

*THE 2004 ECONOMIC IMPACT OF
THE CALGARY
INTERNATIONAL AIRPORT*

prepared for

THE CALGARY AIRPORT AUTHORITY

RP ERICKSON & ASSOCIATES
AVIATION CONSULTANTS

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EXECUTIVE SUMMARY

This report documents the 2004 economic impact activity generated by some 335 firms operating at the Calgary International Airport. Significant additional benefits are generated by the spending of non-resident visitors arriving by air and from the construction activity associated with airport capital projects.

The economic impact is reported in terms of full-time equivalents (FTEs), labour income and value-added gross domestic product (GDP). Direct, indirect and induced forms of activity have been considered.

The response rate to the interview process and survey questionnaire was exceptional : a 94 percent completion rate for the data sought, with a 99 percent return rate related to core employment data.

In 2004, the Calgary International Airport supported a significant level of economic activity :

Direct Impact

<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
24,692 †	\$916 million	\$1.20 billion	\$2.11 billion

Total Impact

<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
59,151	\$2.53 billion	\$2.35 billion	\$4.88 billion

† 12,546 full-time jobs are located on the airport

In 2004, the Calgary International Airport generated \$4.9 billion of GDP activity, equivalent to 10% of Calgary's total GDP for the year.

The economic benefits are distributed :

	<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
Air Carriers	38%	45%	28%	37%
ATB Concessionaires	9%	5%	9%	6%
General Aviation	8%	13%	11%	12%
Air Cargo	8%	6%	3%	5%
Airport & Gov't	4%	6%	4%	5%
Corporate Aviation	2%	2%	2%	2%
On-Airport, Non-Aviation	3%	3%	10%	7%
Non-resident Spending	26%	16%	28%	22%
'One-time' Construction	3%	3%	5%	4%

Each 1000 E&D passengers supports 6.5 full time jobs.
Each 1000 E&D passengers supports \$276,000 of annual labour income.
Each 1000 E&D passengers supports \$533,000 of total GDP activity.

Each time an A340 lands in Calgary, it supports 1.82 FTEs;
\$77,000 of annual labour income; and \$149,000 of GDP activity.

Each time a B757 lands in Calgary, it supports 1.50 FTEs;
\$64,000 of annual labour income; and \$123,000 of GDP activity.

Each time an A319 or B737 lands in Calgary, it supports 0.65 FTEs;
\$28,000 of annual labour income; and \$53,000 of GDP activity

In 2004, the Calgary International Airport generated **\$813 million in taxes.**

This total is divided :

Federal Government	\$479 million
Province of Alberta	\$229 million
Calgary Area Municipal Gov'ts	\$105 million

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Chapter I

Introduction

1.1 About this report

The report was undertaken by RP Erickson & Associates for The Calgary Airport Authority (The Authority). The purpose of the study is to document the economic impact of the Calgary International Airport during the 2004 calendar year. This study utilized a similar methodology as employed in the 1998 and 2001 economic impact evaluations; albeit with several slight modifications. The consultants have utilized an Alberta Department of Finance model to establish the 'one time' economic impact from on-airport construction activity and The Authority contracted Econometric Research Limited to assess the 2004 tax impact of the airport. These later findings are included in the Executive Summary, with the entire tax report contained in Appendix IV.

1.2 Background

The Calgary International Airport is an economic engine pumping billions of dollars of economic activity into the provincial economy, predominantly within the greater Calgary and southern Alberta region. From a passenger perspective, the airport is Canada's fourth busiest. In 2004, the Calgary airport handled 9.17 million enplaned and deplaned passengers; 120,000 tonnes of air cargo throughput; and 218,500 aircraft movements.

Clearly, there is a direct link between the interaction of national, regional and local economies and the volume of air travel generated at a particular airport. Passenger and air freight traffic at the Calgary airport has benefited from the considerable momentum inherent in the Alberta economy over the past decade.

The Calgary economy exhibits a range of air traffic 'attractors', such as : an entrepreneurial-minded business community which has fostered a diversified local economy - Calgary features Canada's second largest number of Fortune 500 Corporate head offices; a well-educated workforce with comparatively high disposable incomes which has created a stable base of significant demand for the complete range of air carrier products; and, southern Alberta's attractive location as a strong convention and international tourism destination.

As such, the Calgary airport has become an important hub for air travel in western Canada and in the process it generates a substantial economic 'footprint' within the community and province.

1.3 Methodology

The economic impact of the Calgary International Airport has been measured in terms of employment [full-time equivalents or FTEs], labour income, other expenditures and total value-added GDP. These leading indicators are expressed in dollar values and person-years of employment. Direct, indirect and induced forms of activity have been considered for employment and GDP output. Data was obtained for the 2004 calendar year.

The data compiled in the 2004 study was obtained via a questionnaire circulated amongst the roughly 335 firms that operate from the Calgary International Airport. It is noted that a number of firms, particularly airport terminal building (ATB) concessionaires, often include subsidiary businesses operating separate venues. In virtually all cases, data was sought for an entire operation; (by example, over 115 commercial outlets are contained within the ATB although only 60 individual firms were contacted).

The survey population was separated into 9 sub-categories; the impacts associated with :

- the air carriers & their support services;
- the airport terminal building concessionaires;
- the general aviation community;
- the air cargo sector;
- airport support & government agencies;
- the corporate aviation community;
- on-airport, non-aviation firms;
- the impact associated with the spending activities of non-resident air passengers visiting the Calgary area; and,

- the 'one-time' economic impacts of new construction projects on the Calgary International Airport.

Each of the above categories is described in more detail in Chapter II (Sections 2.1 through 2.9). Section 2.10 displays the aggregate economic impact of the Calgary International Airport for 2004.

