinerant and local traffic, represented a 5.7% decline from the 2002 total of 165,704¹. This decline is consistent with the mean decline for the 42 airports in the Stats Canada 2003 Annual Report. However,

¹ Source: Stats Canada Report No. TP141.

commercial air carrier movements at Ottawa showed a 2% growth in 2003 over 2002 and early indications in 2004 are that this trend will be maintained.

For the 2003 Financial Year, airport revenues exceeded expenses by \$12.4 million as compared to \$11.4 million for 2002. The Airport Improvement Fee (AIF) was a significant factor in those results.

In the short-term, the immediate prospect for 2004 is uncertain with the continuing difficulties experienced by Air Canada still to be resolved. What is apparent is that there is strong, long-term organic and sustainable growth for air service from the National Capital Region. If Air Canada should cease operations there will be immediate impacts. These will be mitigated by other carriers – some of which are already beefing up their service in the “golden triangle” area - and new start-ups which will serve the unmet demand over the medium-term.

	Employment (FTE)	Wages (\$M)	Business Revenue (\$M)
Direct	3,914	\$146.80	\$541.40
Indirect & Induced	4,615	\$135.79	\$519.20
TOTAL	8,529	\$282.59	\$1,060.60
2000 results	7,857	\$299.00	\$958.00

Overall, with more than 3,900 full-time jobs associated with the operation of the airport complex and over half-a-billion dollars in direct output, the Ottawa Airport is a powerful economic generator for the Region. The Airport is the gateway to the National Capital Region and plays a major role in supporting business, tourism and the Region's overall quality of life.

I. INTRODUCTION

A. Background and Context

Sypher was retained by the Ottawa Macdonald-Cartier International Airport Authority (OMCIAA) to assess the year 2004 economic impact of the airport on the Ottawa-Gatineau Region.

The purpose of measuring the economic impact of the Ottawa International Airport is to heighten business and community awareness of the airport and its contribution to the economic well being of the region. It also identifies economic linkages between the aviation industry and other sectors of the economy.

The last economic study conducted for the Airport Authority was completed in Year 2000. This 2004 update – using data from 2003 - is of particular importance in the context of the airport's recent capital improvements, particularly the new Air Terminal Building (ATB), and the significant changes in the aviation industry over the past four years.

B. Study Approach

The primary data collection tool was a survey/questionnaire. Surveys were prepared for each of the three key impact groups: airport tenants/businesses; local hotels; and local travel agencies. The hotel and travel agency surveys were translated to encourage participation by stakeholders located in Gatineau. A generic cover letter in both English and French, was prepared on behalf of the OMCIAA outlining the purpose and importance of the survey and participation of the airport community.

A total of three hundred and twenty-six surveys were distributed, a significant increase over the 155 businesses surveyed for the Year 2000 report. Survey forms were mailed out to the following groups:

- One hundred and forty five (145) surveys went to airport tenants and businesses which contribute directly to airport activity. A final response rate of 78% was achieved. This compared with a response rate of 74% in the 2000 report. Data for non-respondents was inferred by a variety of methods. Appendices A through C contain the details.
- Sixty-eight (68) surveys were mailed out to hotels within the National Capital Region. This compares to 10 for the 2000 report. This 2004 survey included 13 surveys in French. A response rate of 21% was reached subsequent to follow-up phone calls.

- Sypher also mailed out surveys to one hundred and thirteen (113) local travel agencies in the National Capital Region, a new group not previously surveyed for the EIS Report. This included 11 surveys in French. A response rate of 12% was reached subsequent to follow-up phone calls.

To gauge the understanding of the importance of the airport to the economy and local businesses, telephone interviews were held with local tourism authorities, business groups and Chambers of Commerce.

Sypher also reviewed and incorporated information from recent OMCIAA studies such as the 2003 Strategic Plan Update², and the 2004 Air Service Demand Study³.

C. Aviation Industry Issues

Since the last economic impact study in year 2000, the global aviation industry has suffered many blows. On the revenue side, passenger reluctance to travel as a result of global events such as 9/11, SARS and the war on Iraq have impacted the financial bottom line of most air carriers. The growing influence of the low cost carriers continues to put pressure on airfares. In the US, eight carriers entered bankruptcy or bankruptcy protection in 2003, as did Air Canada.

Carrier financial performance was also impacted by a general increase in costs, some of which they could control, e.g. labour and other external factors such as security, fuel, taxes and air navigational charges over which they had little or no control.

Financial difficulties faced by carriers have, in turn, negatively impacted the financial performance of airports as airlines have reneged on their financial commitments to airports, and reductions in numbers of passengers and aircraft movements has negatively impacted both aeronautical and concessions revenues.

For many airports the rent paid to the federal government continues to represent its largest uncontrollable expenditure. Reflecting in part concern about the financial viability of the aviation industry, Transport Canada announced a plan in July 2003 to allow airports to defer at least 10% of the rent they pay to the federal government, for up to 2 years. However, this provides little if any relief as it has to be carried

² Ottawa Macdonald-Cartier International Airport, Strategic Plan Update, September 2003, Sypher:Mueller International Inc.

³ Ottawa Macdonald-Cartier International Airport, Air Service Demand Study, January 2004, Sypher:Mueller International Inc.

as a liability and paid back to the federal government starting in January 2006.

Economic growth drives traffic demand which in turn drives capacity and profitability. Although the Canadian economy is on a steady growth cycle, supported in part by a stronger than anticipated recovery in the US economy, the effects of the global shocks can still be felt and global air travel is not generally expected to recover to the pre-9/11 levels until 2005 or 2006. Ottawa is showing signs of being ahead of that curve as discussed later. The short-haul market has been the hardest hit because the proportionately higher burden of security costs and passenger processing time in comparison to flight time.

Air Canada (including Jazz and Zip) remains the dominant carrier in Canada, however the challenge from low-cost carriers such as WestJet, CanJet and JetsGo is here to stay.

II. THE OTTAWA INTERNATIONAL AIRPORT (OIA)

A. OIA Overview

Nestled in the Nation's Capital, the Ottawa Macdonald-Cartier International Airport (OMCIAA) is located 9 miles south of Ottawa's city centre. The airport (ICAO code CYOW) is one of twenty six nationally significant airports considered essential to Canada's air transportation system. It is open twenty-four hours a day, and is operated by the Ottawa MacDonal-Cartier International Airport Authority (OMCIAA). OMCIAA operates the Airport without government subsidies under a 60-year lease transfer agreement with Transport Canada.

OMCIAA's mandate is to manage, operate and develop airport facilities and lands in support of the economic growth of the National Capital Region.

The Airport offers direct access to over 120 million people within 2 hours flying time, and 40 million people are within 13 hours trucking time. Intermodally, OIA is 4 hours trucking time to Toronto, and 2 hours to Montreal⁴



⁴ www.azworldairports.com/airports/p1290yow.htm

Fourteen major carriers operate from the Ottawa International Airport and provide non-stop flights to Calgary, Fredericton, Halifax, Hamilton, Iqaluit, Kitchener-Waterloo, London (ON), Montreal (Dorval), North Bay, Quebec City, Saskatoon, Sudbury, Thunder Bay, Toronto (Pearson, City Centre, Buttonville), Vancouver, Winnipeg, Albany, Atlanta, Boston, Chicago, Detroit, New York (LaGuardia & Newark), Philadelphia, Pittsburgh, Washington (Dulles), and London (Heathrow).⁵

A total of ninety businesses operate at the Airport. Exhibits II-1 and II-2 depict the distribution of these businesses by activity category.

The following describes the activity categories used throughout the analysis:

- **Air Carrier** includes Major Canadian Scheduled, Major Canadian Charter, Major Foreign, and Commuter/Regional carriers. Firms providing services on behalf of carriers in the form of ticketing/reservations, ground handling, de-icing, and ramp services are also included.
- **Airport Operations** includes the Airport Authority, the Air Navigation Service provider, Security firms, Other Government Agencies/Departments, Construction firms, and Property Management firms.
- **Air Cargo / Mail / Courier**
- **Freight Forwarders / Customs Brokers**
- **Ground Transportation** includes taxi, limousine, public transportation, and public parking operators at the airport.
- **Non-Commercial Aviation** includes Small Air Charters, Corporate Aviation, Private Aviation, Flight Schools, Flying Clubs, and government aviation operations.
- **Airport Commercial Services** includes in-flight catering, retail and concessions operators, car rental operator, and tour operators.
- **Aircraft and Aviation Services** includes Fixed Base Operators and Fuelling Firms, Aircraft Maintenance / Overhaul firms, and Aircraft Cleaning/Sales/Leasing/Parts firms.

