MIXED CHAMPIONSHIP
2017 · Yarmouth

MARINERS CENTRE

2017 Canadian Mixed Curling Championships

Yarmouth, Nova Scotia

Economic Impact Assessment

April 2017

Canadian Sport Tourism Alliance
Alliance canadienne du tourisme sportif

steam pro 2.0
real data • real time

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Summary: 2017 Canadian Mixed Curling Championships

A total of 58 athletes from 14 teams took part in Curling Canada's 2017 Canadian Mixed Curling Championships. The competition was hosted at Yarmouth's Mariner Centre from November 13-19, 2016. The competition attracted more than 4,300 spectators and participant family members.

The spending of out of town spectators and participants at the 2017 Canadian Mixed Curling Championships, in combination with the expenditures made by the organizers in hosting the event totaled $361,000, supporting $474,000 in economic activity in Nova Scotia including $432,200 of economic activity in Yarmouth. These expenditures supported $101,000 in wages and salaries in the province through the support of 2.4 jobs, of which 2.1 jobs and $77,000 in wages and salaries were supported in Yarmouth. The total net economic activity (GDP) generated by the 2017 Canadian Mixed Curling Championships was $320,000 for Canada as a whole; $296,000 for Nova Scotia and $249,000 for Yarmouth.

The 2017 Canadian Mixed Curling Championships supported tax revenues totaling $63,700 for Canada as a whole. Broken out by level of government, the event supported federal tax revenues of $23,600 with an additional $30,400 in taxes accruing to the Province of Nova Scotia. Moreover, $5,600 in municipal taxes were supported in Nova Scotia, of which $4,000 was in Yarmouth.

2017 Canadian Mixed Curling Championships by the Numbers

4,300 total attendance	**$158,000** of visitor spending attributable to Mixed Curling	**2.1** Yarmouth jobs supported by Mixed Curling	**$474,000** in economic activity in Nova Scotia
268 out of town visitors in Yarmouth	**$77,000** of wages and salaries supported in Yarmouth	**$296,000** boost to provincial GDP	**$63,000** in taxes supported across Canada

Background

The 2017 Canadian Mixed Curling Championships was hosted in Yarmouth, Nova Scotia at the Mariners Centre. A total of 58 participants from 14 teams (10 provinces, Northern Ontario, and 3 territories) took part in the competition featuring teams of 2 men and 2 women. In addition, the event attracted more than 4,300 spectators and family supporters over the 7 day competition. In total, nearly 270 out of town visitors attended the Championships, thus generating a significant economic impact for the Town of Yarmouth.

Economic Impact studies measure the positive effects that festivals and events have on the economic activity in a specific region. They first calculate the amount of new money being spent in the host community as a direct result of holding the event, and then the impact these new monies have on the regional, provincial, and national economy as a whole.[1]

[1] The Canadian Sport Tourism Alliance's (CSTA's) **Sport Tourism Economic Assessment Model**, Professional version (STEAM PRO 2.0) was used to generate the economic impact estimates detailed in this report. STEAM PRO, which was developed in 2006, is a model that has been designed to incorporate the results of primary data collected from event visitors and the budget / capital expenditures of event organizers and others to prepare economic impact assessments. The model, updated in 2017 is based on the Canadian Tourism Research Institute's (CTRI - a branch of The Conference Board of Canada) TEAM model, which is the most widely used tourism economic impact model in Canada. The results of STEAM PRO 2.0 are fully consistent with the CSTA's STEAM 2.0 model. A more detailed description of STEAM PRO 2.0 is contained within Appendix 1.

Methodology

The visitor statistics used in this study were derived from an on-site intercept survey. In consultation with Events Nova Scotia (ENS) and Curling Canada, the Canadian Sport Tourism Alliance developed and programmed the survey using Survey Analytics Survey Pocket Software hosted on tablet computers. Volunteers were trained by the CSTA and ENS, with intercepts being conducted before and during draws on most days of the event. A total of 170 parties were intercepted with 124 parties representing 308 spectators and family members responding. The survey asked a number of questions regarding attendance at the event and information about the respondents visit to Yarmouth if they were from out of town.

Visitor Origin & Volume

The overall volume number of spectators in attendance was calculated using the survey responses and ticket sales data. The total attendance of 4,328 people was divided based on the relative frequency of respondents in the survey. The attendance by origin sub-category was then divided by the average number of draws attended as reported by the survey (overall of 7.4 draws per person). Working through the calculations shows that the 4,328 visits were made by 581 individual spectators, of which 189 spectators were from outside of Yarmouth.