In conducting the interview/questionnaire process, key principals at each targeted firm were visited by the consultants, where : the underlying rationale for undertaking the study was explained; the objectives of the study could be examined; the value of their participation could be fully explored; and, the confidentiality of their data could be assured.

This approach resulted in an exceptional 94 percent response rate. Of the 335 firms surveyed, 315 fully completed the questionnaire : 6 firms chose not to participate; the other 14 firms provided incomplete information, with some reticence in providing expenditure data. Particular effort was directed at larger employers (25+ employees), where a 99 percent response rate was achieved for employment data. In those cases where respondents chose not to provide employment, labour income or cost figures, data was estimated comparing completed results of similar-sized firms involved in like commercial pursuits.

The impact of off-airport passenger spending was undertaken by utilizing the Conference Board of Canada's TEAM econometric model, as explained in Section 2.8.

One last important consideration is worth imparting : this report represents a 'snap-shot' of economic activity in time. The data herein represents the economic activity for the Calgary International Airport for calendar year 2004.

1.4 The economic impact modelling process

Economic impact analysis is based on the premise that operations within various industries in an economy are closely related or linked to each other; that is, an increase in the activity levels in one industry will produce a positive 'domino' or rippling effect on other industries. Economists discuss the impact that one sector has on another in terms of indirect and induced effects. The total economic impact is the sum of the direct, indirect and induced effects.

In this report :

Direct economic effects are the economic activities related to employment, labour income, and expenditures emanating from firms located on the Calgary International Airport.

Indirect economic effects are those related to the economic impact associated with parallel co-activities which support activities at the Calgary International Airport. Broad examples would include : the inputs required to find, process and ship refined oil products used aboard aircraft or the office supply industry which supports aviation administration functions, etc. This economic activity is accounted for by multipliers which attempt to quantify the interactive linkages within the local economy impacted by direct economic activity at the Calgary International Airport.

Induced economic effects are those due to the overall increase in the goods and services produced within an economy, arising from the spending power of direct and indirect employees. For example, the auto mechanic whose services are in demand by an employee of an airport firm who requires the use of his/her car to get to/from the airport, or the movie theatre operation which benefits from the disposable income of airport workers, etc. As in the case in calculating the indirect benefits, multipliers are used to identify induced activity.

The aviation industry is a good example of a highly integrated sectoral activity which has significant linkages throughout a domestic economy. The multipliers associated with aviation are higher than most primary sectors and, as such, the potential impact to an economy linked to an increase or expansion in aviation activity is significant.

The most common economic measures used in economic impact surveys are : employment and value-added gross domestic product [GDP]. For this study, the consultants have chosen to display labour income as a separate category of value-added GDP in addition to total value-added GDP.

In this report :

Employment is measured by FTEs and by annual income plus benefits of the employees required to mount an airport presence. FTEs are expressed in person-years and labour income by dollar value. Employment multipliers are used to generate the associated indirect and induced impacts.

Labour income is the total payroll expense of the canvassed firms, including wages, salaries and all employee benefits. Labour income multipliers are used to generate the associated indirect and induced impacts.

Other Expenditures is defined as the annual operating expenditures for goods and services of the canvassed firms, excluding labour income.

Total Value-added GDP is an aggregate of labour income and other expenditure totals. No multiplier has been applied to this category.

1.5 A word about the multipliers used in this report

Multipliers are used to *infer* indirect and induced economic activity from a measure of direct economic activity. Multipliers are not directly observed; they are inferred from an economic model. By far the direct measure is the most accurate. Readers are advised that multiplier analysis remains an imprecise econometric technique and that caution be used in interpreting the indirect and induced impacts contained in this report. However, multipliers are virtually the only cost-effective tool available to identify the overall impact of a sectoral activity within an economy.

Considerable effort was directed at choosing the most appropriate multipliers for this report. The consultants have chosen an Alberta-specific, Statistics Canada open multiplier set derived from that agency's 1984 Input-Output Model, under the 'Air Transport & Services Incidentals' category contained in the Make/Use/Demand Matrix, The Input-Output Structure of the Canadian Economy, 1996-97, Statistics Canada, Cat. No 15-201, 2004.

Chapter II

The 2004 Economic Impact of the Calgary International Airport

2.1 Economic Impact of the Air Carrier & Support Services Sector at the Calgary International Airport : 2004

As could be expected, the air carrier sector dominates the economic activity generated by the Calgary airport. The major firms operating within this category include the scheduled and charter airlines, ground and passenger handling firms, airport security screening, food catering, aircraft grooming, maintenance firms, and the re-fuelling consortia.

A total of 29 firms were surveyed, including 19 air carriers. This total does not correspond to the number of carriers serving the Calgary market – the actual total of on-line scheduled and non-scheduled carriers is approaching the 50 mark. The 2004 economic activities of those carriers who do not maintain a physical presence at Calgary is included in the data fields of their respective third-party service providers.

Table 1 depicts the economic impact activity undertaken by the Air Carrier & Support Services sector in 2004.

Table 1.

Air Carrier & Support Services Sector :
2004 Economic Impact
 (in millions, except FTEs)

<i>Direct Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
6983	\$367.286	\$349.237	\$716.523
<i>Total Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
22,625	\$1,134.914	\$658.072	\$1,792.986

For calendar year 2004, a total of 6983 annual full-time equivalent employees can be attributed to the Air Carrier & Support sector operating at the Calgary airport. Their aggregate labour income was identified at \$367.286 million. Other Expenditures for this sector were \$349.237 million. Total direct value-added GDP was \$716.523 million.