⁵ Sourced from EIS survey and OIA website

Exhibit II-1. Number of Firms at the Airport by Activity Category

AIR CARGO / COURIER / MAIL	7
AIR CARRIER	17
AIRCRAFT / AVIATION SERVICES	7
AIRPORT COMMERCIAL SERVICES	20
AIRPORT OPERATIONS	18
FREIGHT FORWARDER / CUSTOMS BROKER	4
NON-COMMERCIAL AVIATION	8
GROUND TRANSPORTATION	3
OTHER	6
Grand Total	90

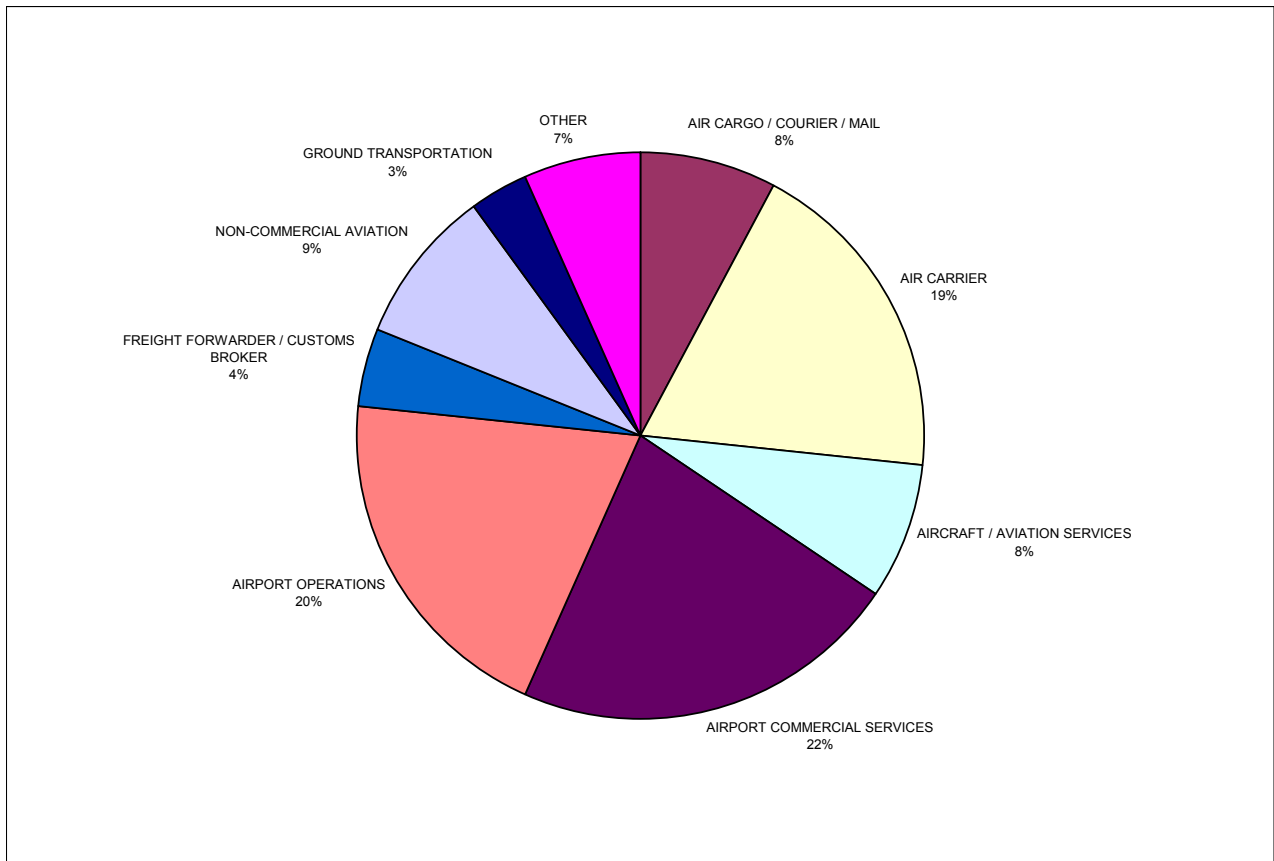


Exhibit II-2. Distribution of Firms at the Airport, by Activity Category

B. Airport Facilities

The new three-level passenger terminal building is linked to the second level of the old terminal by way of a passenger bridge. Canadian customs and the US pre-clearance facilities have been expanded to accommodate growth in trans-border and international air traffic. Fifteen new gates, updated baggage handling facilities, expanded airside aprons, a new aircraft de-icing facility, climate-controlled access to the passenger terminal from an above-ground parking garage and a realigned airport parkway approach formed part of the recent airport expansion.

The new air terminal complex has an annual passenger capacity of 5.0 million, 21 gates, four baggage claim belts, ample parking (1700 spaces in parkade, 800 within a short walking distance from the ATB), car rental, taxis, limousines, hotel shuttle, public transit, 17 retail outlets (including duty free and gift shops), 11 food and beverage outlets, two currency exchange bureaus, four ATM machines, bag storage, an information kiosk, lost and found, internet access, observation area, spiritual centre, boardrooms and an executive suite.

The Airport is equipped with three runways: 07-25 (8,000'); 14-32 (10,000'); and 04-22 (3,300' unlit).

C. Land Use and Commercial Development

The Airport's Master Plan⁶ developed in 1998, is currently being implemented. Exhibit II-3 outlines the ultimate land use.

Commercial retail and land development are the cornerstones of the airport's ability to generate new revenue streams, and increased development means more comprehensive offering for the traveling public. Land development was brisk in 2003 with several of the car rental companies operating at the airport building their own grooming facilities. Cara and HDS, both master concessionaires, expanded their food & beverage and retail packages with the opening of the new terminal. Other retailers were also welcomed into the new terminal.

⁶ Ottawa Macdonald-Cartier International Airport Master Plan, June 1998, prepared by Maxgroup Associates with Landrum & Brown

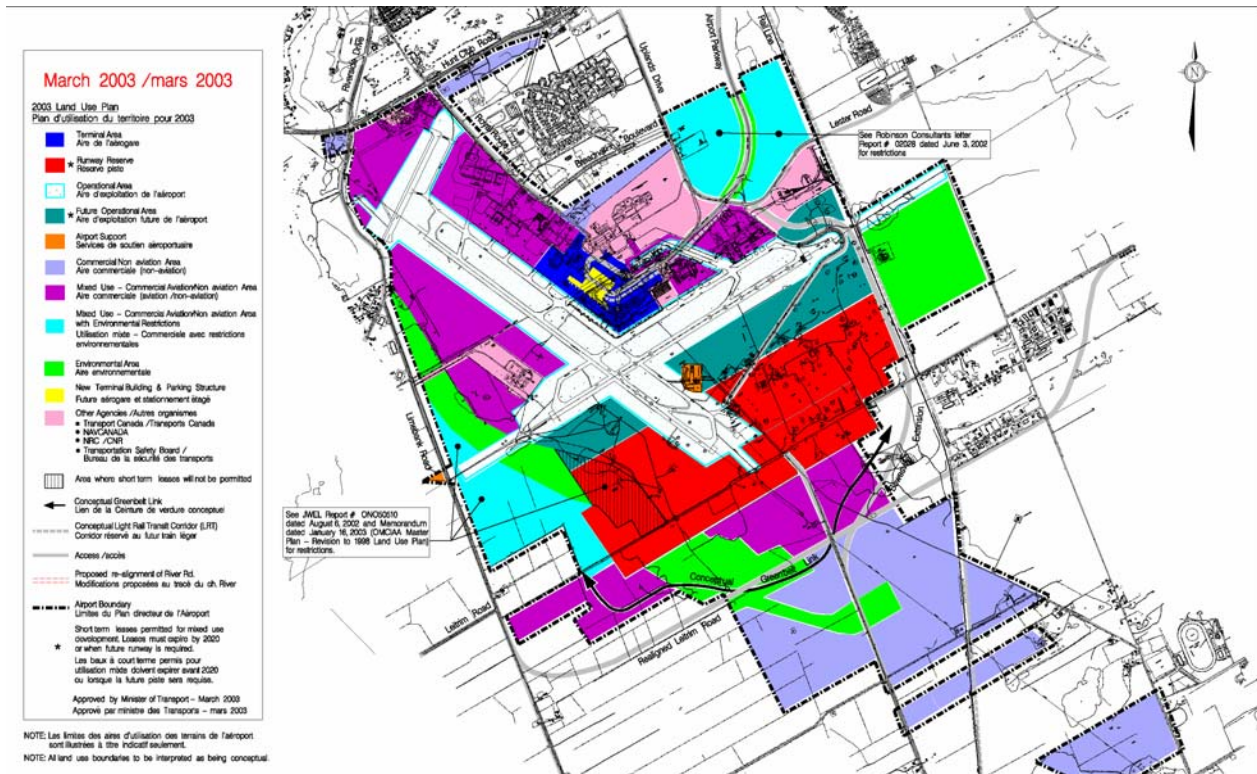


Exhibit II-3. OIA Land Use Plan

D. 2003 Year in Review

Ottawa's new state-of-the-art passenger terminal building opened for business on October 12, 2003 – 6 months ahead of schedule and on-budget. The new terminal doubles the previous terminal's capacity and eases tensions for travellers by improving public access within the terminal and eliminating congestion at customs, at passenger gates and bridges, and on aprons and taxiways.

Even with the negative impacts of SARS, the war in Iraq, and the August 2003 electricity grid shut-down, at 3,262,597 emplaned/deplaned (E/D) passengers in 2003, passenger volumes were 1.4% higher than in 2002. During 2003, only April, May, and August saw passenger volumes below those of the comparable months in 2002, largely for the reasons mentioned above.

