

Canadian Sport Tourism Alliance



Alliance canadienne du tourisme sportif

2014 World U17 Hockey Challenge Sydney, Nova Scotia

Economic Impact Assessment

May 2014

The following analysis provides the economic impact of the 2014 World U-17 Hockey Challenge hosted in Sydney, Nova Scotia from December 29, 2013 to January 4, 2014 as generated by the Sport Tourism Economic Assessment Model – Professional Version.

Economic Impact Assessment Funding Partner

The Canadian Sport Tourism Alliance wishes to acknowledge the financial support of Hockey Canada in the completion of this study.

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1.0 Background

The 2014 World Under 17 Hockey Challenge is the first step in Hockey Canada’s Program of Excellence and features five Canadian and five international teams competing in the annual competition hosted in different cities across Canada. The 2014 edition was held in Sydney, North Sydney and Port Hawkesbury Nova Scotia and saw the United States defeating Team Canada – Pacific in the gold medal match while Team Canada – Atlantic lost to the Czech Republic in the bronze medal game. The tournament features the world’s top hockey prospects and consequently attracts hundreds of visitors to the host community and when combined with the operational spending of the event hosts, the tournament generates a significant economic impact, which is the subject of this report.

In measuring the economic impact of the 2014 World U-17 Hockey Challenge, spectators at the event were surveyed as to their origin, length of stay, and spending in the Sydney region, with the survey methodology and results being the subject of the next section. The event organizers also invested significantly in hosting the World U-17 Hockey Challenge, as noted in Section 3. Finally, section 4 reports the STEAM PRO¹ results from the combined expenditures of the spectators and the event organizers’ operational expenditures. The appendices include more details about STEAM PRO, the economic impact assessment model used and a glossary of terms.

¹The Canadian Sport Tourism Alliance’s (CSTA’s) **Sport Tourism Economic Assessment Model**, Professional version (STEAM PRO) 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 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 are fully consistent with the CSTA’s STEAM model. A more detailed description of STEAM PRO is contained within Appendix 1.

2.0 Methodology/ Survey Results

Information regarding the composition and spending of spectators at the 2014 World U-17 Hockey Challenge was collected through the administration of a face-to-face intercept survey. The survey captured essential information to determine the origin of spectators attending the event and the expenditures of out-of-town visitors to the Sydney region. The survey was conducted using iPod Touch PDAs running Survey Analytics' Survey Pocket software.²

Survey Results

A total of 827 visitor parties were approached during the event with 766 parties agreeing to participate (a rejection rate of 7%). Of this group, 115 parties had been previously surveyed (15%), yielding a total of 651 valid surveys. The overall sample of valid surveys found that nearly three-quarters of those intercepted (73%) were from Sydney while 175 parties (27%) were from outside of the region, with nearly half of the visitors being Nova Scotia residents.³

The calculation for determining the number of unique individuals attending the 2014 World U17 Hockey Challenge is shown in Table 2.1. With locals and visitors attending a different number of games, the first step was to split out the total attendance by visitor origin. Subsequently, dividing the number of event attendees by the average number of games gives the number of individuals. As the average number of games varied by the arena in which the survey was conducted, the analysis is also broken out by location. In total, there were 5,470 unique spectators attending the event, of which 1,150 were from outside of Sydney.

Table 2.1a Attendance - Sydney

Origin	Origin Share	Attendance	Games P.P.	Individuals
Sydney (<40km)	78.9%	28,764	9.7	2,951
Other Nova Scotia	5.6%	2,026	12.2	166
Other Atlantic Canada	3.3%	1,215	9.1	133
Other Canada	5.0%	1,823	8.5	214
US	2.8%	1,013	11.0	92
International	4.4%	1,620	11.3	144
Total	100.0%	36,461	9.9	3,700
<i>Visitors</i>	<i>21.1%</i>	<i>7,697</i>	<i>10.3</i>	<i>749</i>

²The survey and methodology were prepared in consultation with the "Guidelines for Measuring Tourism Economic Impact At Gated Festivals and Events", available at:

<http://www.tourism.gov.on.ca/english/tourdiv/research/resources.htm>

³ The sample size of 60 out of town surveys representing 171 visitors of the total of 1,153 visitors gives a statistically significant confidence interval of +/- 6.9%, 19 times in 20.