When the indirect and induced multipliers are applied to the above direct economic activity, the considerable impact of Calgary's air carrier sector can be realized. Within the Calgary area 22,625 full-time jobs are dependent upon it, generating an annual labour income of \$1,134.914 million. Other Expenditures in this sector was \$658.072 million. In 2004, the total value-added GDP benefit created by air carriers and their support activities at the Calgary airport was \$1,792.986 million.

2.2 Economic Impact of the Airport Terminal Building Concessionaire Sector : 2004

Within the Calgary Airport Terminal Building (ATB), 58 firms were identified as providing services to passengers, visitors, meeters & greeters and other employees of the airport. The number of firms canvassed does not correlate with the number of outlets offering services which, in fact, totals more than 115 throughout the ATB. The totals of this sector are dominated by the car rental firms. Important too are the economic activities of the food and beverage providers, the taxicab & limousine services and a major on-site hotel.

Table 2 depicts the economic impact activity undertaken by the ATB concessionaire sector in 2004.

Table 2.

Airport Terminal Building Concessionaire Sector : 2004 Economic Impact (in millions, except FTEs)

<i>Direct Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
1590	\$40.935	\$110.130	\$151.065
<i>Total Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
5152	\$126.489	\$207.519	\$334.008

For calendar year 2004, a total of 1590 annual full-time equivalent employees can be attributed to the concessionaires operating within the Calgary ATB. Their aggregate labour income was identified at \$40.935 million, lower on average than virtually all other airport workers and reflecting the minimum wage earnings of many workers in this sector. Other Expenditure activities were \$110.130 million. Total direct value-added GDP was \$151.065 million.

When the indirect and induced multipliers are applied to the above direct economic activity, the overall economic impact of the ATB concessionaires can be realized. Within the Calgary area 5152 full-time jobs are dependent upon this sector, generating an annual labour income of \$126.489 million. Other Expenditure activities were \$207.519 million. In 2004, the total value-added GDP activity created by ATB activities was \$334.008 million.

2.3 Economic Impact of the General Aviation Sector at the Calgary International Airport : 2004

The Calgary International Airport supports a diverse general aviation (GA) community. Virtually all of this activity is located on-site at the 'south end' of the airport, with most firms located in either the McCall South or McKnight aviation parks.

GA firms undertake a wide variety of aviation-related activities, including : training; aircraft sales and leasing; and, a variety of specialized aviation support services for both fixed wing and rotary wing aircraft. Aerospace manufacturing is an important contributor to the aviation mix at the Calgary airport, as is a robust third-party maintenance sector specializing in commuter, regional & medium-sized commercial jet aircraft. The Southern Alberta Institute of Technology opened a major training centre on-airport during the year. Table 3 depicts the economic impact activity undertaken by the GA sector in 2004.

Table 3.

General Aviation Sector : 2004 Economic Impact
(in millions, except FTEs)

<i>Direct Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
1432	\$106.873	\$133.579	\$240.452
<i>Total Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
4640	\$330.238	\$251.705	\$581.943

For calendar year 2004, a total of 1432 annual full-time equivalent employees can be attributed to the General Aviation sector operating on the Calgary International Airport. Their aggregate labour income was identified at \$106.873 million. Other Expenditure activities were \$133.579 million. Total direct value-added GDP was \$240.452 million.

When the indirect and induced multipliers are applied to the above direct economic activity, the significant impact of Calgary's GA sector can be realized. Within the Calgary area 4640 full-time jobs are dependent upon GA, generating an annual labour income of \$330.238 million. Other Expenditures activity was \$251.705 million. In 2004, the total value-added GDP activity created by general aviation at the Calgary airport was \$581.943 million.

2.4 Economic Impact of the Air Cargo Sector at the Calgary International Airport : 2004

Calgary's air freight industry continues to display remarkable growth, generating over 120,000 tonnes of freight throughput in 2004 while building an enviable network of direct international and domestic freighter services.

Table 4 depicts the economic impact activity undertaken by the Air Cargo sector in 2004.

Table 4.

Air Cargo Sector : 2004 Economic Impact
(in millions, except FTEs)

<i>Direct Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
1398	\$52.144	\$36.290	\$88.434
<i>Total Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
4530	\$161.125	\$68.382	\$229.507

For calendar year 2004, a total of 1398 annual full-time equivalent employees work on-airport in the Air Cargo and Courier sector. Their aggregate labour income was identified at \$52.144 million. Other Expenditure activities were \$36.290 million. Total value-added GDP was \$88.434 million.

When the indirect and induced multipliers are applied to the above direct economic activity, the overall impact of Calgary's air freight sector can be realized. Within the Calgary area 4530 full-time jobs are dependent upon the on-airport movement of air cargo, courier and mail products, generating an annual labour income of \$161.125

million. Other Expenditure activity was \$68.382 million. In 2004, the total value-added GDP benefit created by air cargo, courier and airmail activities at the Calgary airport was \$229.507 million.

2.5 Economic Impact of the Airport Support & Government Services Sector at the Calgary International Airport : 2004

The fourth largest sub-category contributor to the economic impact of the Calgary airport is the Airport Support & Government Services group. This sector includes the Calgary Airport Authority, its third-party contractors, and all of the government agencies operating on the airport. Included in this later group are the expanded post 9-11 operations of the Canada Border Services Agency alongside their US Customs & Border Patrol counterparts. Also included are : the RCMP, NAV CANADA, Transport & Environment Canada, the Calgary Firefighters and Policing services and a small contingent of Royal Air Force staff.

In total, 21 agencies were canvassed. Table 5 depicts the economic impact activity undertaken by the Airport Support and Government Services sector in 2004.

Table 5.