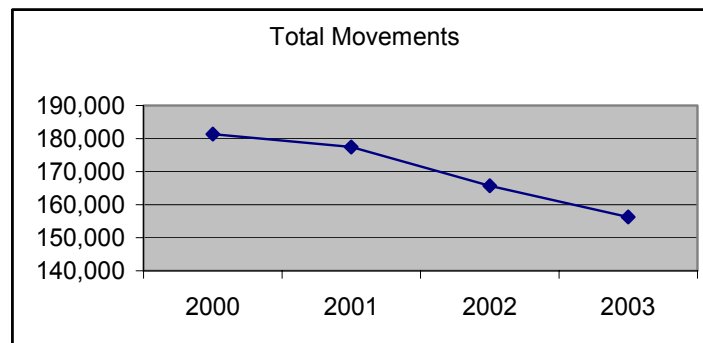
In terms of passengers, the first quarter of 2004 has seen increases in all sectors over 2003, i.e., in domestic, transborder and international travel. Indeed February 2004 activity set a new record for that month, and January and March 2004 approached the all-time highs recorded in the same months in 2001.

A total of 156,270 aircraft movements, including commercial and general aviation, itinerant and local traffic, in 2003 represented a

decline of 5.7% from the 2002 total of 165,704⁷. This decline is consistent with the mean decline for the 42 airports in the Stats Canada 2003 Annual Report. Commercial air carrier movements, however, showed a 2% growth in 2003 over 2002. Early indications in 2004 are that the number of movements has stabilized.

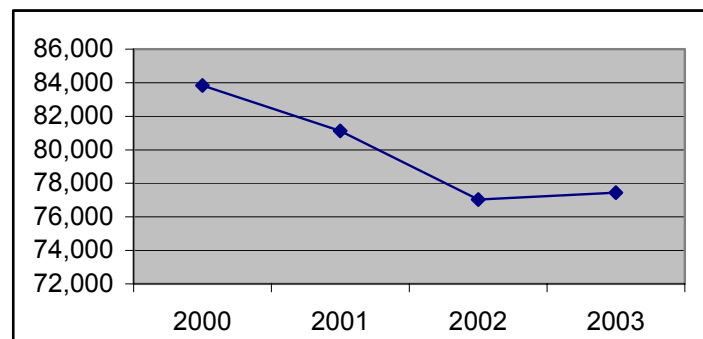
For the year ended December 31, 2003, airport revenues exceeded expenses by \$12.4 million as compared to \$11.4 million for 2002. The Airport Improvement Fee (AIF) was a significant factor in the financial results.

In the short-term, the immediate prospect for 2004 is uncertain with the continuing difficulties experienced by Air Canada still to be resolved. What we do see is strong, long-term organic and sustainable growth for air service from the National Capital Region. If Air Canada should cease operations there will be immediate impacts. These will be mitigated by other operators and start-up airlines which will serve the unmet demand over the medium-term.



Source: Statistics Canada – Aircraft Movement Statistics

Exhibit II-4. Total YOW Air Traffic Movements 2000-2003



Source: Statistics Canada – Aircraft Movement Statistics

Exhibit II-5. Level I-III Air Carrier Movements 2000-2003

⁷ Source: Stats Canada Report No. TP141.

III. REGIONAL ECONOMY

A. Regional Economic Overview

The National Capital Region stretches out on both sides of the Ottawa River to include parts of two Canadian provinces – Quebec (to the north) and Ontario (to the south). The Region encompasses 4,715 km² of river valley, mountains, wetland and fields. It contains two major cities – Ottawa and Gatineau – as well as numerous small towns, and has a population of approximately 1.1 million, making it the fourth-largest urban area in Canada. The local population is traditionally one of the most bilingual in Canada with nearly half a million people speaking both French and English. Ottawa was ranked sixth in the world for quality of life by the Corporate Resources Group, a Swiss-based management firm.

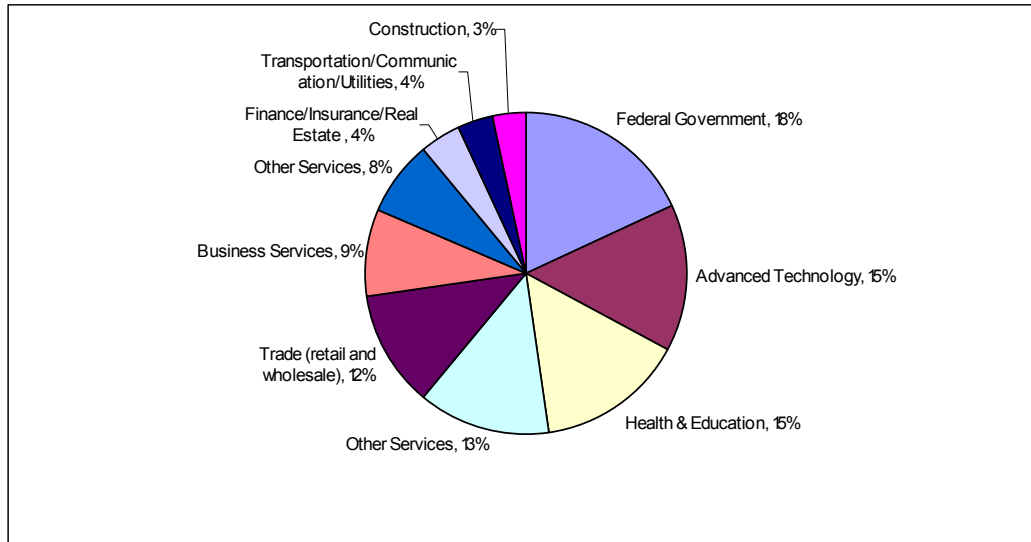
Located less than an hour's drive from the American border, Ottawa-Gatineau is home to dozens of federal government organizations, a thriving international technology and business centre, and is considered a world class tourism and convention destination. The National Capital Region is also rich in culture and heritage with its many national institutions, parklands, waterways, historic architecture, and a large number of foreign embassies. It is also a recognized centre for both academics and professional training. With the highest-educated workforce in Canada, Ottawa has more engineers, scientists and PhDs per capita than any other city in the country. According to Statistics Canada, families in Ottawa had the highest median incomes of any Canadian city in 2001 (taken from the last federal Census in 2000).

Statistics Canada's last Labour Force Survey (May 2001) reports that the total labour force for the Ottawa-Gatineau metro area is 616,500 – the second largest labour pool in Ontario. The region's employment by industry sectors is shown in Exhibit III-1.

At 6.8%, the 2003 unemployment rate in Ottawa-Gatineau is 0.8% lower than the national rate of 7.6%.

The local business community in general experienced a turbulent 2003 – particularly in the retail and tourism sectors who also suffered the financial effects of a massive hydro blackout, SARS, mad cow disease, and the ongoing uncertainty surrounding world affairs. Ottawa residents and businesses were also faced with the uncertainties inherent in not one, but three changes of government (provincial, municipal and federal). The tech sector continued to languish, interspersed with signs of better things to come, pencils were being

sharpened at city hall, and the strong Canadian dollar drove interest rates and exports down.



Source: City of Ottawa Employment Survey 2001

Exhibit III-1. 2001 Employment by Sector

Despite the fiscal challenges, the Conference Board of Canada characterizes 2003 as the year that the local economy roared back, with the best showing since the height of the tech boom in 2000. At 3.8%, the economy grew at a far better rate than the mediocre gain of 0.3% recorded in 2001 or the 2.3% seen in 2002. The board credited the strong performance in 2003 to "feverish" construction activity, the expansion of the federal public service, and a stabilizing manufacturing sector, despite the continued stream of layoffs from the local telecom sector. 2003 saw construction activity surge by 16.7% thanks to a booming housing market and the need for office space by the growing federal government.

The Conference Board forecasts that the Ottawa-Gatineau economy will enjoy solid growth in 2004 ranking it 10th among the top 25 urban centres. GDP is forecasted to grow by 3%, and although construction activity is expected to ease off, the local economy should remain buoyed by manufacturing and a more modest rate of growth in the public service. Business owners in the NCR are cautiously optimistic.

B. High-Technology

With ninety percent (90%) of Canada's industrial telecommunications research and development conducted in Ottawa, the city is one of the

world's top 5 sites for R&D and is often referred to as "Canada's Advanced Technology Capital".

More than 1,500 advanced technology companies employ more than 65,000 people in the Region. These high technology firms account for \$20 billion worth of economic activity. Ottawa now leads the country in economic and per-capita spending on advanced research and technology.

Over 90% of everything that is produced in the local tech sector, whether it's a product or a service, is primarily exported to the U.S., Europe and Asia. Major Ottawa high-tech employers such as Nortel and Cognos conduct approximately 50% of their business with the US. The biggest impact on the high technology sector therefore is the value of the Canadian dollar. The percent change and the speed of that change has recently caught many Ottawa based firms off guard – these firms have had to increase their sales targets 18-19% just to offset the currency exchange.

2003 saw the failure of such companies as Ceyba and Innovance, the move offshore of JDS Uniphase's manufacturing activity, and dismal levels of venture capital activity throughout the year. Nortel stocks however regained lost ground and Tundra Semiconductor Corp., became a new local hero. As well, the emergence of smart little startups and the ongoing success of big-name survivors such as Cognos Inc. improved confidence in the tech sector rebound.⁸

The US economy is expected to grow 4.6% in 2004. Most tech sectors can expect a "general recovery" on the back of the American market, with the possible exception of the long-haul networking sector which continues to struggle. Gail Logan, president of the Greater Ottawa Chamber of Commerce says that the technology sector will get the biggest boost from the US recovery. Michael Darch of OCRI expects to see a gradual return to 2000 levels of activity.

C. Tourism

The Capital's tourism and convention industry generates more than \$2 billion in economic activity and welcomes over 7 million visitors per year. Tourism in the Capital is contingent on the convention business, and the number of attractions available.

