2017 Economic Impact Study

April 2018

CONTACT

Tony Fisher
Paradigm Consulting Group
tony.fisher@paradigmconsultinggroup.ca

CONTENTS

Summary: Halifax Halifax Pop Explosion

The Halifax Pop Explosion is an annual festival that presents 150 artist, comedians and speakers in more than 15 venues over 4 days across Halifax. The festival runs in conjunction with a 3 day music industry conference. The 2017 Halifax Pop Explosion was the 25th edition of the event and ran from October 18-21 and attracted 15,000 music fans along with hundreds of delegates.

The combined spending of out of town music fans and conference delegates in combination with the expenditures made by the organizers of the Halifax Pop Explosion totaled $995,000, supporting $1.4 million in economic activity in Nova Scotia including $1.3 million in economic activity in Halifax. These expenditures supported $570,000 in wages and salaries in the province through the support of 8.8 jobs[2], of which 7.1 jobs and $471,000 in wages and salaries were supported in Halifax. The total net economic activity (GDP) generated by the event was $914,000 for Canada as a whole; $826,000 for Nova Scotia and $642,000 in Halifax.

Considerable tax revenues were also produced by the 2017 Halifax Pop Explosion, totaling $304,000. The event supported federal government tax revenues of $127,000 with provincial taxes of $144,000 accruing to the Province of Nova Scotia. Moreover, $20,800 in municipal taxes were supported in Nova Scotia municipalities, of which $15,300 was in Halifax.

2017 Halifax Pop Explosion by the Numbers

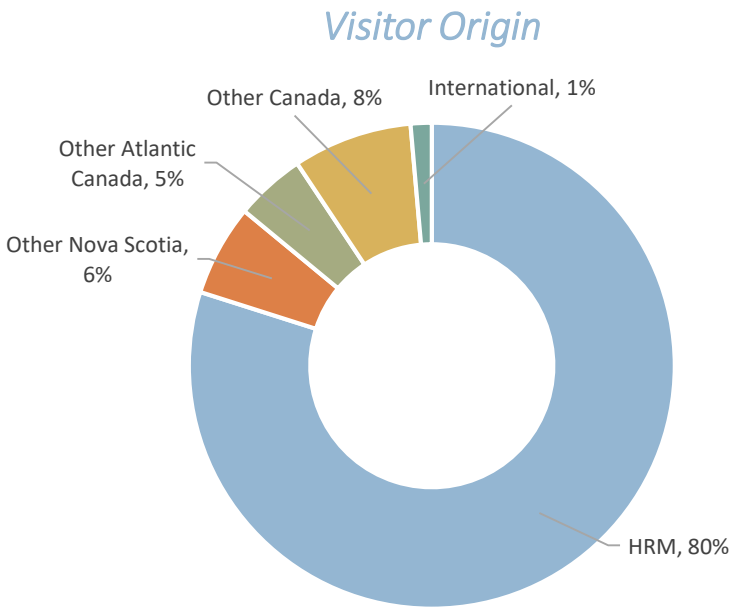
15,000 attendance	$431,000 in visitor spending directly attributable to the Halifax Pop Explosion	9 Halifax jobs supported by the Halifax Pop Explosion	$1.4 million economic activity supported in Nova Scotia
101 industry delegates	6,511 individuals attending shows for an average 2.3 days	$826,000 boost to Nova Scotia's GDP	$304,000 in taxes supported across Canada

Methodology

The visitor statistics used in this study were derived from two surveys. Music fans were surveyed on-site using Samsung tablet computers running electronic survey software. A total of 218 parties completed the on-site survey,[1] which asked a variety of questions regarding the origin of attendees, their opinions of the event along with the number of days they were attending the festival. Out of town respondents to the survey also asked their expenditures while in Halifax. Industry delegates were emailed a post event survey asking questions about their visit along with their satisfaction with the conference. Only 25 surveys were collected from industry delegates, however all of the responses were from out of town visitors. The surveys were developed and programmed by Paradigm Consulting Group in consultation with Tourism Nova Scotia and the event organizers

Visitor Origin

The origin of Halifax Pop Explosion attendees was based on the incidence observed in the on-site survey, which found that the majority of respondents were HRM residents (80%).



[1] The total of 468 responses to the survey representing 1,489 people out of a total of 21,868 individuals gives a statistically valid confidence interval of +/- 2.5%, 19 times in 20 for responses representing all attendees.

Attendance & Visitor Volume

Attendance

The total number of unique individuals at the 2017 Halifax Pop Explosion was calculated by dividing the total attendance figure provided by the event organizers by the average number of days that fans attended the event. There was no statistically significant difference in the number of days attended between local respondents and out of town visitors, both groups indicated they went to HPX events for an average of 2.3 days. Dividing the total attendance of 15,000 by the average days attended shows that there were 6,511 people who went to Pop Explosion shows, of which 1,308 were out of town visitors.