Airport Support & Government Services Sector :
2004 Economic Impact
 (in millions, except FTEs)

<i>Direct Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
846	\$52.359	\$51.577	\$103.936
<i>Total Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
2741	\$161.789	\$97.187	\$258.976

For calendar year 2004, a total of 846 annual full-time equivalent employees can be attributed to this sector. Their aggregate labour income was identified at \$52.359 million. Other Expenditure activities were \$51.577 million. Total direct value-added GDP was \$103.936 million.

When the indirect and induced multipliers are applied to the above direct economic activity, the significant impact of the airport & government support sector can be realized. Within the Calgary area 2741 full-time jobs are dependent upon it, generating an annual labour income of \$161.789 million. Other Expenditure activity was \$97.187 million. In 2004, the total value-added GDP activity created by the airport support and government services sector was \$258.976 million.

2.6 Economic Impact of the Corporate Aviation Sector at the Calgary International Airport : 2004

Calgary and Alberta support an active corporate aviation sector - which should not be surprising given the large number of head offices, and in particular, the number of oil and gas natural resource companies based in the city. Supporting the multi-billion dollar annual activities of these firms are 17 corporate flight departments; of note, has been the steady growth of the larger charter operators and those fractional ownership firms operating at the airport.

All of the flight departments are co-located with the GA community in either the McCall South or McKnight aviation parks, with all requiring airside access.

Table 6 depicts the economic impact activity undertaken by the Corporate Aviation sector in 2004.

Table 6.

Corporate Aviation Sector : 2004 Economic Impact (in millions, except FTEs)

<i>Direct Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
331	\$19.193	\$27.088	\$46.281
<i>Total Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
1072	\$59.306	\$51.042	\$110.348

For calendar year 2004, 331 annual full-time equivalent employees can be attributed to the Corporate Aviation sector operating on the Calgary International Airport. Their aggregate labour income was identified at \$19.193 million. Other Expenditure activities were \$27.088 million. Total direct value-added GDP was \$46.281 million.

When the indirect and induced multipliers are applied to the above direct economic activity, the significant impact of Calgary's corporate sector can be realized. Within the Calgary area 1072 full-time jobs are dependent upon corporate aviation, generating an annual labour income of \$59.306 million. Other value-added GDP activity was \$51.042 million. In 2004, the total value-added GDP activity created by corporate aviation at the Calgary airport was \$110.348 million.

2.7 Economic Impact of the On-Airport, Non-Aviation Sector at the Calgary International Airport : 2004

The attractiveness of the location of the Calgary airport near the growing NE industrial parks of the city is reflected in the growing importance of the On-Airport, Non-Aviation sector. Some 24 firms are now included in this sub-group, ranging from smaller enterprises located throughout the McCall South and McKnight aviation parks to much larger distribution-related entities located in the newly developed lands accessed from 11 St and Deerfoot Trail. The Airport Corporate Centre linked to the ATB also houses a number of non-aviation firms.

Table 7 depicts the economic impact activity identified in the On-Airport, Non-Aviation sector in 2004.

Table 7.

On-Airport, Non-Aviation Sector : 2004 Economic Impact
 (in millions, except FTEs)

<i>Direct Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
505	\$27.397	\$129.540	\$156.937
<i>Total Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
1636	\$84.657	\$244.094	\$328.751

For calendar year 2004, a total of 505 annual full-time equivalent employees can be attributed to the On-Airport, Non-Aviation sector. Their aggregate labour income was identified at \$27.397 million. Other Expenditure activities were \$129.540 million. Total direct value-added GDP was \$156.937 million.

When the indirect and induced multipliers are applied to the above direct economic activity, the significant impact of the On-Airport, Non-Aviation sector can be realized. Within the Calgary area 1636 full-time jobs are dependent upon it, generating an annual labour income of \$84.657 million. Other value-added GDP activity was \$244.094 million. In 2004, the total value-added GDP activity created by the sector at the Calgary airport was \$328.751 million.

2.8 Economic Impact generated by Airport Visitor Spending in the Calgary area : 2004

Spending by visitors travelling by air to the Calgary area is an important contribution to the overall economic impact of the airport. Visitors by air are defined as business visitors, tourists and visiting-friends-and-relatives traffic (VFR). A sub-set of visitor spending are the expenditures made by cockpit and cabin crews of air carriers who overnight or 'lay-over' at hotels within the Calgary area for operational or crew rest reasons; additionally, passengers who have been delayed and require overnight accommodation have also been considered in the 'overnight expenses' category.

In attempting to capture the impact attributable to this sector, the consultants have chosen the Conference Board of Canada's Tourism Economic Assessment Model [TEAM]. The TEAM model is a sophisticated, computer-based econometric tool designed to assess the impact of non-resident spending upon a local or provincial economy. For this initiative, it is fortunate that a purposefully-constructed TEAM model has been created for the Calgary market by the Canadian Tourism Research Institute - a sub-agency of the Conference Board and the developers of the model, to reflect the unique structure of the Calgary economy and its catchment area.

Thus it is with confidence that the results of the TEAM model, which attributes the economic impact associated with non-resident passenger spending patterns in the Calgary area, are presented and integrated into the overall study results.

From Table 8 an input total of \$677.201 million of non-resident visitor/overnight aircrew & passenger spending was entered into the TEAM model utilizing Tourism Calgary-derived average length of stay and per diem rates for business/pleasure/VFR travellers for each visitor category. The model produced the results displayed in Table 8.

Table 8.