Canada's capital region offers a unique combination of culture, history and natural outdoor attractions: 30 museums, 60 galleries and theatres, night clubs, fine dining, world-class shopping, heritage sites,

⁸ Ottawa Business Journal, December 29, 2003.

stunning architecture, festivals, cultural activities, natural wonders and sports.

Key attractions include Parliament Hill, Casino du Lac Leamy, Rideau Canal, the Gatineau Park, Winterlude, Canada Day, the Tulip Festival, Ottawa Blues Fest, and the International Jazz Festivals.

Statistics produced by Ottawa Tourism indicate that 87% of the Region's visitors originate from within Canada, while 7% are from the United States, and 6% from other international destinations. Historically, 37% of the visitors come to the Region for pleasure purposes while 35% visit friends and relatives, 15% travel for business, and 13% for other reasons. Approximately 60% of the total person-visits to the Region include an overnight stay. Visitor spending equates to approximately \$180/visitor.

Tourism in the Region has declined because of broader medical and political problems such as SARS I, SARS II, West Nile and the war in Iraq. These factors and the rising Canadian dollar caused a decline in tourism in 2003 to an estimated 7.23 million visits (down 0.1% from 2002). An example of this decline was seen in the number of visitors to Parliament Hill – Ottawa's signature attraction - which recorded a decline of 70,000 less visitors (mostly Americans). Ottawa's tourism sector also spent much of 2003 in limbo, waiting for a new president at the Ottawa Tourism and Convention Authority to champion initiatives such as the controversial hotel levy, co-operation between regional tourism stakeholders, the uncertainties and unanswered questions regarding the Congress Centre expansion and the creation of a new tourism web portal.

The 4-5% increase that is forecast for 2004 is based on a modest increase from 2003 levels. Jacques Burrelle, the newly appointed President and CEO of the Ottawa Tourism and Convention Authority does not expect a huge flow of tourism back into Ottawa immediately and indicates that it will take several years for the region's tourism industry to bounce back. The Region is currently focusing on tourism from the Quebec City – Windsor corridor. From an airport perspective this focus is less likely to generate a significant increase in in-bound air traffic.

As a first step in stabilizing funding for tourism initiatives and marketing the Ottawa Region, the Ottawa-Gatineau Hotel Association announced in April 2004 that it had reached a voluntary agreement among forty of its members to implement a 3% Destination Marketing Fee (DMF) on the room portion of a guest's bill. This initiative is projected to raise \$5 – 7 Million for marketing purposes.

IV. CIVIL AVIATION AND ITS IMPACT ON THE ECONOMY

A. The Airport Community

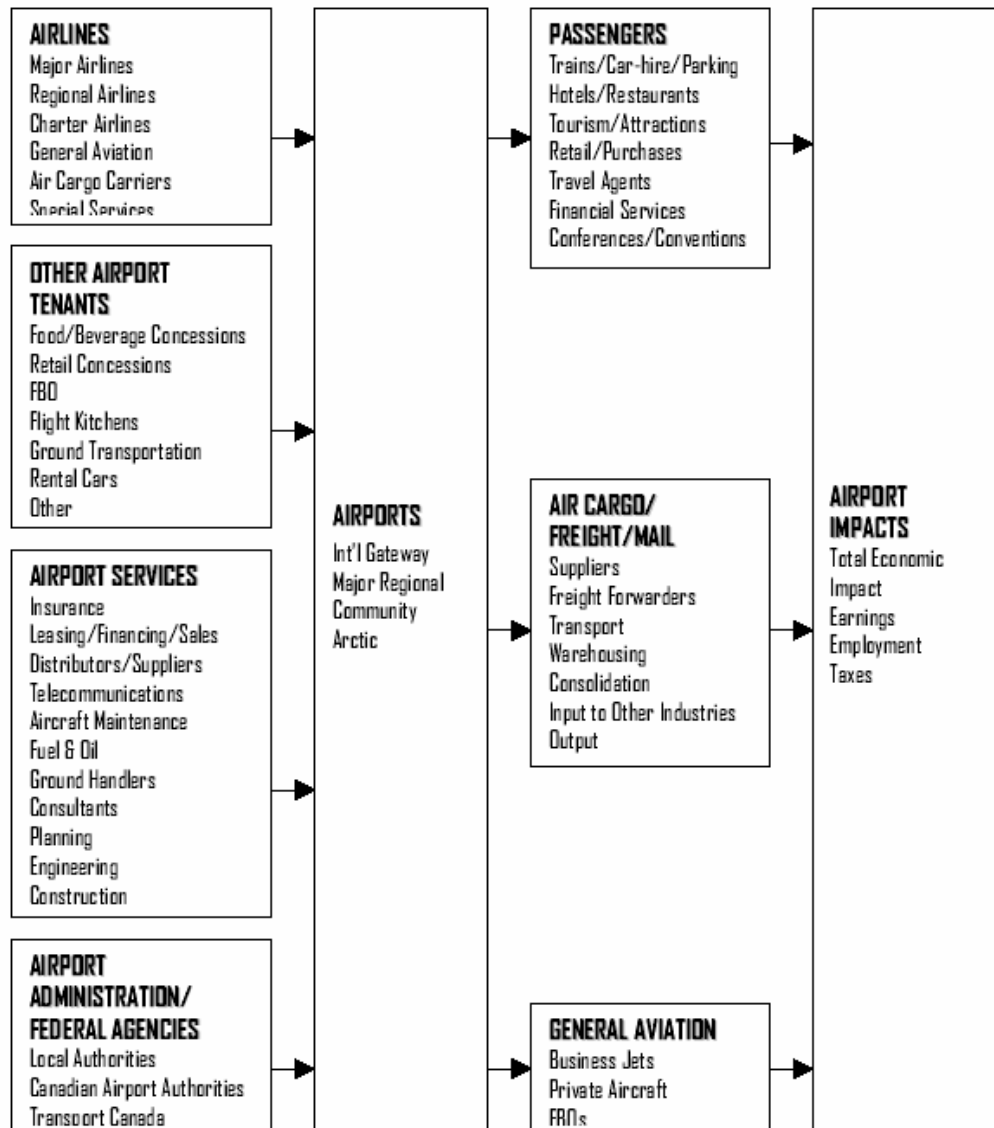
Today, commercial airports have all of the functions and physical infrastructure of a modern city, share many responsibilities with their host communities, and provide essential, if not indispensable, public services. The airport may have hundreds of tenants engaged in a wide array of aeronautical and general business enterprises located on, and generating revenue for, the airport. Annual operating budgets may run into the tens – or hundreds – of millions of dollars, with capital projects accounting for many millions or billions more. The terminal complex, general aviation facilities, airport support facilities such as maintenance buildings and equipment, and aircraft operating areas such as runways, taxiways and aprons easily value in the hundreds of millions of dollars for even a modest-sized commercial airport. Modern airports are “big business”, impacting the social, economic and political life of today’s communities.⁹ Exhibit IV-1 depicts the airport community.

B. What is Economic Impact?

Air transportation generates three types of economic impacts:

- **Direct Impacts** result from activities carried out by firms and others with a direct involvement in the operation and management of an airport and associated aviation related services. The distinguishing feature of a direct impact is that it is an immediate consequence of airport activities. Most direct impacts are generated on site.
- **Indirect Impacts** are attributable to non-aviation industries, largely off-site, which result because of the airport activity e.g., travel agencies, hotels. This economic activity would not take place absent the airport.
- **Induced Impacts** occur when employees directly linked to the airport spend their wages.

⁹ “The Economic Impact of Canadian Airports 2002”, ACI North America

Exhibit IV-1. The Airport Industry

Source: "The Economic Impact of Canadian Airports 2002", ACI NA

Economic impact can be measured in several different ways:

- Output \$ (Revenue)
- Wages \$ (Salaries)
- Employment (jobs / FTEs)
- Taxes (municipal, provincial, federal)
- Gross Domestic Product
- Socio-economic benefits

C. Airports' Value to the Economy

Airports provide significant economic and transportation benefits and have become an integral part of the local, regional and national economies. They are a key catalyst for economic growth through employment and the utilization of goods and services, and have a profound influence on the quality of life of populations around the globe. They integrate world markets and promote the international exchange of people, products, investment and ideas. They also provide a variety of other public benefits such as time and cost savings associated with air transportation.

Exhibit IV-2 depicts the economic benefits of Canadian airports.

Exhibit IV-2. 2001 Total Economic Impacts of Canadian Airports

	Output	Earning	Annual Tax Benefit	Employment
Direct Impact	\$18.5 billion	\$4.8 billion	N/A	143,000
Total Impact	\$34.1 billion	\$10.1 billion	\$3.9 billion	304,000

Based on 2001 data

Source: "The Economic Impact of Canadian Airports 2002", produced for Airports Council International, North America

There are distinct advantages for communities or regions that are within the reaches of efficient air transportation. By facilitating the activity of industrial and service sectors – connecting them to global economic activity - airports play a key role in a community's ability to attract and retain business.

Clearly, air transportation has facilitated businesses ability to move its products around the world. But it has played a far more important role in bringing business managers together, enabling them to build the links, communications, and personal relationships necessary to achieve such a level of international business activity. Despite continuous advances in telecommunication technologies, the growth in global business over the last 50 years could not have been achieved without the personal contact enabled by the world's civil aviation system.¹⁰

¹⁰ "The National Economic Impact of Civil Aviation, July 2002", DRI•WEFA, Inc. in collaboration with the Campbell-Hill Aviation Group, Inc.