	Origin	Attendance	Draws per Person	Individuals
Yarmouth (under 40km)	58%	2,513	6.4	392
HRM	4%	175	4.2	42
Other Nova Scotia	8%	349	8.6	41
Other Atlantic Canada	7%	314	15.7	20
Other Canada	23%	977	11.4	86
Total	**100%**	**4,328**	**7.4**	**581**
Visitors	*42%*	*1,815*	*9.6*	*189*

Visitor Spending

As noted, out of town spectators and participants were asked about their visit to Yarmouth. The survey found that one quarter (23%) of out of town visitors made a day trip to Yarmouth. Among overnight visitors, most (80%) stayed in commercial accommodation , with the balance of visitors staying with friends and relatives (7%) or made use of other accommodation such as short term rentals, RVs, or second homes.

As a result of the relatively small sample size of out of town visitors who provided complete spending information, visitor spending calculations were broken out into only two categories, visitors from Atlantic Canada and visitors from other parts of Canada. The typical visitor party, comprised of 3.3 people spent 6.1 nights in Yarmouth and spent $613 per person. Combining the spending with the overall number of out of town visitors (189 people) shows that the aggregate spending in Yarmouth associated with hosting the 2017 Canadian Mixed Curling Championships reached nearly $116,000.

	Atlantic	Other Canada	Average
Accommodation	$291.67	$219.39	$258.78
Restaurants	$129.50	$154.76	$140.99
Groceries	$43.33	$37.33	$40.60
Recreation & Entertainment	$30.55	$21.51	$26.44
Shopping	$99.51	$78.54	$89.97
Vehicle Expenses (personal / rental)	$52.20	$58.01	$54.85
Other Transportation	$0.96	$1.94	$1.41
Total	**$647.73**	**$571.48**	**$613.03**

	Atlantic	Other Canada	Aggregate
Visitors	*103*	*86*	*189*
Accommodation	$30,042	$18,867	$48,909
Restaurants	$13,338	$13,310	$26,648
Groceries	$4,463	$3,211	$7,674
Recreation & Entertainment	$3,147	$1,849	$4,997
Shopping	$10,249	$6,755	$17,004
Vehicle Expenses (personal / rental)	$5,377	$4,989	$10,366
Other Transportation	$99	$167	$266
Total	**$66,716**	**$49,148**	**$115,863**

Operational Expenditures

Operations

In hosting the 2017 Canadian Mixed Curling Championships, the organizers spent nearly $123,000, with costs being largely related to venue operations, supporting the event volunteers, hospitality and accommodation of participants, staff and officials.

Economic Impact Results

The spending of out of town spectators and participants at the 2017 Canadian Mixed Curling Championships, in combination with the expenditures made by the organizers in hosting the event totaled $361,000, supporting $474,000 in economic activity in Nova Scotia including $432,200 of economic activity in Yarmouth. These expenditures supported $101,000 in wages and salaries in the province through the support of 2.4 jobs, of which 2.1 jobs and $77,000 in wages and salaries were supported in Yarmouth.[2] The total net economic activity (GDP) generated by the 2017 Canadian Mixed Curling Championships was $320,000 for Canada as a whole; $296,000 for Nova Scotia and $249,000 for Yarmouth.

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	Yarmouth	Nova Scotia	Canada
Initial Expenditure	$360,974	$360,974	$360,974
GDP	$248,694	$296,030	$319,765
Wages & Salaries	$77,310	$101,091	$114,213
Employment	2.1	2.4	2.6
Industry Output	$432,259	$473,745	$522,807
Total Taxes	$46,130	$57,499	$62,748
Federal	$17,154	$21,437	$23,630
Provincial	$24,951	$30,446	$32,878
Municipal	$4,025	$5,616	$6,240

[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.

Economic Impact Results - Detailed

	Yarmouth	Nova Scotia	Canada
Initial Expenditure	$360,974	$360,974	$360,974
Gross Domestic Product			
Direct Impact	$164,412	$169,979	$169,979
Indirect Impact	$66,538	$95,507	$108,204
Induced Impact	$17,744	$30,544	$41,582
Total Impact	$248,694	$296,030	$319,765
Industry Output			
Direct & Indirect	$403,816	$424,785	$452,673
Induced Impact	$28,443	$48,960	$70,134
Total Impact	$432,259	$473,745	$522,807
Wages & Salaries			
Direct Impact	$30,204	$33,337	$33,337
Indirect Impact	$39,524	$54,950	$62,242
Induced Impact	$7,582	$12,804	$18,634
Total Impact	$77,310	$101,091	$114,213
Employment (Full-year jobs)			
Direct Impact	1.0	1.0	1.0
Indirect Impact	0.9	1.2	1.3
Induced Impact	0.2	0.3	0.3
Total Impact	2.1	2.4	2.6
Taxes (Total)			
Federal	$17,154	$21,437	$23,630
Provincial	$24,951	$30,446	$32,878
Municipal	$4,025	$5,616	$6,240
Total	$46,130	$57,499	$62,748