**Spending in the Calgary area by Non-Resident
Visitors arriving by Air : 2004**

<u>Non-resident Visitors</u>	<u>2004 Visitor Totals</u> [†]	<u>Total Spending</u> ^{††}
Domestic visitors	998,000	\$366,113,000
Transborder visitors	340,000	\$117,866,000
International visitors	360,000	\$188,022,000
Flightcrew/Pax overnight expenses ^{†††}		<u>\$5,200,000</u>
	Total	\$677,201,000

[†] Calgary Airport Authority.

^{††} Tourism Calgary.

^{†††} RP Erickson & Associates.

Note: This spending is attributable to passengers arriving at the Calgary airport in 2004; an unknown number of these visitors likely continue beyond the immediate Calgary market, including the mountain parks, Edmonton and beyond. It is safe to assume that a significant proportion of this spending finds its way into the southern Alberta economy but the exact figure is unknown.

Table 9 depicts the economic impact attributable to non-resident, airport visitor spending in the Calgary area in 2004.

Table 9.

**Spending in the Calgary area by Non-Resident
Visitors arriving by Air : 2004 Economic Impact**
(in millions, except FTEs)

<i>Direct Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
10,768	\$209.901	\$301.369	\$511.270
<i>Total Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
15,145	\$389.426	\$658.013	\$1,056.439

For calendar year 2004, a total of 10,768 annual full-time equivalent employees can be attributed to non-resident, airport visitor spending. The aggregate labour income was identified at \$209.901 million. Other Expenditure activities were \$301.369 million. Total direct value-added GDP was \$511.270 million.

When the TEAM-generated multipliers are applied to the above direct economic activity, the significant impact of non-resident, airport visitor spending can be realized. This spending generated 15,145 full-time jobs, generating an annual labour income of \$389.426 million. Other Expenditure activity was \$658.013 million. In 2004, the total value-added GDP activity created by this sector on the provincial economy was \$1,056.439 million.

2.9 The 'One-Time' Economic Impact of New Construction at the Calgary International Airport : 2004

The 'one-time' impact of the economic contribution accompanying capital spending on the airport is consequential. Capital spending arises from the Airport Authority's capital construction program alongside a range of tenant facility new construction and/or expansion projects. This capital investment has provided work for the local construction sector : economic activity which would not have otherwise occurred.

From the questionnaire survey, in 2004 \$135.268 million of new capital construction on the Calgary airport was identified. The Authority's on-going terminal development and expansion program accounted for some 60 percent of this total. In assessing the economic impact of this 'one-time' activity for 2004, the consultants have utilized the 'Alberta Industry Intensity Ratios for Construction' produced by the provincial government (Alberta Industry Multipliers, Department of Statistics, Alberta Finance, (revised September, 2004).

Table 10 depicts the 'one-time' economic impact activity associated with capital spending on the Calgary airport in 2004.

Table 10.

**One-Time, Impacts of New Construction at the Calgary International
Airport : 2004 Economic Impact**
(in millions, except FTEs)

<i>Direct Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
839	\$39.620	\$56.356	\$95.976
<i>Total Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
1610	\$78.455	\$111.596	\$190.051

For calendar year 2004, a total of 839 annual full-time equivalent employees can be attributed to on-airport capital construction spending. The aggregate labour income was identified at \$39.620 million. Other Expenditure activities were \$56.356 million. Total direct value-added GDP was \$95.976 million.

When the indirect and induced multipliers are applied, 'new' on-airport construction spending generated 1610 full-time jobs, creating an annual labour income of \$78.455 million. Other Expenditure activity was \$111.596 million. In 2004, the total value-added GDP activity created by this sector was \$190.051 million.

2.10 The Aggregate Economic Impact of the Calgary International Airport : 2004

At the Calgary International Airport, some 335 commercial firms or government agencies were interviewed and their 2004 economic activities assessed. Additionally, the impact of non-resident visitor spending in the Calgary area and the economic benefits associated with 'one-time' capital construction expenditures for 2004 have been combined with the data in Sections 2.1 through 2.9 to produce Table 11.

Table 11 depicts the aggregate economic impact of the Calgary International Airport upon the Calgary area for 2004.

Table 11.

Aggregate Economic Impact of the Calgary International Airport : 2004 (in millions, except FTEs)

<i>Direct Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
24,692	\$915.708	\$1,195.166	\$2,110.874
<i>Total Impact</i>			
<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
59,151	\$2,535.399	\$2,347.610	\$4,883.009

For calendar year 2004, a total of 24,692 annual full-time equivalent employees can be attributed to the Calgary International Airport; it is noted that within this total – 12,546

full time jobs are located on the airport. The aggregate labour income of this workforce was identified at \$915.708 million. Other Expenditure activity was \$1,195.166 million. Total direct value-added GDP located on the Calgary International Airport was \$2,110.874 million.

When the indirect and induced multipliers are applied to the above direct economic activity, the consequential impact of the airport is realized. The airport creates some 59,151 full-time jobs, generating an annual labour income of \$2,535.399 million. Other Expenditure activity was \$2,347.610 million. In 2004, the total value-added GDP activity created by the Calgary airport was \$4,883.009 million.

2.11 Discussion

In addition to providing over 59,000 full-time jobs, the Calgary International Airport's contribution to total GDP of the Calgary area was \$4.89 billion. This amounted to roughly 10 percent of Calgary's 2004 GDP of \$49.29 billion¹.

The distribution of the Economic Impact by sub-category is presented in Table 12. Not surprisingly for an airport, the Air Carrier & Support Services segment leads the various categories followed by the benefits attached to Non-resident Spending. The Table corresponds with its 2001 counterpart suggesting that growth within the airport continues to be fairly evenly spread amongst the 9 sub-groups.

¹ Economic Report, City of Calgary, 2004.

Table 12.