	Origin (%)	Attendance	Individuals
Halifax *(under 40km)*	80%	11,986	5,203
Nova Scotia	6%	911	396
Atlantic Canada	5%	701	304
Long distance	9%	1,402	608
Total	**100%**	**15,000**	**6,511**
Visitors	*20%*	*3,014*	*1,308*

Information Sources for Out of Province Visitors

The survey found that 13% of out of province respondents were first time visitors to Nova Scotia. Out of province visitors mainly visited the event website for information before coming to Nova Scotia.

Information Sources	
Event Website (halfiaxpopexplosion.com)	64%
www.novascotia.com	11%
www.explorenovascotia.com	4%
www.tripadvisor.ca	0%
www.novascotiatourismagency.ca	0%
Did not visit a website	25%
Other	14%

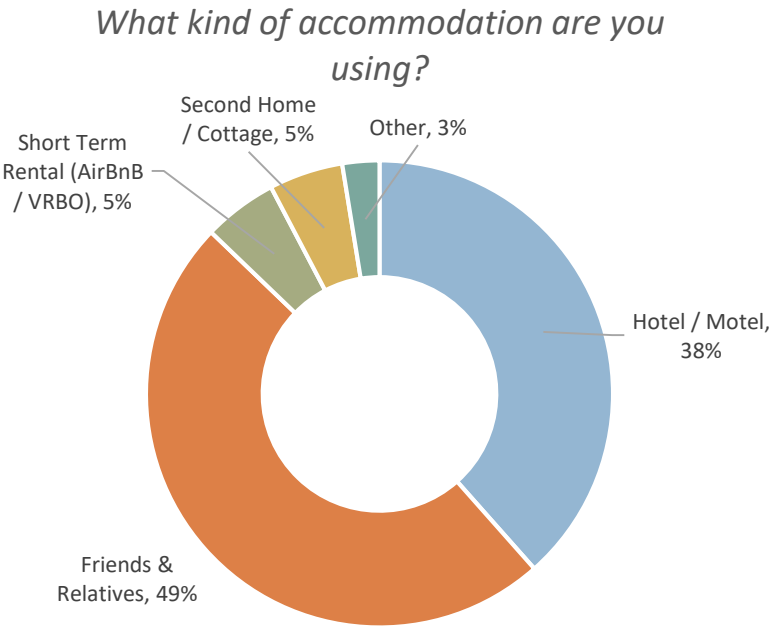
Visitor Information

Nights in Region

The survey found that almost all visitors to the Halifax Pop Explosion stayed overnight in the Halifax region (91%). Based on the size of sample collected, visitors were divided into two categories: Nova Scotia visitors and out of province visitors. The typical Nova Scotia visitor spent 2.5 night in Halifax while out of province visitors spent an average of 9.5 nights in the region. Note that the average length of stay is quite high as 17% of respondents were in Halifax for more than 30 nights. For those in Halifax for less than 30 nights, the average length of stay was 2.8 nights.

Accommodation Use

Almost half of overnight visitors stayed with friends & family, followed by commercial accommodation, short term rentals or staying in a second home.



Visitor Spending – Per Person

Based on the sample size collected, out of town visitors were divided into two categories: Nova Scotia and out of province. The typical Nova Scotia traveller spent $125 per person or $403 per party while out of town visitors spent quite a bit more with a total of $418 per person or $1,226 per party.

	Nova Scotia	Out of Province	Average
Average Party Size	*3.2*	*2.9*	*2.9*
Average Nights	*2.5*	*9.5*	*9.2*
Accommodation	$26.48	$86.62	$84.17
Restaurants & Bars	$53.99	$118.35	$115.73
Other Food & Beverages	$4.13	$60.88	$58.57
Recreation & Entertainment	$5.16	$20.24	$19.63
Shopping	$17.54	$71.10	$68.92
Transportation Expenses	$7.05	$44.12	$42.61
Other Expenses	$10.32	$17.13	$16.85
Total	**$124.67**	**$418.43**	**$406.48**

Visitor Spending – Total

Combining the visitor spending with the attendance figures shows that out of town visitors to the Halifax Pop Explosion spent $431,000 in Halifax during their visit.