Additional Questions

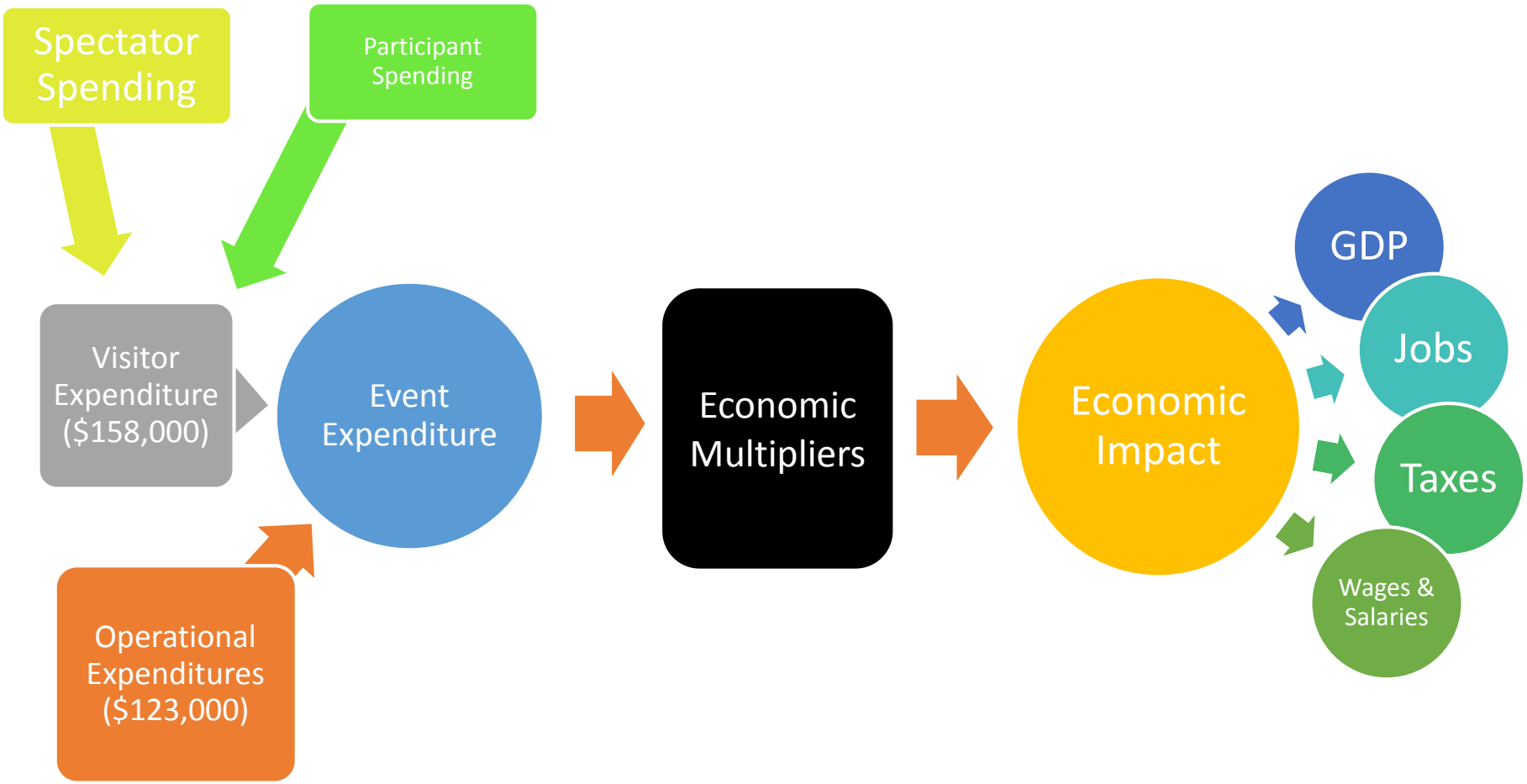
Out of province visitors were asked if they had been to Nova Scotia before with the survey finding that just over one-quarter (28%) were making their first visit to the province.