Distribution of Economic Impacts

On a percentage basis by sub-category, the economic benefits of the airport are distributed :

	<u>FTEs</u>	<u>Labour Income</u>	<u>Other Expenditures</u>	<u>Total Value added GDP</u>
Air Carriers	38%	45%	28%	37%
ATB Concessionaires	9%	5%	9%	6%
General Aviation	8%	13%	11%	12%
Air Cargo	8%	6%	3%	5%
Airport & Gov't	4%	6%	4%	5%
Corporate Aviation	2%	2%	2%	2%
On-Airport, Non-Aviation	3%	3%	10%	7%
Non-resident Spending	26%	16%	28%	22%
'One-time' Construction	3%	3%	5%	4%

When the economic impact totals are compared against Calgary's 2004 enplaned and deplaned [E&D] passenger movement data (9.17 million), the results provide some interesting generalities.

Within the Calgary area ² :

Each 1000 E&D passengers supports 6.5 full time jobs.

Each 1000 E&D passengers supports \$276,000 of annual labour income.

Each 1000 E&D passengers supports \$533,000 of total GDP activity.

* * * * *

Each time an A340 lands, it supports 1.82 FTEs;

\$77,000 of annual labour income; and \$149,000 of GDP activity.

Each time a B757 lands, it supports 1.50 FTEs;
\$64,000 of annual labour income; and \$123,000 of GDP activity.

Each time an A319 or B737 lands, it supports 0.65 FTEs;
\$28,000 of annual labour income; and \$53,000 of GDP activity.

* * * * *

A new daily B747-400 service linking Calgary to Asia
would support annual benefits of :
700 FTEs; \$30 million of labour income; and, \$58 million of total GDP activity.

A new daily A330 service linking Calgary to Europe
would support annual benefits of :
450 FTEs; \$19 million of labour income; and, \$37 million of total GDP activity.

A new daily B737-700 service linking Calgary to a US transborder destination
would support annual benefits of :
230 FTEs; \$10 million of labour income; and, \$19 million of total GDP activity.

In addition to the quantifiable economic benefits displayed in this report, the Calgary International Airport provides a wide range of ancillary, qualitative benefits to residents of the Calgary area and the province as a whole. These range from the societal advantages attached to the travel, tourism and transportation functions of the airport, through expansive career and hobby development possibilities to opportunities for volunteerism. The Calgary airport also provides access for air-related environmental and emergency response services; none more importantly than in providing all Albertans with air access to Calgary's extensive health care resources.

Volunteerism - 2004

² See Appendix IV for a methodology for the above data.

The Calgary 'Whitehatters' assist visitors and passengers using the ATB, and in the process provided 39,650 hours of volunteer opportunity to 225 individuals over the year. The Calgary Aerospace Museum identified over 21,000 hours of volunteerism for some 115 of its members. The Calgary Convention & Visitors' Bureau 'employed' 10 volunteers at its airport information counter; and, the Aviation Interfaith Ministry noted 1200 hours of volunteerism from 6 of its members over the year.

2.12 Conclusions

In 2004, the Calgary International Airport supported a considerable level of economic activity, primarily in the Calgary area but also throughout the province and, to a lesser extent, the national economy.

In direct terms, the airport :

- contributed nearly 25,000 full-time jobs;
- generated nearly \$1 billion in labour income; and,
- created over \$2.1 billion in total value-added GDP activity.

When indirect and induced forms of economic activity are included, the airport generates :

- over 59,000 full-time jobs;
- over \$2.5 billion in annual labour income; and,
- nearly \$5 billion dollars of total GDP activity.

APPENDIX I

SURVEY QUESTIONNAIRE

SURVEY QUESTIONNAIRE

SURVEY OF THE ECONOMIC SIGNIFICANCE OF THE CALGARY INTERNATIONAL AIRPORT

Please complete this survey using data for calendar year 2004 or for your most recent fiscal year. All data will be treated in strict confidence and will not be released in a disaggregated form to any individual or agency. Only aggregate industry data will be included in the final report.

Please answer the questions as completely as you can. If you are not entirely certain of an answer, please give your best estimate - your estimate will surpass by far our best guess in accuracy.

Feel free to direct any questions pertaining to this questionnaire or our study to either :

RP Erickson & Associates
Aviation Consultants
Calgary, Alberta
Tel. (403) 241-9633

Mr. Garth Atkinson
President & CEO
Calgary Airport Authority
Tel. (403) 735-1244

PLEASE FAX RESPONSE TO :
Fax. (403) 241-8696

Section A: General Information

- (i) Name of firm, a contact person, and telephone number.

- (ii) Please circle the classification that best describe your firm's activities.

Scheduled Air Carrier

Airport Terminal Concessionaire

General Aviation

Corporate Aviation

Government Agency

Cargo or Express

On airport, non-aviation services

Other _____

Section B: Employment & Expenditures - 2004

We are seeking the impact from that portion of your firm’s business activity which pertains to the presence of the Calgary International Airport. Please round all financial data to the nearest \$’000.

Employment & Labour Expense - 2004

- (i) Number of employees working for your firm. Please estimate in full-time equivalents [eg., 1 part-time worker @ 20 hrs/week = 0.5 full-time employee].

- (ii) Total annual payroll expense for all employees including wages or salaries, plus all employee benefits.

\$ _____

Expenditures for Goods & Services - 2004

- (i) Total operating expenditures for goods and services, but not including wages or salaries, and employee benefits.

\$ _____

Capital Expenditures (New Construction) - 2004

- (i) Total capital expenditures for building construction.

\$ _____

Section C: General Comments

Any comments you might like to add as to the value of the Calgary International Airport to the community and/or its economic impact upon the local economy.