	Nova Scotia	Out of Province	Total
Visitors	*396*	*912*	*1,308*
Accommodation	$10,487	$78,998	$89,485
Off-site Restaurants	$21,382	$107,934	$129,316
Other Food & Beverages	$1,634	$55,521	$57,156
Recreation & Entertainment	$2,043	$18,462	$20,505
Shopping	$6,946	$64,841	$71,787
Transportation Expenses	$2,792	$40,234	$43,026
Other Expenses	$4,086	$15,620	$19,706
Total	**$49,369**	**$381,611**	**$430,980**

Visitor Spending – Attributable

As a final step, visitors were asked if they were aware that the Halifax Pop Explosion was taking place before they left home. If they were aware of the event, they were asked about the importance of the event in their decision to travel using a scale of 1-10. These scores were used to calculate the amount of money spent in Halifax that was directly attributable to the event, with respondents giving a score of 10 having all of their spending attributed to the event, a score of 9 had 90% of spending attributed, etc. Overall, Nova Scotia visitors gave an average importance score of 9.1 and out of province visitors gave an average score of 8.7. The overall visitor spending directly attributable to hosting the 25th Halifax Pop Explosion was $375,000.

	Nova Scotia	Out of Province	Total
Importance	*9.1*	*8.7*	*8.7*
Accommodation	$9,525	$68,364	$77,889
Off-site Restaurants	$19,422	$93,405	$112,826
Other Food & Beverages	$1,484	$48,047	$49,532
Recreation & Entertainment	$1,856	$15,977	$17,832
Shopping	$6,309	$56,112	$62,421
Transportation Expenses	$2,536	$34,818	$37,354
Other Expenses	$3,711	$13,517	$17,228
Total	**$44,844**	**$330,240**	**$375,084**

Halifax Pop Explosion Conference

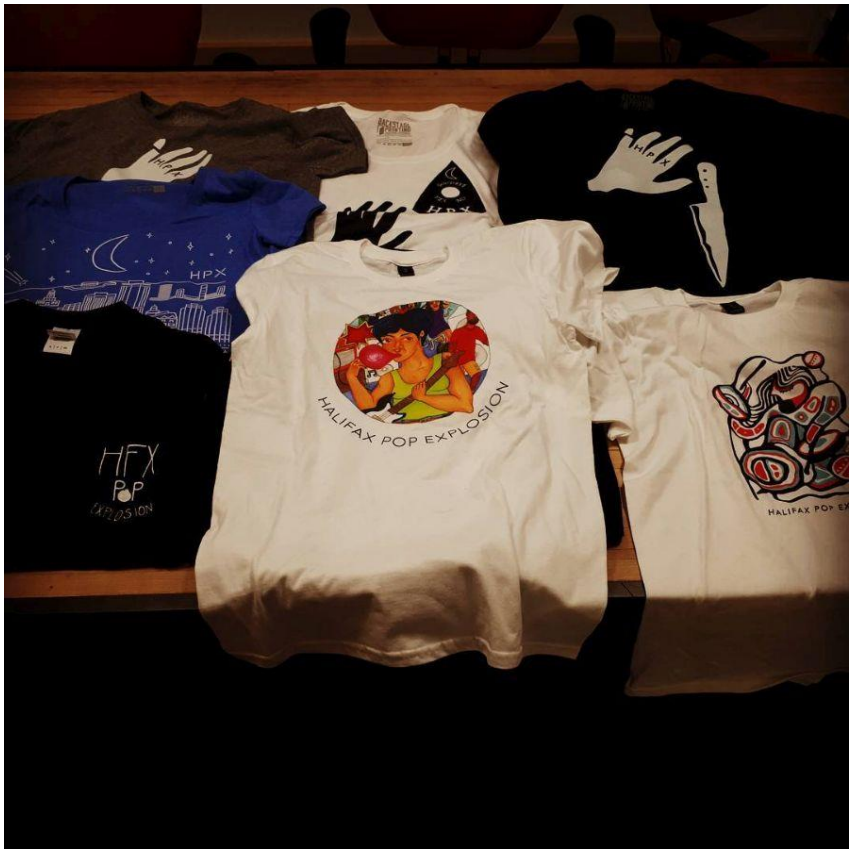
The Halifax Pop Explosion also includes a conference component targeted to the intersection between community and music. The 2017 Halifax Pop Explosion had 4 streams: XPAND, Label Summit, Sync Summit and Mentor Café. There were 78 registered Canadian delegates in 2017 along with 31 international delegates. More than 2/3 of the Canadian delegates were from out of province. In addition, the conference attracted approximately 120 delegates to events where registration wasn't required. The spending of out of town registered delegates has also been included in the study.

Halifax Pop Explosion– Operational Expenditures

OPERATIONAL SPENDING

The organizers of the Halifax Pop Explosion invested significantly in producing and hosting the festival. The largest cost associated with the event was production costs associated with the entertainment, followed by production of the event, rental of the facilities, advertising, supporting the volunteers and logistical supplies and other expenses associated with running the event such as insurance and office supplies. In addition, the operational budget includes the costs associated with hosting the Halifax Pop Explosion Conference.

