Canadian Sport Tourism Alliance

Alliance canadienne du tourisme sportif

2015 World U17 Hockey Challenge

Dawson Creek & Fort St. John

Economic Impact Assessment

February 2016

The following analysis provides the economic impact of the 2015 World U-17 Hockey Challenge hosted in Dawson Creek and Fort St. John, British Columbia from November 1-7, 2015 as generated by the 5port Tourism Economic Assessment Model – Professional Version.

Economic Impact Assessment Funding Partner

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1.0 Background

The World Under-17 Hockey Challenge represents Hockey Canada's First step in its Program of Excellence. The 2015 tournament, co-hosted in Dawson Creek and Fort St. John in Northeastern British Columbia, featured three Canadian teams who were joined by five international teams: United States, Czech Republic, Finland, Russia and Sweden. Canada White's victory over team Russia in the final game was the first Canadian victory since 2011, and was powered in part by Owen Tippet's hat trick. The Bronze medal game saw Canada Red fall to team Sweden by a score of 3-0. In addition to the success on the ice, the 2015 World U-17 Hockey Challenge attracted hundreds of visitors to Northeastern British Columbia whose spending generated a significant economic impact on the host cites and the region as a whole, which is the subject of this report.

In measuring the economic impact of the 2015 World U-17 Hockey Challenge, spectators at the event were surveyed as to their origin, length of stay, and spending in Northeastern BC, 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 PRO[1] 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.

[1]The 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.

Visitor Spending

Spectators from outside of Northeastern British Columbia were asked about their expenditures while in the region. For the purposes of the spending analysis, visitors were divided into five categories: sameday visitors, regional overnight visitors, other BC overnight visitors, other Canada overnight visitors and U.S. / International overnight visitors.

The average visitor party was comprised of 2.8 people who spent an average of 5.9 nights in Northeastern British Columbia. The typical sameday traveller made 2.6 day trips to Dawson Creek / Fort St. John and spent $47 per trip, or a total of $122 over the course of the tournament. The average overnight visitor spent $526 per person while in Northeastern BC, or an average of $131 per person per night.

Table 2.4 Visitor Spending per Person – Northeastern BC

	Sameday Visitor	Regional Overnight	Other BC	Other Canada	International	Average
Party Size	*3.1*	*2.8*	*2.5*	*2.5*	*1.9*	*2.8*
Nights	*2.6**	*4.7*	*5.9*	*6.3*	*7.8*	*5.9***
Accommodation	$0.00	$152.61	$216.91	$422.19	$688.07	$198.68
Restaurants	$52.75	$115.58	$185.19	$280.44	$353.62	$155.70
Grocery	$17.91	$24.99	$45.36	$43.81	$34.06	$30.47
Recreation & Entertainment	$12.13	$29.20	$47.75	$25.06	$7.31	$22.82
Shopping	$17.21	$65.88	$64.67	$52.29	$59.21	$42.16
Vehicle Expenses	$22.18	$68.81	$106.53	$131.15	$159.94	$76.50
Total	$122.19	$457.08	$666.40	$954.94	$1,302.22	$526.32
Per Person Per Night	$47.00*	$98.30	$113.72	$151.82	$168.03	$130.85**

*per day

**Overnight visitors only

Combining the visitor spending with the attendance figures finds that out of town visitors attending the 2015 U-17 Hockey Challenge spent $998,000 in Northeastern BC.

Table 2.4 Visitor Spending - Aggregate

	Sameday Visitor	Regional Overnight	Other BC	Other Canada	International	Total
Visitors	*777*	*255*	*307*	*487*	*90*	*1,916*
Accommodation	$0	$38,915	$66,590	$205,607	$61,926	$373,038
Restaurants	$40,987	$29,474	$56,852	$136,575	$31,826	$295,714
Grocery	$13,916	$6,371	$13,924	$21,337	$3,066	$58,614
Recreation & Entertainment	$9,428	$7,447	$14,661	$12,205	$658	$44,399
Shopping	$13,373	$16,800	$19,854	$25,463	$5,329	$80,819
Vehicle Expenses	$17,235	$17,547	$32,703	$63,871	$14,395	$145,751
Total	**$94,940**	**$116,555**	**$204,585**	**$465,057**	**$117,199**	**$998,336**

The final step in the analysis was to divide the visitor spending between Fort St. John and Dawson Creek. The spending of sameday visitors was divided up based on the number of games each spectator attended in the two host cities. The expenditure of overnight visitors was allocated based on the community that they overnighted in. Using these rules provided the shares shown in Table 2.5, which were then applied to the visitor spending to calculate the total tourism expenditures each community realized through hosting the U-17 Hockey Challenge (Tables 2.6 & 2.7).