Table 2.1b Attendance – Port Hawkesbury

Origin	Origin Share	Attendance	Games P.P.	Individuals
Port Hawkesbury (<40km)	87.4%	3,539	2.6	1,365
Other Nova Scotia	1.1%	43	2.5	17
Other Atlantic Canada	3.2%	128	1.0	128
Other Canada	3.2%	128	1.2	107
US	5.3%	213	1.4	152
International	0.0%	0	2.0	0
Total	100.0%	4,051	2.3	1,769
<i>Visitors</i>	<i>12.6%</i>	<i>512</i>	<i>1.3</i>	<i>404</i>

Table 2.2 Total Attendance

Origin	Count
Sydney / Port Hawkesbury	4,316
Other NS	183
Other Atlantic Can	261
Other Canada	320
US	244
International	144
Total	5,468
<i>Visitors</i>	<i>1,153</i>

Visitor Spending

Out-of-town spectators were asked about their expenditures while in Sydney and Port Hawkesbury. For the purposes of the spending analysis, visitors were divided into three categories: sameday visitors, overnight visitors from Nova Scotia and other Atlantic Canada, and overnight long-haul visitors (other parts of Canada, the U.S. and International). The average visitor party was comprised of 2.6 people and spent 6.6 nights in Sydney and spent \$704 per person while in Sydney, or an average of \$106 per person per night. Visitors were also asked as to the importance of the event in their decision to travel to Sydney, with the average importance being given as 9.4 on a scale of 1-10.

Table 2.3 Visitor Spending per Person

	Sameday	Overnight NS / Atlantic	Overnight Long-Haul	Average
<i>Avg. Party Size</i>	2.8	2.4	2.7	2.6
<i>Avg. Nights in Region</i>		5.9	7.1	6.6
Accommodation	\$0.00	\$269.23	\$354.37	\$313.45
Restaurants	\$45.72	\$131.11	\$220.09	\$163.93
Grocery / Other Food & Beverage	\$4.34	\$62.22	\$68.85	\$56.47
Recreation & Entertainment	\$27.28	\$40.48	\$52.75	\$44.68
Shopping	\$5.79	\$43.05	\$20.54	\$25.17
Vehicle Expenses	\$13.89	\$57.14	\$140.67	\$92.58
Taxi / Transit	\$0.00	\$5.95	\$10.85	\$7.37
Total	\$97.02	\$609.19	\$868.12	\$703.65
<i>Per person per night</i>	<i>\$25.87</i>	<i>\$103.78</i>	<i>\$122.62</i>	<i>\$106.13</i>

Combining the visitor spending with the attendance figures finds that out of town visitors attending the 2014 U-17 Hockey Challenge spent \$772,000 in Sydney during their stay.

Table 2.4 Visitor Spending - Aggregate

	Sameday	Regional / Nova Scotia	Other Canada	Total
<i>Visitors</i>	211	258	685	1,154
Accommodation	\$0	\$69,461	\$242,713	\$312,174
Restaurants	\$9,646	\$33,827	\$150,741	\$194,214
Grocery / Other Food & Beverage	\$916	\$16,053	\$47,156	\$64,124
Recreation & Entertainment	\$5,756	\$10,443	\$36,129	\$52,328
Shopping	\$1,221	\$11,108	\$14,068	\$26,398
Vehicle Expenses	\$2,930	\$14,743	\$96,343	\$114,016
Taxi / Transit	\$0	\$1,536	\$7,433	\$8,969
Total	\$20,470	\$157,170	\$594,584	\$772,224

Participants

In addition to the out of town spectators, the 2014 National World U-17 Hockey Challenges also included 225 players and team staff, 15 event officials and 13 officials from Hockey Canada. While the majority of the expenses of participants were covered by the event organizers, additional expenditures have been included in the economic impact assessment.