In addition to the operational expenditures, the Halifax Pop Explosion has was supported by hundreds of volunteers, with their efforts being critical to the success of the festival.



Economic Impact Results

The combined spending of out of town music fans and conference delegates in combination with the expenditures made by the organizers of the Halifax Pop Explosion totaled $995,000, supporting $1.4 million in economic activity in Nova Scotia including $1.3 million in economic activity in Halifax. These expenditures supported $570,000 in wages and salaries in the province through the support of 8.8 jobs[2], of which 7.1 jobs and $471,000 in wages and salaries were supported in Halifax. The total net economic activity (GDP) generated by the event was $914,000 for Canada as a whole; $826,000 for Nova Scotia and $642,000 in Halifax.

Considerable tax revenues were also produced by the 2017 Halifax Halifax Pop Explosion, totaling $304,000. The event supported federal government tax revenues of $127,000 with provincial taxes of $144,000 accruing to the Province of Nova Scotia. Moreover, $20,800 in municipal taxes were supported in Nova Scotia municipalities, of which $15,300 were in Halifax.

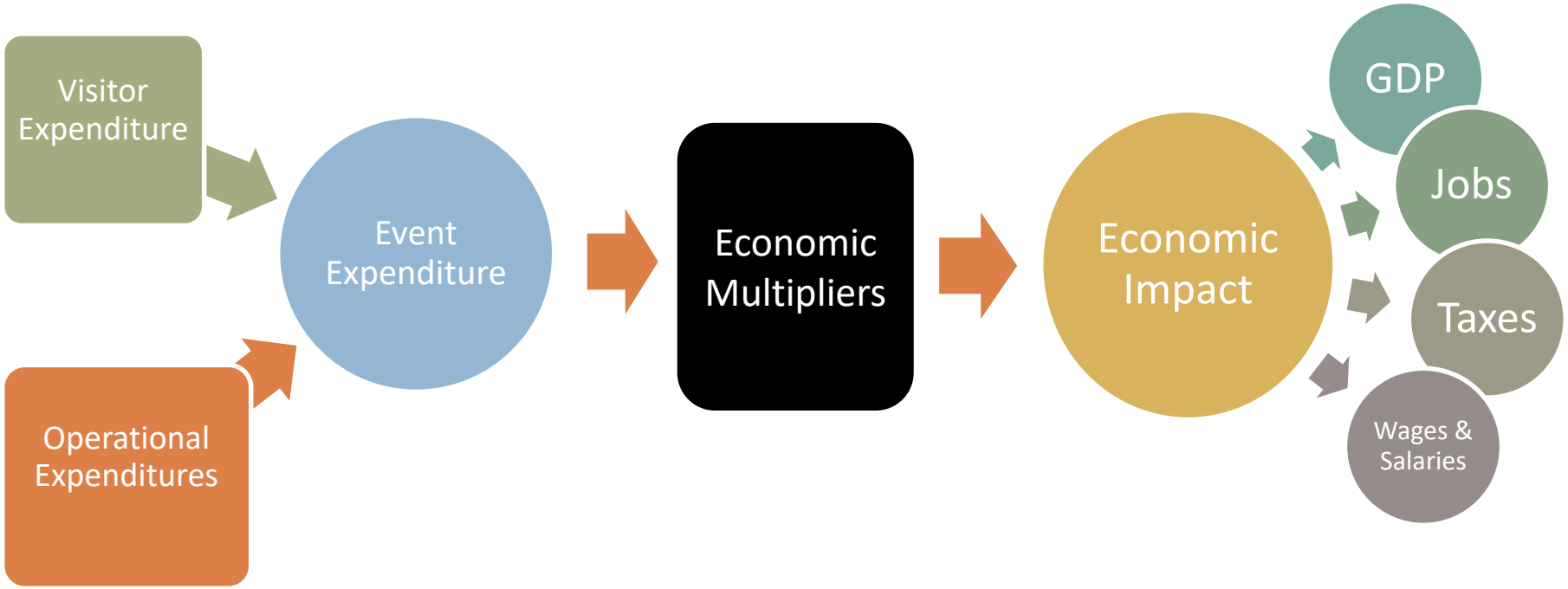
	Halifax	Nova Scotia	Canada
Initial Expenditure	$995,277	$995,277	$995,277
GDP	$641,536	$826,268	$914,493
Wages & Salaries	$470,818	$570,072	$618,919
Employment	7.1	8.8	9.5
Industry Output	$1,276,439	$1,444,207	$1,628,184
Taxes	$239,714	$284,039	$303,775
Federal	$101,016	$119,046	$127,475
Provincial	$123,348	$144,159	$153,113
Municipal	$15,349	$20,834	$23,187

[2] Jobs reported in this study refer to the number of jobs, vs. full time equivalent (i.e.: two people working half time in a job that typically features half time employment would represent two jobs or one FTE). Additionally, the direct employment effects are generally extra shifts or overtime for existing workers rather than new employment.