Table 2.5 Visitor Expenditure Shares

	Dawson Creek Share	Fort St. John Share
Sameday Visitor	60%	40%
Regional Overnight	32%	68%
Other BC	59%	41%
Other Canada	69%	31%
International	65%	35%

Table 2.6 Visitor Expenditure – Dawson Creek

Dawson Creek	Sameday Visitor	Regional Overnight	Other BC	Other Canada	International	Average
Expenditure Share	*60%*	*32%*	*59%*	*69%*	*65%*	*61%*
Accommodation	$0	$12,339	$39,018	$141,135	$40,252	$227,943
Restaurants	$24,654	$9,345	$33,312	$93,749	$20,687	$180,694
Grocery	$8,371	$2,020	$8,159	$14,646	$1,993	$35,816
Recreation & Entertainment	$5,671	$2,361	$8,590	$8,378	$428	$27,130
Shopping	$8,044	$5,327	$11,633	$17,479	$3,464	$49,384
Vehicle Expenses	$10,367	$5,564	$19,162	$43,843	$9,357	$89,060
Total	**$57,106**	**$36,956**	**$119,874**	**$319,229**	**$76,180**	**$610,027**

Table 2.7 Visitor Expenditure – Fort St. John

Fort St. John	Sameday Visitor	Regional Overnight	Other BC	Other Canada	International	Average
Expenditure Share	*40%*	*68%*	*41%*	*31%*	*35%*	*39%*
Accommodation	$0	$26,576	$27,572	$64,473	$21,674	$145,096
Restaurants	$16,334	$20,128	$23,540	$42,826	$11,139	$115,020
Grocery	$5,546	$4,351	$5,765	$6,691	$1,073	$22,798
Recreation & Entertainment	$3,757	$5,086	$6,070	$3,827	$230	$17,269
Shopping	$5,329	$11,473	$8,221	$7,985	$1,865	$31,435
Vehicle Expenses	$6,868	$11,983	$13,541	$20,028	$5,038	$56,691
Total	**$37,834**	**$79,598**	**$84,711**	**$145,829**	**$41,020**	**$388,309**

Table 4.2 Total Economic Impact

	Province of BC	Dawson Creek	Fort St. John	Rest of BC
Initial Expenditure	$2,732,700	$1,810,018	$922,681	$0
Gross Domestic Product				
Direct Impact	$803,023	$553,117	$249,907	$0
Indirect Impact	$1,389,316	$396,491	$184,394	$808,431
Induced Impact	$733,832	$221,134	$82,880	$429,818
Total Impact	**$2,926,171**	**$1,170,741**	**$517,180**	**$1,238,249**
Wages & Salaries				
Direct Impact	$444,950	$337,480	$107,470	$0
Indirect Impact	$873,587	$286,775	$145,978	$440,834
Induced Impact	$454,608	$138,059	$53,438	$263,111
Total Impact	**$1,773,145**	**$762,315**	**$306,885**	**$703,946**
Employment (Full-year jobs)				
Direct Impact	10.5	8.1	2.5	0.0
Indirect Impact	17.9	6.8	3.0	8.1
Induced Impact	9.5	4.4	1.5	3.6
Total Impact	**37.9**	**19.3**	**7.0**	**11.7**
Total Taxes				
Federal	$516,170	$215,189	$87,881	$213,100
Provincial	$412,929	$196,393	$69,356	$147,180
Municipal	$172,770	$77,048	$37,934	$57,788
Total	**$1,101,869**	**$488,630**	**$195,171**	**$418,068**
Industry Output				
Direct & Indirect	$4,440,200	$2,313,134	$1,100,801	$1,026,265
Induced Impact	$1,465,876	$441,331	$165,809	$858,735
Total Impact	**$5,906,075**	**$2,754,465**	**$1,266,610**	**$1,885,000**

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.