All out of province respondents were also asked about which websites they visited prior to coming:

Website	Use (%)
Event Website (www.curling.ca/mixed)	29%
www.tripadvisor.ca	20%
www.novascotia.com	20%
www.novascotiatourismagency.ca	23%
Did not visit a website	11%
www.explorenovascotia.com	6%
Other	34%

Out of province visitors were also asked if they would be spending any nights in other parts of Nova Scotia (outside the HRM). The survey found that 33% of respondents were visiting other areas of the province, staying for an average of 1.5 nights.

How Economic Impact Modelling Works



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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

Gross Domestic Product (GDP)

- 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

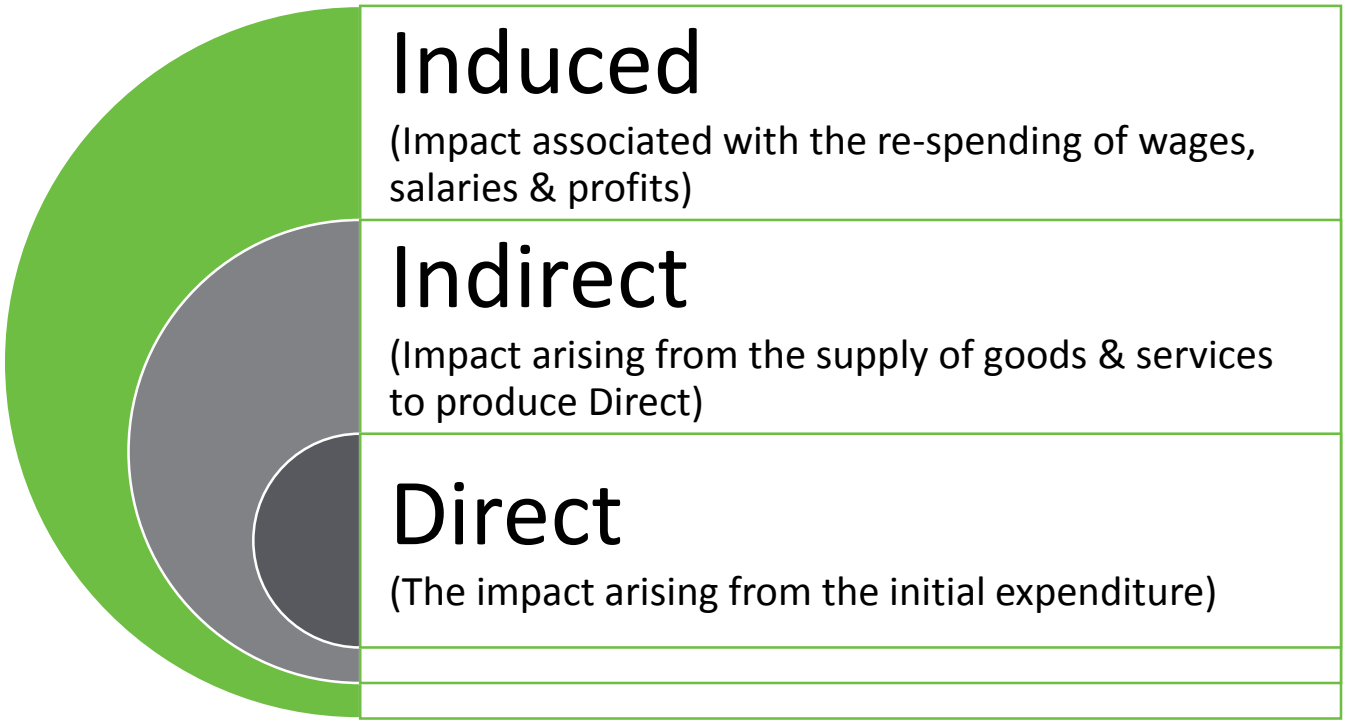
Economic Activity

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



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Appendix 1: Economic Impact Methodology STEAM$^{2.0}$

Background

Briefly, the purpose of STEAM 2.0 is to calculate both the provincial and regional economic impacts of sport and 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. STEAM 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 STEAM$^{2.0}$

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 STEAM 2.0 and STEAM PRO 2.0, 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: Economic Impact Methodology STEAM$^{2.0}$

STEAM 2.0 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 sport 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 sports 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 sport 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: Economic Impact Methodology STEAM$^{2.0}$

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 sport 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 sporting 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: Economic Impact Methodology STEAM$^{2.0}$

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 STEAM$^{2.0}$

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).

Appendix 2: Glossary of Terms Used by STEAM$^{2.0}$

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.

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.