Detailed Economic Impact Results

	Halifax	Nova Scotia	Canada
Initial Expenditure	$995,277	$995,277	$995,277
Gross Domestic Product			
Direct Impact	$335,454	$358,183	$358,183
Indirect Impact	$218,510	$324,253	$372,856
Induced Impact	$87,572	$143,832	$183,454
Total Impact	$641,536	$826,268	$914,493
Industry Output			
Direct & Indirect	$1,136,066	$1,213,652	$1,321,858
Induced Impact	$140,373	$230,555	$306,325
Total Impact	$1,276,439	$1,444,207	$1,628,184
Wages & Salaries			
Direct Impact	$296,878	$310,004	$310,004
Indirect Impact	$137,271	$199,774	$227,758
Induced Impact	$36,670	$60,294	$81,157
Total Impact	$470,818	$570,072	$618,919
Employment (Full-year jobs)			
Direct Impact	3.9	4.1	4.1
Indirect Impact	2.5	3.6	4.1
Induced Impact	0.7	1.0	1.3
Total Impact	7.1	8.8	9.5
Taxes (Total)			
Federal	$101,016	$119,046	$127,475
Provincial	$123,348	$144,159	$153,113
Municipal	$15,349	$20,834	$23,187
Total	$239,714	$284,039	$303,775

How Economic Impact Modelling Works



Event Expenditure

Represents the combined spending of:

- Event Visitors (Tourism)
- Event Operations
- Event Capital Construction

Is the amount of money being spent in the community **BEFORE** the application of any economic multipliers

Gross Domestic Product (GDP)

Gross Domestic Product

Represents the total value of production of goods and services in the economy resulting from the initial expenditure under analysis

This is a **NET** measure and represents the value of goods and services produced less the cost of inputs used. It also accounts for the value of any imports to the region under consideration

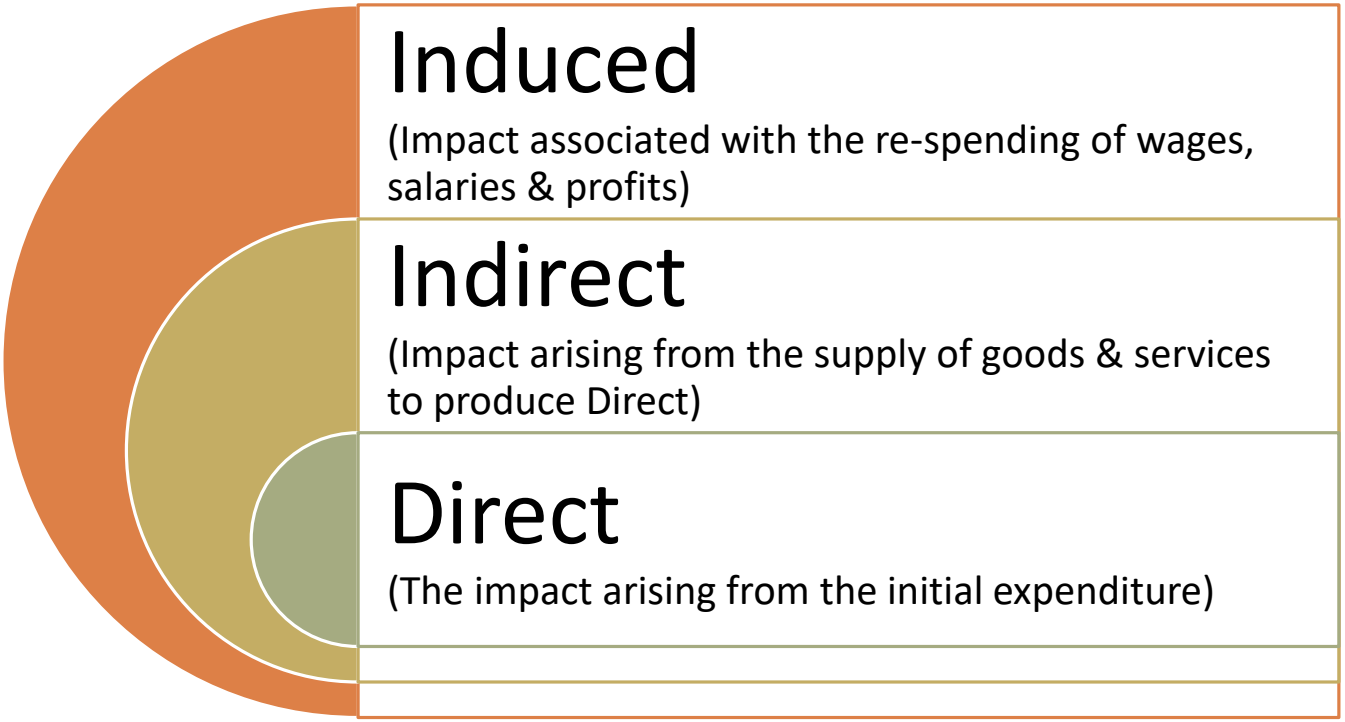
The concept is well understood by most government stakeholders and economists