V. OTTAWA INTERNATIONAL AIRPORT'S ECONOMIC IMPACT

To protect the confidentiality of information provided by private operators, their information was aggregated into categories of aviation activity (as described below).

A. Employment

1. Direct Employment

Direct Employment at the airport was calculated in terms of jobs and full-time equivalents (FTEs). The conversion factor used to create FTE from part-time employment data is based on 1880 working hours per year.

Forty-two firms involved in aviation activity reported employment distribution by type of job. Exhibit V-1 depicts the results aggregated by activity category.

Inferred employment calculations for non-respondent firms can be found in Appendix A.

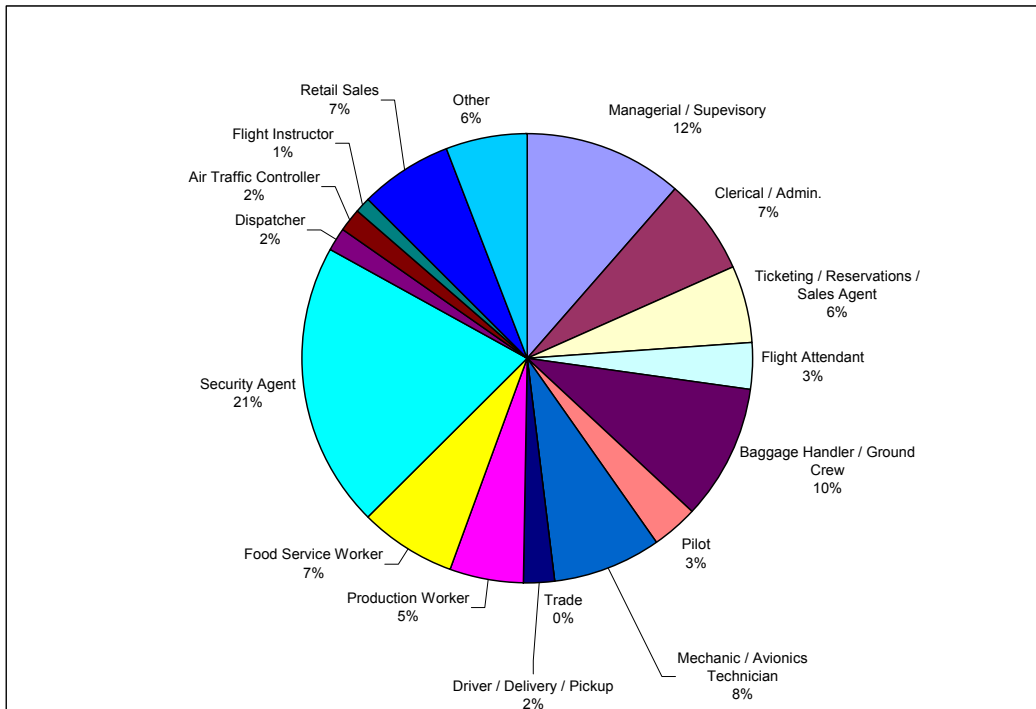


Exhibit V-1. Employment Distribution by Type of Job

The Airport directly contributes **4,207 jobs**, or **3,914 FTEs** (full-time equivalents). Exhibit V-2 outlines employment in terms of both jobs and FTE, by activity category. There is a wide range of employers at the airport but not surprisingly air carriers remain the single largest employer group at the airport. The Airport Authority itself accounts for 127 FTE.

Exhibit V-2. YOW 2003 Employment by Activity Category

CATEGORY OF RESPONDENTS	# FIRMS	JOBS	FTE
Air Cargo / Courier / Mail	7	304	302.9
Air Carrier	17	1,182	1,074.4
Aircraft / Aviation Services	7	96	90.3
Airport Commercial Services	20	508	458.9
Airport Operations	18	720	688.2
Freight Forwarder / Customs Broker	4	32	32.0
Non-Commercial Aviation	8	1,009	969.9
Ground Transportation	3	345	292.1
Other	6	11	5.2
TOTAL	90	4,207	3,914

Exhibit V-3 depicts the FTE distribution by activity category.

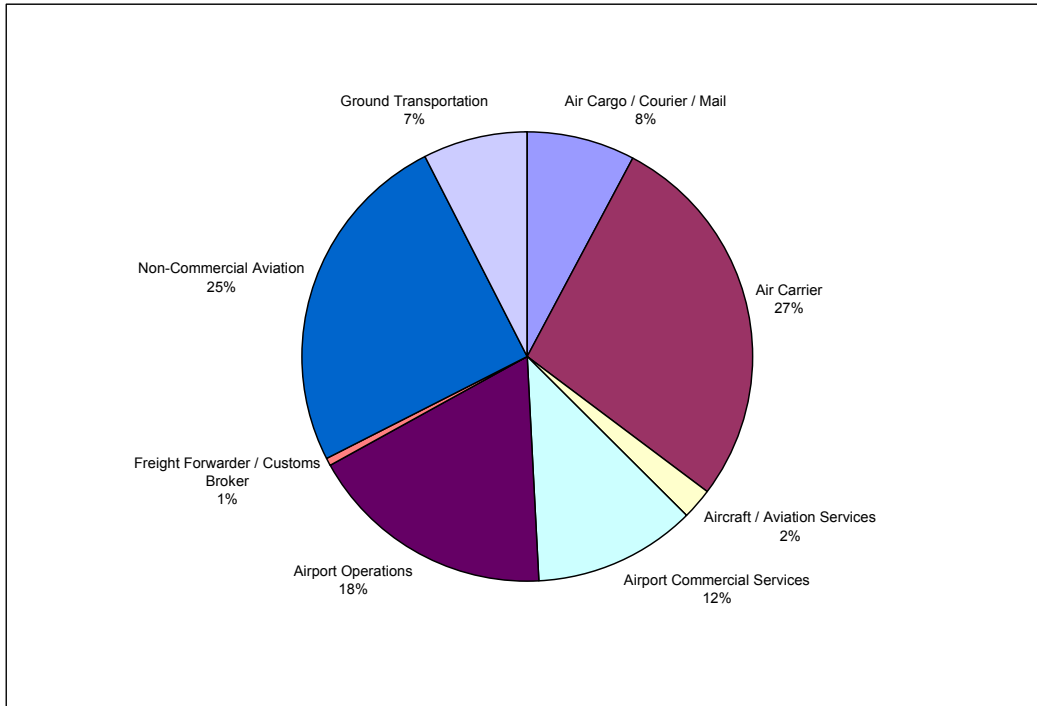


Exhibit V-3. FTE Distribution by Activity Category

Direct FTEs have increased 13% over the 2000 figure of 3,455. The percentage increase is higher than the equivalent number of jobs created in the same period indicating an overall move to full-time employment in firms directly related to airport activity.

2. Indirect and Induced Employment

Indirect and Induced employment is calculated using industry mean Input/Output multipliers for the air transportation industry. The multiplier value of 2.179 is applied to the direct employment figures to attain the Total Employment Effect. Indirect and Induced employment (Total less Direct) therefore results in **4,960 jobs** or **4,615 FTE**.

A major component of indirect employment is the number of jobs and FTEs supporting aviation activity.

The surveys sent to local travel agencies and hotels indicate that hotel staff providing service to air crew and passengers account for 249 jobs or 210 FTE of indirect employment. Travel agency staff issuing air tickets account for 468 staff or 378 FTE of indirect employment.

B. Wages and Salaries

1. Direct Earnings (Wages)

Tenants and service providers located at the airport were asked to report earnings or wages for their employees directly involved in aviation activity. Year 2003 Direct Earnings (Wages) at the Ottawa Airport are calculated to be **\$146.8 million**.

Inferred wage calculations for non-responding firms can be found in Appendix B.

Exhibit V-4 depicts the distribution of direct earnings (wages) by activity category while Exhibit V-5 reports the direct earnings (wages) in dollar figures.