Additional comments may be added to the back of the questionnaire

APPENDIX II

DATA BREAKDOWN

Direct Impact

	<u>FTEs</u>	<u>Labour Income</u>	<u>Other Exp'tures</u>	<u>Total Value added GDP</u>
Air Carriers & Support Services	6983	\$367.286	\$349.237	\$716.523
ATB Concessionaires	1590	\$40.935	\$110.130	\$151.065
General Aviation	1432	\$106.873	\$133.579	\$240.452
Air Cargo	1398	\$52.144	\$36.290	\$88.434
Airport Support & Gov't Services	846	\$52.359	\$51.577	\$103.936
Corporate Aviation	331	\$19.193	\$27.088	\$46.281
On-Airport, Non-Aviation	505	\$27.397	\$129.540	\$156.937
Non-resident Spending	10,768	\$209.901	\$301.369	\$511.270
'One-Time' New Construction	<u>839</u>	<u>\$39.620</u>	<u>\$56.356</u>	<u>\$95.976</u>
Totals	24,692	\$915.708	\$1,195.166	\$2,110.874

(in millions, except FTEs)

Total Impact

	<u>FTEs</u>	<u>Labour Income</u>	<u>Other Exp'tures</u>	<u>Total Value added GDP</u>
Air Carriers & Support Services	22,625	\$1,134.914	\$658.072	\$1,792.986
ATB Concessionaires	5152	\$126.489	\$207.519	\$334.008
General Aviation	4640	\$330.238	\$251.705	\$581.943
Air Cargo	4530	\$161.125	\$68.382	\$229.507
Airport Support & Gov't Services	2741	\$161.789	\$97.187	\$258.976
Corporate Aviation	1072	\$59.306	\$51.042	\$110.348
On-Airport, Non-Aviation	1636	\$84.657	\$244.094	\$328.751
Non-resident Spending	15,145	\$398.426	\$658.013	\$1,056.439
'One-time New Construction	<u>1610</u>	<u>\$78.455</u>	<u>\$111.596</u>	<u>\$190.051</u>
Totals	59,151	\$2,535.399	\$2,347.610	\$4,883.009

(in millions, except FTEs)

The above direct data was collated from the survey questionnaire : as detailed in Section 1.3, with the exception of the Non-resident Spending category which was derived from the TEAM econometric model as explained in Section 2.9; and, 'One-Time' New Construction Spending on the Calgary International Airport, as discussed in Section 2.10.

APPENDIX III

GENERALITIES METHODOLOGY

Each 1000 E&D passengers creates 6.5 full time jobs.
(59,151 FTEs ÷ 9.17 million annual E&D passengers x 1000)

Each 1000 E&D passengers creates \$276,000 of annual labour income.
(\$2.535 billion annual labour income ÷ 9.17 million annual E&D passengers x1000)

Each 1000 E&D passengers creates \$533,000 of GDP activity.
(\$4.883 billion total GDP ÷ 9.17 million annual E&D passengers x 1000)

**Each time an A340 lands, it generates 1.82 FTEs;
\$77,000 of annual labour income; and \$149,000 of GDP activity.**
(A340 at 284 seats or a multiple of .28 applied against
the 1000 E&D passenger data set)

**Each time a B757 lands, it generates 1.50 FTEs;
\$64,000 of annual labour income; and \$123,000 of GDP activity.**
(B757 at 228 seats or a multiple of .23 applied against
the 1000 E&D passenger data set)

**Each time an A319 or B737 lands, it generates 0.65 FTEs;
\$28,000 of annual labour income; and \$53,000 of GDP activity.**
(A319/B737 at 100 seats or a multiple of .10 applied against
the 1000 E&D passenger data set)

In arriving at the estimates for new daily services, the following multiples were applied to the 1000 E&D passenger data set for full-time jobs, annual labour income and GDP activity :

B747-400 at 425 passengers x 365 days at 70 percent load factor = 108,600
annual passengers a multiple of 108.6

A330 at 272 passengers x 365 days at 70 percent load factor = 69,500 annual
passengers a multiple of 69.5.

B737-700 at 140 passengers x 365 days at 70 percent load factor = 35,800
annual passengers a multiple of 35.8

APPENDIX IV

THE TAX IMPACTS OF THE CALGARY AIRPORT

The Tax Impacts of the Calgary Airport

Introduction

Econometric Research Limited is retained by the Calgary Airport Authority to estimate the tax impacts of several aviation activities, a one time capital expenditure and ATB Concessionaires, separately and collectively in order to identify the total sustainable impacts of the Calgary Airport on the federal, provincial and local treasuries in 2004.

The impact model used to estimate the tax impacts is a special application of a generic model (DEIM: Alberta) developed by Econometric Research Limited. It is a unique model that captures the economic impact of program or activity expenditures at the local level (counties or economic regions), the provincial level (Alberta) and the national level. The model is based on a novel technology that integrates input-output analysis and location theory. The system has already been applied to the study of The Economic Impact of Tourism in Banff, The Economic Impact of West Edmonton Mall, The Economic Impact of Power Generation in Alberta and several tourism and community projects identified by Alberta Economic Development. The model was reviewed and approved by Alberta Finance.

The model utilizes a large set of economic and technical databases that are regularly published by Statistics Canada. A short list includes the inter-provincial input-output tables, employment by sector, taxes by type of tax and the level of government collecting it, prices of products, energy used in physical and energy units, etc.

The DEIM system generates a large number of taxes (income taxes, GST, liquor and tobacco taxes, property taxes, etc.) each of which is linked with the level of government receiving it. For example, the Federal government receives the proceeds from the GST tax, the Provincial government receives the Indirect Business Taxes and the Local government receives both Property and Business taxes.