Economic Activity

This figure represent the direct, indirect and induced impacts on industry output generated by the initial tourism expenditure. It should be noted that the industry output measure represents the **sum** total of all economic activity that has taken place and consequently involve double counting on the part of the intermediate production phase.

Since the Gross Domestic Product (GDP) figure includes only the **net** total of all economic activity (i.e. considers only the value added), the industry output measure will always exceed or at least equal the value of GDP.

Economics Background



Appendix 1: Economic Impact Methodology FEAM

Background

Briefly, the purpose of FEAM is to calculate both the provincial and regional economic impacts of event based tourism. The economic impacts are calculated on the basis of capital and operating expenditures on goods, services and employee salaries, and on the basis of tourist spending within a designated tourism sector. The elements used to measure the economic impacts are Gross Domestic Product (GDP), Employment, Taxes, Industry Output and Imports. FEAM measures the direct, indirect & induced effects for each of these elements.

In order to produce economic contribution assessments that are robust and reliable, we developed specific economic contribution models at the national, provincial and metropolitan levels that make use of the most current and most detailed input-output tables and multipliers available from Statistics Canada. The approach also leverages the credibility and robustness of sector specific tax data available from Statistics Canada's Government Revenues Attributable to Tourism (GRAT) report.

Technical Description of the Impact Methodology Used by FEAM$^{2.0}$

While the economic contribution analysis will be conducted primarily at the provincial level, developing highly disaggregated provincial economic models required first the construction of a highly disaggregated national economic contribution model. The reason for this was that detailed input-output tables from Statistics Canada are only publicly available at the national level.

For FEAM and FEAM, we pioneered a solution that leveraged the detail available on an industry basis from the national model using aggregate multipliers that are available for each province and territory.

While the set of multipliers that Statistics Canada produces do not provide insights into the economic contributions attributed to specific industries operating within the economy, they do represent a known aggregate level which the overall economy can be expected to benefit by. The key to our approach is the linkage between the industry level detail (provided by the model developed from the input-output tables) with the benchmarks provided by the various multipliers.

Appendix 1: (continued)

FEAM and many other impact studies are based on input-output techniques. Input-output models involve the use of coefficients that are based on economic or business linkages. These linkages trace how tourist expenditures or business operations filter through the economy. In turn, the coefficients applied are then used to quantify how tourism related activity in a particular region generates employment, taxes, income, etc. The input-output approach indicates not only the direct and indirect impact of tourism, but can also indicate the induced effect resulting from the re-spending of wages and salaries generated.

All impacts generated by the model are given at the direct impact stage (i.e. the "front line" businesses impacted by tourism expenditures), indirect impact stage (i.e. those industries which supply commodities and/or services to the "front line" businesses) and the induced impact stage (induced consumption attributable to the wages and salaries generated from both the direct and indirect impact).

The direct and indirect impact phase results are benchmarked with the corresponding direct and indirect multipliers from Statistics Canada at the national level, on an industry by industry basis.

We developed induced round effects that replicate the re-spending behavior of consumers (who benefited through wages either directly or indirectly by special events) along income ranges. The re-spending profiles used account for different average wages that exist in specific industry sectors. Ultimately, the re-spending profiles permit the determination of distinct levels and composition of induced consumption depending upon the extent to which those industries are directly and indirectly affected by economic activity arising from hosting events and festivals.

After the level and composition of induced consumption is determined, the process involved treating the induced consumption spending in a separate analysis—much the same as the original event related expenditures were. Hence, these expenditures were simulated through the direct and indirect impact phase and treated as if they were initial expenditures.

Once again, the magnitude of the results of the induced impact phase was benchmarked against the corresponding multipliers supplied by Statistics Canada. Again, this is done to ensure that, in aggregate, the estimates align with those from Statistics Canada but at the same time the analysis also provides an industry by industry breakdown.