3.0 Operational Expenditures

An analysis was also made of the operating expenditures made by the event organizers in hosting the 2014 World U-17 Hockey Challenge. The operating budget for hosting the 2014 World U-17 Hockey Challenge was \$897,000, which was spent on wide variety of goods and services, with the main categories including food and accommodation and local transportation for the participants.

While not included as a direct expenditure in the budget, the 2014 World U-17 Hockey Challenge was supported by 100 volunteers, and the success of the event was due in a large part to the efforts of this group.

4.0 Economic Impact Results

The spending of spectators at the event, in combination with the expenditures made by the event organizers in producing the 2014 World U-17 Hockey Challenge reached \$1.8 million, generating a net economic activity (GDP) of \$1.9 million in the Province of Nova Scotia, of which \$992,000 occurred in Sydney. These expenditures supported \$1.1 million in wages and salaries in the Province and an estimated 38 jobs, of which 27 jobs and \$630,000 in wages and salaries were in Sydney.⁴ The total economic activity (industry output) generated by the event was \$3.8 million in the Province, with \$2.6 million occurring in Sydney.

The total tax revenues supported by the 2014 World U-17 Hockey Challenge reached \$668,000. Of this total, \$300,000 was attributable to the federal government while provincial tax revenues reached \$294,000 and municipal taxes were \$74,000, of which \$51,000 was in Sydney.

⁴ Jobs reported in this study refers to the number of jobs, vs. full time equivalent (FTE: two people working half time would represent two jobs, or one FTE).

Table 4.1 Total Economic Impact

	Total Nova Scotia	Local Area Sydney	Rest of Nova Scotia
Initial Expenditure	\$1,761,934	\$1,761,934	\$0
Gross Domestic Product			
Direct Impact	\$412,110	\$412,110	\$0
Indirect Impact	\$992,505	\$402,056	\$590,449
Induced Impact	\$456,781	\$178,258	\$278,524
Total Impact	\$1,861,396	\$992,424	\$868,973
Industry Output			
Direct & Indirect	\$2,874,586	\$2,178,608	\$695,978
Induced Impact	\$967,138	\$377,454	\$589,684
Total Impact	\$3,841,724	\$2,556,062	\$1,285,661
Wages & Salaries			
Direct Impact	\$228,509	\$228,509	\$0
Indirect Impact	\$612,000	\$292,986	\$319,014
Induced Impact	\$278,378	\$108,157	\$170,221
Total Impact	\$1,118,887	\$629,652	\$489,235
Employment (Full-year jobs)			
Direct Impact ⁵	12.7	12.7	-
Indirect Impact	17.6	9.8	7.8
Induced Impact	7.4	4.3	3.1
Total Impact	37.8	26.9	10.9
Taxes (Total)			
Federal	\$300,014	\$170,019	\$129,995
Provincial	\$294,107	\$179,475	\$114,632
Municipal	\$73,747	\$50,529	\$23,219
Total	\$667,868	\$400,022	\$267,846

⁵ Direct employment impact is generally extra shifts or overtime for existing workers rather than new employment.

Appendix 1: Economic Impact Methodology – STEAM

Background

Briefly, the purpose of STEAM is to calculate both the provincial and regional economic impacts of sport 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.

Technical Description of the Impact Methodology used by STEAM

STEAM 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). In this sense, the model is closed with respect to wages. Imports are also determined within the model, so the model is closed with respect to imports. Exports are not endogenized (i.e. additional exports are not assumed with the induced impact) which consequently generates more conservative impacts. Another assumption of the model, which leads to more conservative impacts, is that not all commodities and/or services purchased are assumed to have at least one stage of production within the province. This assumption is crucial for souvenirs, gasoline and other commodities.

Taxes and employment are key economic considerations. However, as these concepts fall outside of the System of National Account Provincial input/output tables, their impacts must be calculated separately. Current tax and employment data for each region is used to econometrically estimate a series of coefficients and rates. These coefficients and/or rates are then applied to measures determined within the input-output framework of the model, yielding the final tax and employment figures.

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

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 (A), 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 (B), 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.

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.