The Results

The presentation of results is organized as follows. We first present the tax impacts of aviation activities in Table 1. These include the sum of the impacts of Air Carriers & Support Services, General Aviation, Air Cargo, Air Support and Government Services, Corporate Aviation and On-Airport, Non-Aviation. In Table 2 we present the estimated tax impacts of ATB Concessionaires. The total Aviation and ATB Concessionaires' tax impacts add up to a recurrent annual tax impact. These tax impacts are presented in Table 3 as the Sustainable tax impacts. In Table 4 we present the one time capital tax impacts. These are non-recurrent tax impacts, but when added to the sustainable impacts they sum up to the

total tax impacts of the Calgary Airport in 2004. All of the tax impact results are in millions of 2004 dollars.

Invariably the three levels of government derive substantial revenues on the different impacts but particularly on the Aviation impacts. The Federal government alone derives annual tax revenues of about \$403 million on these impacts, whereas the provincial government derives a total of \$191 million. The Local governments in Alberta collect about \$78 million annually on these impacts. A total of \$672 million could be expected to be collected annually on the aviation impacts alone of the Calgary Airport. The largest contributions are made by Personal Income Taxes (PIT) and the GST. The Local governments collect revenue on the employment income sustained by the airport and which is capitalized into property values and also on business activities supported by the new incomes sustained by the airport economic activities.

Table 1
Tax Impacts of Aviation
(in Millions of 2004 \$)

	Federal	Provincial	Local	Total
Personal Income Tax	\$219	\$110		\$329
Indirect Business Tax		\$42		\$42
Goods & Services Tax	\$105			\$105
Corporate Profit Taxes	\$22	\$15		\$37
Property & Bus. Tax			\$78	\$78
Tobacco & Liquor Tax		\$11		\$11
Employment Insurance	\$57			\$57
Workmans Comp.		\$13		\$13
Total	\$403	\$191	\$78	\$672

Source: Econometric Research Limited

The total tax impacts of ATB Concessionaires exceeds \$63 million and shows a few distinguishing features that are unique to its operations such as the high proportion of GST, property and business taxes and Liquor and Tobacco taxes in total taxes collected on these impacts (Table 2). In general, the federal government derives the lion's share with \$32 million, followed by the provincial government with a share of \$17 million and local governments in Alberta collectively sharing a total of \$14 million.

Sustainable taxes (Table 3) are substantial and significant with a total of \$735 million in annual revenues for the three levels of government on the recurrent impacts of the Calgary Airport. Not surprisingly but quite meaningfully a hefty share of these revenues will go to the federal government with over \$435 million or about 60% of the total. This is heavily influenced by the aviation impacts that tend to generate relatively large labour income and therefore high PITs as well as large GST revenue, both of which boost the share of the federal government.

Table 2
Tax Impacts of ATB Concessionaires
(in Millions of 2004 \$)

	Federal	Provincial	Local	Total
Personal Income Tax	\$12	\$6		\$18
Indirect Business Tax		\$5		\$5
Goods & Services Tax	\$11			\$11
Corporate Profit Taxes	\$3	\$2		\$5
Property & Bus. Tax			\$14	\$14
Tobacco & Liquor Tax		\$3		\$3
Employment Insurance	\$6			\$6
Workmans Comp.		\$1		\$1
Total	\$32	\$17	\$14	\$63

Table 3
Sustainable Tax Impacts
(in Millions of 2004 \$)

	Federal	Provincial	Local	Total
Personal Income Tax	\$231	\$116		\$347
Indirect Business Tax		\$47		\$47
Goods & Services Tax	\$116			\$116
Corporate Profit Taxes	\$25	\$17		\$42
Property & Bus. Tax			\$92	\$92
Tobacco & Liquor Tax		\$14		\$14
Employment Insurance	\$63			\$63
Workmans Comp.		\$14		\$14
Total	\$435	\$208	\$92	\$735

Source: Econometric Research Limited

Capital expenditures are non-recurrent and therefore do not qualify as sustainable tax revenue generators. Their impacts are large and lumpy but can not be expected year in and year out. This is why the tax impacts of these expenditures are segregated in Table 4. They add up to \$78 million (Table 4). In 2004, the three levels of government were able to realize an estimated total tax revenue of about \$813 million (Table 5). This total represents a major source of revenues for all governments but particularly the federal government on the operations and activities of the Calgary Airport. With over \$479 million in revenue, the federal government is a major beneficiary from the airport and should therefore be expected to shoulder a commensurate responsibility.

Table 4
Tax Impacts of Capital Expenditures
(in Millions of 2004 \$)

	Federal	Provincial	Local	Total
Personal Income Tax	\$14	\$7		\$21
Indirect Business Tax		\$6		\$6
Goods & Services Tax	\$16			\$16
Corporate Profit Taxes	\$5	\$4		\$9
Property & Bus. Tax			\$13	\$13
Tobacco & Liquor Tax		\$2		\$2
Employment Insurance	\$9			\$9
Workmans Comp.		\$2		\$2
Total	\$44	\$21	\$13	\$78

Source: Econometric Research Limited

Table 5
Total Tax Impacts
(in Millions of 2004 \$)

	Federal	Provincial	Local	Total
Personal Income Tax	\$245	\$123		\$368
Indirect Business Tax		\$53		\$53
Goods & Services Tax	\$132			\$132
Corporate Profit Taxes	\$30	\$21		\$51
Property & Bus. Tax			\$105	\$105
Tobacco & Liquor Tax		\$16		\$16
Employment Insurance	\$72			\$72
Workmans Comp.		\$16		\$16
Total	\$479	\$229	\$105	\$813

Source: Econometric Research Limited