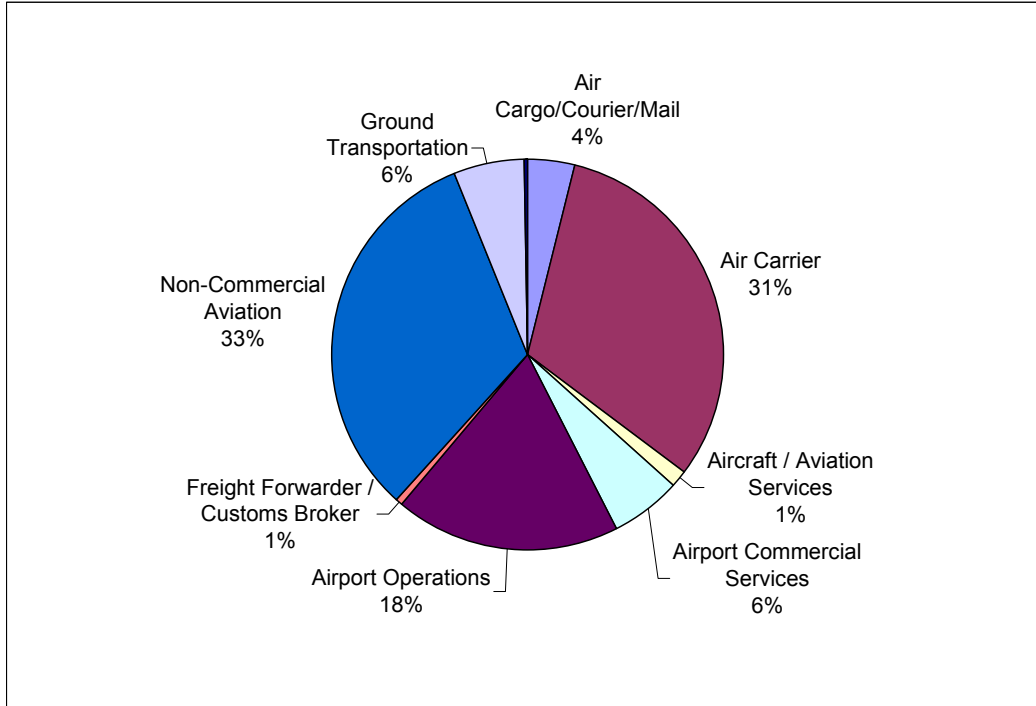


Exhibit V-4. Distribution of Direct Earnings by Activity Category

Exhibit V-5. Direct Earning by Activity Category

CATEGORY OF RESPONDENT	# OF FIRMS	DIRECT WAGES
Air Cargo/Courier/Mail	7	\$5,684,800
Air Carrier	17	\$46,205,708
Aircraft / Aviation Services	7	\$1,851,500
Airport Commercial Services	20	\$8,742,468
Airport Operations	18	\$27,051,156
Freight Forwarder / Customs Broker	4	\$912,500
Non-Commercial Aviation	8	\$47,546,750
Ground Transportation	3	\$8,391,624
Other	6	\$400,000
TOTAL	90	\$146,786,506

At \$146.8M this represents a 13% increase from the corresponding figure in the 2000 report.

2. Indirect and Induced Earnings (Wages)

Indirect and Induced earnings are calculated using industry mean Input/Output multipliers for the air transportation industry. The multiplier value of 1.925 is applied to the direct earning figures to attain the Total Earnings Effect. Indirect and Induced earnings (Total less Direct) are therefore **\$135.8 M**.

A major component of indirect earnings is attributable to employment supporting aviation activity.

The surveys sent to local travel agencies and hotels indicate that hotel staff providing service to air crew and passengers account for approximately \$7.4 M in indirect wages. Travel agency staff issuing air tickets account for approximately \$12.4M in indirect wages.

C. Business Revenues (Output)

1. Direct Output

Direct output at the airport was calculated for the components of sales of goods and services (including that of the Airport Authority). Year 2003 Direct Output at the Ottawa Airport was calculated to be **\$541.4M**. To protect the confidentiality of information provided by private operators, their information was aggregated by activity category. Inferred output calculations for non-respondent firms can be found in Appendix C.

Exhibit V-6 depicts the distribution of direct output by activity category while Exhibit V-7 reports the direct output in dollar figures.

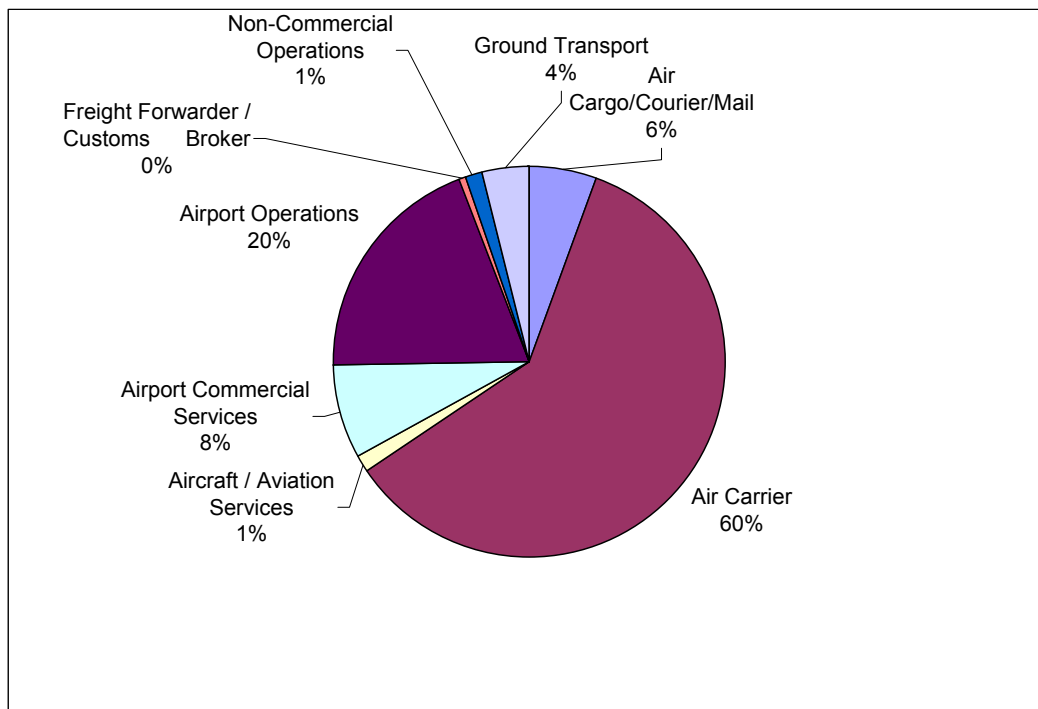


Exhibit V-6. Distribution of Direct Output by Activity Category

Exhibit V-7. Direct Output by Activity Category

CATEGORY OF RESPONDENT	# OF FIRMS	DIRECT OUTPUT
Air Cargo/Courier/Mail	7	\$30,400,000
Air Carrier	17	\$325,212,254
Aircraft / Aviation Services	7	\$6,423,000
Airport Commercial Services	20	\$42,335,170
Airport Operations	18	\$106,196,658
Freight Forwarder / Customs Broker	4	\$2,250,000
Non-Commercial Operations	8	\$8,020,832
Ground Transport	3	\$20,459,487
Other	6	\$120,000
TOTAL	90	\$541,417,400

Note that \$30.3M in non-aviation related economic activity takes place on airport property, but has not been included in the direct output figures.

The 2000 study records direct output of \$365 million. Direct output has increased a total of 48%, at an average annual rate of 14% which far exceeds the average inflation rate of 2.9% during the same period.

2. Indirect and Induced Output

Indirect and Induced output is calculated using industry mean Input/Output multipliers for the air transportation industry. The multiplier value of 1.959 is applied to the direct output figures to attain the Total Output Effect. Indirect and Induced outputs (Total less Direct) are therefore **\$519.2 M**.

A major component of indirect output is attributable to the spending by visitors on accommodation, food, attractions etc., as well as the output of travel agencies and hotels in support of aviation activities

The surveys sent to local travel agencies and hotels indicate that hotel output related to the provision of service to air crew and passengers accounts for approximately \$30.5M in indirect output. Travel agency commissions related to the issuance of air tickets account for approximately \$32.9 in indirect output. Visitor Spending accounts for approximately \$142.7 of indirect output.

D. Taxes

Statistics Canada provides Average Expenditure Statistics for households in each province¹¹. In Ontario, the average household spends 20.5% of their income on personal income taxes. By applying this percentage to the \$146.8 M in earnings directly associated with airport activity, approximately **\$30.1 M in direct personal income taxes** was remitted to the provincial and federal governments in 2003 as a result of airport activity.

Statistics Canada also reports that the average household spends 33% of their income on retail goods and services. By applying 15% (combined GST and PST) to the amount spent on retail goods and services (33% x \$146.8M), we estimate that **\$7.3 M in direct retail tax** was remitted to the provincial and federal governments in 2003 as a result of airport activity.

In 2003, the Airport Authority remitted **\$3.4M** in Payments in Lieu of Taxes to the municipality, as well as **\$11.3M** in rent paid to the federal government.

E. Socio-Economic

1. Part of the National Capital Region Transportation System

The National Capital Region's transportation system includes walking and cycling facilities, conventional and specialized bus services (OC Transpo, ParaTranspo, STO), Transitway and O-Train rapid transit lines, a road network and parking facilities. City-owned (Ottawa and Gatineau) transportation facilities are complemented by freeways owned by the Provinces of Ontario and Québec, and by roads, inter-provincial bridges and multi-use pathways owned by the federal government. There are also international and general aviation airports, intercity rail and bus stations, two ferries and a freight yard.

Direct flights are available from dozens of major North American cities to Ottawa's newly expanded Ottawa International Airport. Ottawa is also easily accessible by train and bus, while major highways link the city with Toronto, Montreal and the U.S. border.

¹¹ Statistics Canada – 2002 Average household expenditures, provinces and territories.

While the City of Ottawa's Transportation Master Plan¹² primarily addresses road and transit links, it also acknowledges the importance of supporting air, rail and intercity bus services.

The air, rail and intercity bus industries are all served by major terminals in Ottawa. The City has a major interest in providing appropriate linkages between these terminals and the local transportation system.

The City of Ottawa's Transportation Master Plan calls for enhancement of the existing high-quality bus rapid transit service to the Ottawa Macdonald-Cartier International Airport, through the extension of a rail rapid transit line to the airport. A new rapid transit line integrated with the new airport terminal facilities could offer a higher level of service to travellers as well as the many employees in the airport area. The two VIA Rail stations in Ottawa, including the main station on Tremblay Road and the Fallowfield station on Woodroffe Avenue, are already successfully integrated with rapid transit stations.