Taxes and employment are two key impact measures that require data sources beyond those available in the input-output model.

Appendix 1: (continued)

Taxes

Despite the fact that many of the sales tax ratios are available from the margins tables produced by Statistics Canada, additional work was required to adjust these rates based on possible changes in tax rates between 2010 (the year of the input-output tables) and 2012 (the year of the analysis). To extend the analysis to include the full range of taxes and fees impacted by special events, we relied on statistics reported in Statistics Canada's Government Revenues Attributable to Tourism (GRAT) report. This report is particularly useful because it follows the concepts and definitions as identified in the Canadian Tourism Satellite Account (CTSA). As well, the scope of taxes covered by the GRAT is more comprehensive than what would be possible using only the input-output tables. In particular, the GRAT includes taxes on incomes (i.e., on employment earnings, corporate profits, net income of unincorporated business and government business enterprises), contributions to social insurance plans (i.e., premiums for Canada/Quebec Pension Plan, Employment Insurance and workers compensation), taxes on production and products (such as sales and property taxes), and from sales of government goods and services.

Aside from reporting on the tax collections directly attributable to tourism, the GRAT study also identifies the composition and level of taxes attributed to various industry segments of the economy. At the present time, the most recent GRAT report relates to the 2011 calendar year. The established rates calculated from GRAT were adjusted, where applicable, to reflect rate changes that occurred between 2011 and subsequent years.

To incorporate the findings from the GRAT study into our analysis, we estimated ratios that were based on the most current industry sector tax data along with the most current GDP estimates on an industry basis. The resulting tax coefficients were then used to determine tax calculations that would be based on GDP estimates stemming from the model on an industry by industry basis.

The categories of taxes that were benchmarked against the GRAT statistics include corporate taxes, contributions to social insurance plans and other taxes on production. Other taxes on production comprise property taxes, payroll taxes, capital taxes, permits and many other miscellaneous taxes covering federal, provincial and municipal levels of government. The contributions to social insurance plans include employment insurance, worker's compensation and the Canada and Quebec pension plans.

We also went outside of the figures reported in the GRAT report to assemble income tax coefficients. This was done to capture the detail that was already available from the input-output analysis and to better align with the granular demand associated with special event expenditures. The source used to assemble specific income tax rates, by income range, was the Canadian Tax Foundation's most recent Finances of the Nation report. This report provide insights on taxes on incomes (i.e., on employment earnings, corporate profits, net income of unincorporated business and government business enterprises) and contributions to social insurance plans (i.e., premiums for Canada/Quebec Pension Plan, Employment Insurance and workers compensation).

Appendix 1: (continued)

Employment

Employment is a measure that is available, in aggregate form, from the multiplier tables produced by Statistics Canada. However, the employment multipliers relate to the year of the tables (2010) and not the year of the current analysis. To adjust for this difference, indices of average wage growth by industry were incorporated to reflect the period between 2010 and the year under analysis. Annual data from Statistics Canada's Labour Force survey were used on an industry basis to capture the change in average earnings.

Once again, in order to preserve the industry by industry detail available from the model, appropriate average wages were applied against industry labour income estimates to align with the employment multipliers from Statistics Canada. The one distinction being that the employment multipliers reflect the economy operating in 2010. Hence, adjustments on average wages were made to estimate what the employment multipliers would resemble had they been produced for subsequent years.

Regional (Sub-Provincial) Impact Methodology

The method used to simulate intraprovincial commodity flows and ultimately regional impacts follows directly from regional economic principles. The principle is referred to as the "gravity model". Basically the "gravity model" states that the required commodity (& service) inputs will be "recruited" in a manner that takes into consideration economies of scale (i.e. production costs), transportation costs and the availability of specific industries. Economies of scale (i.e. lower production costs) are positively correlated with input demand while greater transportation costs are negatively correlated with input demand. Fulfilling that demand from other provincial regions is contingent on the fact that the specific industry does actually exist. An advantage of using the "gravity model" to simulate intraprovincial commodity flows is that as the industrial composition of the labour force changes, or as new industries appear for the first time in specific regions, the share of production between the various sub-provincial regions also changes.