General aviation supports local commerce, government and recreation. In Ottawa, the three general aviation airports are Carp Airport, Rockcliffe Airport and the North Field of the Macdonald-Cartier Airport; the City of Gatineau Airport, across the Ottawa River in Quebec, plays a similar and complementary role. As a result of policy changes in the 1990s, Carp Airport was handed over to local government, and the City of Ottawa has committed to operate it until 2007. The City is committed to providing adequate ground transportation routes to general aviation facilities, in recognition of their important role in the community

2. Support to the High-Tech and Tourism Sectors

The high-technology sector in the Region is highly dependent on the availability of air transport, as it creates linkages to the rest of the world. In Ottawa, high-tech manufactured goods are considered high value, low volume, and can be shipped by road or by air. The value of air transportation to the high technology sector is therefore not in air cargo, but rather in business travel i.e., to meet with customers. As more companies create international markets, air travel is expected to increase. The export market (manufacturing) accounts for one-half to two-thirds of the business air travel, which is primarily destined to Toronto

"Planes are the taxis of the high-tech generation".

Jeffrey Dale –
President & CEO of OCRI

¹² City of Ottawa Transportation Master Plan:
http://city.ottawa.on.ca/2020/transpo/11_en.shtml

and the United States (Dallas, Chicago, Boston, Atlanta and California); while business air travel in the high-tech market (services) is primarily domestic (Toronto, Montreal, Vancouver, Calgary, Halifax). There is also a large demand for air travel to Europe.

The new air terminal building portrays a professional image of Ottawa and as a statement about the health of the local economy could very easily be one of the catalysts in rejuvenating the investment in the local high-tech sector.

In the NCR, there are significant business linkages to Washington, New York, Phoenix, Los Angeles, Chicago, Tucson, Raleigh Durham, San Jose and Austin, TX. If the business traveller is met with a hassle free travel experience, he/she will likely tell their colleagues, and perhaps use Ottawa to host a meeting or convention. If again met with a hassle free travel experience, the in-bound business traveller is likely to return to Ottawa for personal travel. Business travellers become 'Ambassadors' for the Region.

The city's new airport terminal coupled with the Congress Centre expansion has given tourism officials the infrastructure boost they need. According to Jacques Burrell, President and CEO of the Ottawa Tourism and Convention Authority "The new terminal will make the city more competitive in business. It will give a cleaner image in terms of the way the city is progressing and that it's now entered the 21st century".

Both the Ottawa Tourism and Convention Authority and Tourism Outaouais plan on using the new air terminal as a selling tool for the Region.

3. Other Support Roles

The Airport, as part of the Region's transportation system, has facilitated Regional bids for national events such as the 2003 Juno Awards, and les Jeux Francophonie.

4. Role in Ottawa's Economic Future

As previously highlighted, airports provide significant economic and transportation benefits. With government and high-tech as the primary employment sectors in the Region, the ability to transport people – primarily the business traveller – is of key importance. A recent survey¹³ of departing passengers indicated that 55% of all

¹³ Ottawa Macdonald-Cartier International Airport – Air Service Demand Study, January 2004, Sypher:Mueller International.

passengers are traveling for business purposes (62% of the Region's visitors and 48% of NCR residents).

As stated above, the Ottawa International Airport can act as a catalyst for the local tourism and high-tech sectors. Despite the challenges experienced by the air transport industry in the past two years, the new terminal removes an inhibitor to people wanting to come - there are more direct flights, it is quicker to get in and out, the customs area has been revamped and there are extra gates - traveling to Ottawa is hassle free. As the Nation's Capital continues to grow as an urban centre, the importance of the hassle factor increases, and Ottawa could become a destination of choice for both business and personal travel.

VI. IMPACT OF THE NEW AIR TERMINAL BUILDING

Most of the airport businesses that answered the question regarding the impact of the new Air Terminal Building on their operating efficiency, revenue or operating costs indicated that it was too premature to estimate, or that they had seen little change to date. Several indicated that it is unfortunate that some travellers still need to be channeled back into the old terminal building at peak times thus affecting their overall travel experience.



Retailers indicated that the increased size of the ATB has increased the number of retail outlets and therefore revenues. Security (screening and policing) providers also indicate that the size of the ATB impacts their operations by having to provide more staff.

Positive comments about the facility clearly outweigh the negative. One tenant indicated that "It is too early to judge the impact the new ATB will have on the Ottawa region but it is arguably one of the best airports in North America for travellers. In addition it is definitely a facility that reflects well on the Nation's Capital. Ottawa residents, business and government leaders should be proud of the new facility. It is unique, modern and convenient. It seems necessary that the second phase of the project get expedited." This seems to be the general consensus, as further demonstrated below.

More than 500 firms and 5,000 people were involved in the construction of the new air terminal building which was the biggest construction project in the city's history.

Some local hotels indicated that the new ATB enhances the guest experience, and creates a dramatic impact on the city and the impression it leaves on its visitors. This new construction also supports the expansion of the Region's convention facilities.

Gilles Picard, Executive Director of Tourism Outaouais has been quoted in the Ottawa Business Journal as saying "Now we have an airport to respond to the needs of tourists and convention goers".

Jacques Burrelle, President of the Ottawa Tourism and Convention Authority during an interview stated that he's seen over 50 airports in North America during his career, and the Ottawa International Airport is on par with other world class facilities.



"The Ottawa International Airport is on par with other world class facilities."

Jacques Burrelle

VII. CONCLUSIONS

Airports provide significant economic and transportation benefits and have become an integral part of the local, regional and national economies. They are a key catalyst for economic growth through employment and the utilization of goods and services, and have a profound influence on the quality of life of populations around the globe. They integrate world markets and promote the international exchange of people, products, investment and ideas. They also provide a variety of other public benefits such as time and cost savings associated with air transportation.

Exhibit VII-1 summarizes the economic benefits of the Ottawa airport as measured in 2004.

Exhibit VII-1.

	Employment (FTE)	Wages (\$M)	Business Revenue (\$M)
Direct	3,914	\$146.80	\$541.40
Indirect & Induced	4,615	\$135.79	\$519.20
TOTAL	8,529	\$282.59	\$1,060.60
2000 Results	7,857	\$299.00	\$958.00

Indirect and induced measures were determined by using Canadian air transportation industry economic multipliers. As outlined in the 2000 study, multiplier analysis is limited by a number of factors and should be used with caution.

In making direct comparisons of economic impacts between 2004 and 2000, given the dramatic changes in the air transportation industry in recent years, it is important to understand that both represent a snapshot in time.

Since the last update, total air traffic movements at the Airport, in line with many other airports across Canada, have declined a total of 14%, at an average compounded annual rate of 4.9% Commercial air carrier movements declined 11% since the 2000 report but showed a modest 2% increase in 2003 over 2002.

Most of the direct jobs associated with activity at the airport are full-time and non-seasonal. Given that direct employment has increased 13%, and direct output by 48% within the same time frame, operators are clearly doing more with less.

Some additional measures are shown in Exhibit VII-2.

Exhibit VII-2. Additional Economic Impact Measures

	2003	2000
Enplaned/Deplaned Passengers	3.26 M	3.43 M
Direct Output per E/D Passenger	\$166	\$108
Direct Output per Landing	\$6,929	\$4,030
Direct Output per FTE	\$138 K	\$102K
Increase in FTE for every 1M increase in passenger traffic	1,200	1,044
Number of landings required for an increase of one full-time job	20	25

By facilitating the activity of the government, high-technology and tourism sectors – connecting them to global economic activity – the Ottawa Airport plays a key role in the Region's ability to attract and retain business.

Clearly, air transportation has facilitated local businesses ability to move its products around the world. But it has played a far more important role in bringing business managers together, enabling them to build the links, communications, and personal relationships necessary to achieve such a level of international business activity. This is especially true in the local high-technology and government sectors. These benefits cannot always be quantified but are of the utmost significance.

In conclusion, with over 3,900 full-time jobs and \$541 million in direct output, the Ottawa Airport is a powerful economic generator for the Region. The Airport is a gateway to the National Capital Region and plays a major role in supporting business, tourism and our overall quality of life.

APPENDIX A

INFERRED EMPLOYMENT CALCULATIONS

A. Air Carriers

Only two of the major air carriers reported employment figures. The lowest output per FTE ratio was used to calculate employment (FTEs) for the remaining non-respondent major carriers.

Only one of the regional / commuter carriers reported employment figures. The output per FTE ratio for this carrier was used to calculate employment (FTEs) for the remaining non-respondent regional / commuter carriers.

An average ratio of 1.2 jobs / FTE was determined from employment data provided by three of the carriers. This ratio was applied to the inferred FTE numbers as calculated above, to determine the number of jobs for non-respondent firms.

B. Car Rental Companies

Of the seven car rental companies on-site, only four included employment figures in their responses. Although the average was 11.85 FTEs, a lower figure of 8 FTE was deemed more appropriate, and was applied to the three non-responding firms.

C. Ground Transportation

Taxi Cab

There are 128 licensed taxis with approximately 200 drivers at the airport (open licensed pickup). There are approximately 20,000 pickups per month, or 240,000 per year. Using the same ratio of FTE per taxi cab as used in the 2000 study (0.85), it is estimated that there are **109 FTE** conducting licensed open pick-ups at the airport.

There are four taxi cab companies, with 1-10 cars each, performing pre-arranged pickup at the airport. There are approximately 325 pickups per month, or 3,900 per year. Assuming each pickup is approximately 45 minutes in length, a total of **1.4 FTEs** account for pre-arranged taxicab pickup at the airport.

The number of taxicab drop-offs is assumed to be equal to the number of pick-ups, equating to **110.4 FTE**.

Limousine

There are approximately 25 licensed limousine companies offering pre-arranged service at the airport. There are approximately 450 of these pre-arranged limousine pickups per month, or 5,400 per year.

APPENDIX B

INFERRED WAGE CALCULATIONS

A. Air Carriers

Only one of the air carriers reported both wages and employment figures. The annual salary per FTE of this one firm was applied to the non-respondent firms.

B. Retail Concessionaires

Four of the ten retail concessionaires reported both wages and employment figures. An average hourly rate of \$8 per FTE was calculated from these four reporting firms. This rate of \$8/hr is consistent with industry practice.

To calculate an annual wage figure for non-respondent firms, the \$8/hr rate was multiplied by the number of FTEs and then by 2080 working hours per year.

C. Car Rental Companies

Of the seven car rental companies on-site, only two reported both wages and employment figures. Although an average annual salary of \$33,000 per FTE was calculated from these two reporting firms, a lower figure of \$25,000/FTE was deemed more reasonable, and was applied to the remaining five firms.

D. Security Providers

Of the six security providers, only two (both public agencies) reported both wages and employment figures. An average annual salary per FTE of \$34,000 was applied to non-responding firms providing policing functions, while an hourly rate of \$11 was applied to security screening and private sector security providers.

E. Freight Forwarders and Customs Brokers

Only one of the four freight forwarders and customs brokers included wages in their response. The per FTE wage rate of this firm was applied to the three non-respondent firms.

F. Other Government Agencies / Departments

None of the government agencies / departments reported wage figures. An average annual salary of \$50,000 per FTE is inferred.

G. Ground Transportation Wages

It is assumed that each FTE earns approximately \$30,000 per year. At 253 FTE, this brings the total estimated wage for ground transportation personnel to \$7.6 M.

H. Air Cargo / Mail / Courier

It is assumed that each FTE earns approximately \$10 per hour. At 310 FTE, this brings the total estimated wage for air cargo / courier / mail personnel to \$5.8 M.

APPENDIX C

INFERRED OUTPUT CALCULATIONS

A. Carriers

None of the carriers surveyed reported their sales figures attributable to operations at the Ottawa Airport. Since this represents a significant portion of the direct output it was important to calculate estimates.

Average fares attributable to flights departing from Ottawa were identified using data from the Sabre database.

As the fares in the Sabre database include flights with one or more flight segments, it is reasonable to conclude that not all of the fare is attributable to operations at the Ottawa airport, and that the fare should be spread over several airports, depending on the number of flight segments. The table below outlines the assumptions made in calculating the portion of the fare attributable to YOW flight segments.

Factor Used in Pro-rating Fares Given Flight Segment, Number of Flight Segments for Flight and Sector

Total Segments	Segment #	Domestic	TB	International
1	1	100%	100%	100%
2	1	50%	35%	25%
	2	50%	65%	75%
Total over segments		100%	100%	100%
3	1	25%	25%	20%
	2	50%	50%	60%
	3	25%	25%	20%
Total over segments		100%	100%	100%
4	1	20%	20%	15%
	2	30%	30%	40%
	3	30%	30%	25%
	4	20%	20%	20%
Total over segments		100%	100%	100%
5	1	20%	15%	15%
	2	20%	25%	30%
	3	20%	25%	20%
	4	20%	20%	20%
	5	20%	15%	15%
Total over segments		100%	100%	100%

The pro-rated YOW segment results from the Sabre data have been summed by Carrier. This data has not been included to protect carrier confidentiality. The segment totals were then divided in half to reflect the reality that the airport on the other end of the city pair included in the YOW segment should claim some of the output. Total carrier output is therefore estimated at \$318.3 M.

The results of this approach were confirmed by multiplying an average 1 way fare of \$404 by the 2003 YOW E/D Passenger count of 3,262,345 and then divided by 2 to count departing passengers only, and then by 2 again to reflect the portion of the fare applicable to the other airport in the flight segment. The results indicate an acceptable variance of 3.4%.

B. Air Navigation

Direct output related to the air navigation services provided at the Ottawa airport, was estimated from NAV Canada's 2003 Terminal Fee revenues factored by the YOW contribution to national movements as measured by Nav Canada and published by Stats Canada. This is a conservative approach as it excludes other commercial, private, and government operations.

Air navigation terminal fees are estimated \$15.9M.

C. Car Rental Companies

Of the seven car rental companies on-site, only two included direct output in their responses. An average of the two (\$2.85M) was applied to the five non-responding firms, bringing the total estimated output for the five car rental agencies to \$19.95 million.

D. Security Service Providers

None of the six security service providers included sales in their responses. Different methodologies were applied to infer direct output based on the type of security operation at the airport:

- CATSA's output figure was estimated based on the application of a \$12 ATSC per enplaned passenger.
- A 10% markup was applied to the total wages reported by private security firms.
- A straight pass-through was applied to the total wages reported by public policing agencies.

E. Retail Concessionaires

Five of the ten retail concessionaires included sales in their responses. The maximum per FTE output reported was \$143K, the minimum at \$50K, with an average of \$81.4K. As the maximum was considered to be an outlier, the low figure of \$50,000 per FTE was applied to the five non-respondent firms.

F. Freight Forwarders and Brokerage Firms

One of the four freight forwarders and customs brokers included sales in their response. The per FTE output of this firm was applied to the three non-respondent firms.

G. Ground Transportation

Using the assumptions in Appendix A – Section G, there are 487,800 taxicab pickups and drop-offs per year. Assuming each pick up and drop-off costs \$40, total output related to taxi-cab ground transportation is \$19.5 M.

H. Air Cargo / Mail / Courier

It is assumed that each FTE generates approximately \$100K in direct output. At 310 FTE, this brings the total estimated direct output for air cargo / courier / mail operations at the airport to \$31 M.

APPENDIX D

INDIRECT IMPACT – SPECIAL CASES

A. Indirect Employment

1. Hotel Employment

Based on the information provided by local hotels, the average number of jobs related to either air crew or air passengers was 18 for large hotels, and 2 for small hotels; while the average number of FTEs for large hotels was 14 and 2 for small hotels. Total air related employment is estimated at **249 jobs** or **210 FTEs**.

2. Travel Agency Employment

Based on the information provided by local travel agencies, the average number of jobs related to issuing air tickets was 11. This was deemed to be high as it included an outlier. With the outlier removed, a more reasonable number of 4 jobs per agency was applied to the non-respondent firms. Using the same methodology, an average number of 3.3 FTEs was applied to non-responding agencies. Total air related employment is estimated at **468 jobs** or **378 FTEs**.

B. Indirect Wages

1. Hotel Staff Wages

Based on the information provided by local hotels, the average wage per FTE, where the FTE is related to either air crew or air passengers was \$31,930. This average was applied to the total estimated FTEs. Total estimated wages applicable to hotel staff supporting aviation activity is **\$7.4 M**

2. Travel Agency Wages

Based on the information provided by local travel agencies, the average wage per FTE, excluding outliers, was \$32,024. Total estimated wages applicable to travel agency staff issuing air tickets is **\$12.4 M**.

C. Indirect Output

1. Visitor Spending

The Ottawa Tourism and Convention Authority reports that visitors to the Ottawa Region spend on average \$180 each. A recent survey of departing passengers indicated that approximately 53% of the passengers at the Ottawa International Airport are visitors. It is therefore estimated that indirect output resulting from visitors using the Airport, is in the order of **\$155.6 M**.

2. Hotel Revenues

Based on the information provided by local hotels, the average number of guest nights related to either air crew or air passengers was 17,245 for large hotels, and 1,289 for small hotels. Total air related guest nights in the NCR is estimated to be 296,317. When multiplied by an average room rate of \$103, hotel related output for air passengers is estimated at **\$30.5 M.**

3. Travel Agency Commissions

Based on the information provided by local hotels, the average number of airline tickets issued annually was 3,835. As the commission is based on the value of the airline ticket, and total commissions are unknown. A value of \$80/ticket issued has therefore been applied, resulting in an estimated output for travel agency commissions at **\$32.9 M.**

APPENDIX E

GDP EFFECT

Gross Domestic Product

While this Report has used direct measures of Economic Impact to the greatest possible degree, in terms of Gross Domestic Product (GDP) effect the figures have to be inferred using industry standard measures.

GDP is a measure of the value added by an enterprise or system. It is variously defined as:

“A measure of the output produced by factors of production located in a country regardless of ownership”; or

“The market value of goods and services produced over time including the income”; or

“The value of goods and services produced in an area”.

In the context of this Report it is used to represent the total value added by the system of firms associated with the operation of, and activity at, the Ottawa International Airport.

Statistics Canada provides air transportation industry multipliers for GDP based on output. Using a direct multiplier of 0.389508 and a total GDP multiplier of 0.660853, we see that economic activity associated with the Airport contributes **\$210.9 M in direct value-added wealth creation for Ontario's GDP, and \$357.8 M in total GDP including indirect and induced effects.**