By following this principle of the gravity model, all sub-provincial regions of a province are assigned a coefficient for their relative economies of scale in each industry (using the latest industry labour force measures) as well as a coefficient to represent the transportation cost involved to get each industry's output to the designated market. One variation on the "gravity model" principle involves the estimation of "relative trade distances" by incorporating different "weights" for different modes of transport. Once these coefficients are generated for all regions and over all industries, a measure of sensitivity (mostly relative to price, but in the case of service industries also to a "local preference criteria") is then applied to all commodities. Another variation on the strict "gravity model" approach is that the measure of sensitivity is adjusted by varying the distance exponent (which in the basic "gravity model" is 2) based on the commodity or service required. The variation in distance exponents revolve, principally, around two research hypotheses: (1) the greater the proportion of total shipments from the largest producer (or shipper), the lower the exponent, and (2) the greater the proportion of total flow which is local (intraregional), the higher the exponent.

Appendix 2: Glossary of Terms Used by FEAM

Initial Expenditure - This figure indicates the amount of initial expenditures or revenue used in the analysis. This heading indicates not only the total magnitude of the spending but also the region in which it was spent (thus establishing the "impact" region).

Direct Impact - Relates ONLY to the impact on “front-line” businesses. These are businesses that initially receive the operating revenue or tourist expenditures for the project under analysis. From a business perspective, this impact is limited only to that particular business or group of businesses involved. From a tourist spending perspective, this can include all businesses such as hotels, restaurants, retail stores, transportation carriers, attraction facilities and so forth.

Indirect Impact - Refers to the impacts resulting from all intermediate rounds of production in the supply of goods and services to industry sectors identified in the direct impact phase. An example of this would be the supply and production of bed sheets to a hotel.

Induced Impact - These impacts are generated as a result of spending by employees (in the form of consumer spending) and businesses (in the form of investment) that benefited either directly or indirectly from the initial expenditures under analysis. An example of induced consumer spending would be the impacts generated by hotel employees on typical consumer items such as groceries, shoes, cameras, etc. An example of induced business investment would be the impacts generated by the spending of retained earnings, attributable to the expenditures under analysis, on machinery and equipment.

Gross Domestic Product (GDP) - This figure represents the total value of production of goods and services in the economy resulting from the initial expenditure under analysis (valued at market prices).

- **NOTE:** The multiplier of Total/Initial, represents the total (direct, indirect and induced) impact on GDP for every dollar of direct GDP. This is a measure of the level of spin-off activity generated as a result of a particular project. For instance if this multiplier is 1.5 then this implies that for every dollar of GDP directly generated by “front-line” tourism businesses an additional $0.50 of GDP is generated in spin-off activity (e.g. suppliers).

- The multiplier of total/$ Expenditure, represent the total (direct, indirect and induced) impact on GDP for every dollar of expenditure (or revenue from a business perspective). This is a measure of how effective project related expenditures translate into GDP for the province (or region). Depending upon the level of expenditures, this multiplier ultimately determines the overall level of net economic activity associated with the project. To take an example, if this multiplier is 1.0, this means that for every dollar of expenditure, one dollar of total GDP is generated. The magnitude of this multiplier is influenced by the level of withdrawals, or imports, necessary to sustain both production and final demand requirements. The less capable a region or province is at fulfilling all necessary production and final demand requirements, all things being equal, the lower the eventual economic impact will be.

Appendix 2: (continued)

GDP (at factor cost) - This figure represents the total value of production of goods and services produced by industries resulting from the factors of production. The distinction to GDP (at market prices) is that GDP (at factor cost) is less by the amount of indirect taxes plus subsidies.

Wages & Salaries - This figure represents the amount of wages and salaries generated by the initial expenditure. This information is broken down by the direct, indirect and induced impacts.

Employment - Depending upon the selection of employment units (person-years or equivalent full-year jobs) these figures represent the employment generated by the initial expenditure. These figures distinguish between the direct, indirect and induced impact. "Equivalent Full-Year Jobs", if selected, include both part-time and full-time work in ratios consistent with the specific industries.

- **NOTE:** The multiplier (B) is analogous to Multiplier (B) described earlier with the exception being that employment values are represented per $1,000,000 of spending rather than per dollar of spending. This is done to alleviate the problem of comparing very small numbers that would be generated using the traditional notion of a multiplier (i.e. employment per dollar of initial expenditure).

Industry Output - These figures represent the direct & indirect and total impact (including induced impacts) on industry output generated by the initial tourism expenditure. It should be noted that the industry output measure represents the **sum** total of all economic activity that has taken place and consequently involve double counting on the part of the intermediate production phase. Since the Gross Domestic Product (GDP) figure includes only the **net** total of all economic activity (i.e. considers only the value added), the industry output measure will always exceed or at least equal the value of GDP.

Taxes - These figures represent the amount of taxes contributed to municipal, provincial and federal levels of government relating to the project under analysis. This information is broken down by the direct, indirect and induced impacts.

Imports - These figures indicate the direct, indirect and induced final demand and intermediate production requirements for imports both outside the province and internationally.