

**DAWSON CREEK 1998
NORTHERN BC WINTER GAMES
ECONOMIC IMPACT ASSESSMENT**

prepared for the:

**Northern BC Winter Games Society
and
BC Games Society**

prepared by the:

Economic Planning Group
#14 - 3318 Oak Street
Victoria, BC
V8X 1B1

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SUMMARY OF FINDINGS

Introduction

- This report presents estimates the economic impact of the 1998 Northern BC Winter Games on the community of Dawson Creek. These impacts were measured by recording the spending of the three Games organizing societies, and spending by four categories of individuals involved with the Games.
- Games societies included the Dawson Creek Northern BC Winter Games Society, the Northern BC Winter Games Society, and BC Games Society. Participants involved with the Games were the athletes, spectators, volunteers and billet families.
- The following numbers of persons were involved with the Games:
 - 1,660 athletes/168 coaches/55 officials
 - 1,252 spectators
 - 927 volunteers
 - 277 billet households housing 856 under 19 year old billets

Participant Spending

- A sample of participants from each category were interviewed during the Games resulting in the following spending totals:

Athletes/coaches/officials spent a total of	\$213,400
Spectators spent a total of	\$103,330
Volunteers spent a total of	\$78,100
Billet households spent a total of	\$23,850

Games Society Spending

- The Dawson Creek Northern BC Winter Games spent a total of \$161,000 in Dawson Creek on staging and administering the Games.
- The Northern Winter BC Games Society spent a total of \$22,120 in Dawson Creek supplying overall administration and assistance.
- BC Games Society spent \$2,400 on travel expenditures in Dawson Creek providing administrative assistance and advice.

Total Economic Impact

- Total direct economic impact of the Northern BC Winter Games on Dawson Creek was \$604,200 based on the total spending of \$418,680 by Game's participants, and \$185,520 by Game's organizers.

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1.0 INTRODUCTION

1.1 BACKGROUND

Dawson Creek hosted the 1998 Northern BC Winter Games during the first weekend in February. It took place over three days, and included 23 events held in 17 separate venues. The Games involved over 1,600 athletes from the six sport zones in northern and central British Columbia, plus coaches and officials. Dawson Creek provided over 900 local volunteers who assisted in administration of the Games. The community also provided nearly 300 billet families to accommodate all the under 19 year old participants.

The existence of the Games was assumed to produce significant economic impact in Dawson Creek, based on spending - by the local Games Societies, by the BC Games Society, and particularly by athletes, spectators and volunteers. The BC Games Society, in conjunction with the Dawson Creek Northern BC Winter Games Society and the Northern BC Winter Games Society, were interested in measuring the economic impact created by the Games. This information was deemed to be of interest to Dawson Creek officials, and to representatives of other northern communities who may be interested in hosting future Games.

1.2 OBJECTIVES

The purpose of this study was to analyze and calculate the economic impact of the Northern BC Winter Games on the community of Dawson Creek. Economic impact was measured by direct spending in the local area. Impacts were estimated by local spending of the:

- Northern Winter Games Society
- Dawson Creek Winter Games Society
- BC Games
- athletes/coaches
- spectators
- volunteers
- billet families

1.3 METHODOLOGY

Three methods were used to collect the economic impact information. The first two methods described below were based on estimating **expenditures**, while the third method was based on estimating **revenues**. Both the spending estimates are additive to create a spending total, while the supply estimate stands alone. Theoretically, the combined spending of the athletes, spectators and volunteers should equal the revenue generated by the businesses that benefited from this consumer spending.

- **Games Society Spending**

This approach involved recording the local expenditures made by the three organizing societies involved with the Games. This procedure was designed to capture all local spending by these administrative bodies, that was related to hosting the Games. These figures were accessed from the societies, and provided to the BC Games Society, based on pre-determined formats and expenditure categories outlined by the analysts. In cases where spending occurred outside the Dawson Creek area (such as airline fares and bus charters), these amounts were not included.

- **Participant Spending**

The other spending technique involved collecting information on the four categories of individuals who spent money in the community as a result of their involvement in the Games. This included the athletes, spectators, volunteers, and billet families. A sample of individuals in each of these categories were interviewed about their Games related spending.

Assistance in coordination of the interviewing process was provided by the Dawson Creek Economic Development Co-ordinator and the Reverend of the Dawson Creek Community Church. Interviewing was undertaken by members of the Dawson Creek Community Church.

A group of twelve interviewers were given a training session prior to the start of the Games. The purpose of the analysis was explained and discussed. Each person was assigned various venues to attend over the three days of the Games, and given questionnaire forms to record the interview results of a sample of athletes (including coaches and officials), spectators and volunteers.

Completed questionnaires were edited for completeness, and codes attached to the sports and to the sport zones. Each questionnaire was numbered and entered into *SurveyIt*, a survey analysis software package. Frequency distributions were produced for each question and a select number of cross tabulations prepared.

- **Supply Analysis**

A third technique was also used as a check on the survey expenditure data. This involved a survey of hotels and motels to determine the number of room nights that were rented to people involved with the Games (i.e., adult athletes, family members of youth athletes, or other spectators). The information on room nights and average room rates was tabulated to produce a total room revenue figure. Based on tourism industry norms, this accommodation revenue was used to estimate total expenditures on other travel related services (i.e., restaurant meals, entertainment, recreation, transportation, etc.).

2.0 PARTICIPANT EXPENDITURES

2.1 ATHLETES/COACHES/OFFICIALS

2.1.1 Analysis Method

The number of athletes/coaches/officials participating in the Games were obtained from the Games organizers. The total spending was estimated by interviewing a sample of these participants and asking them about their Games related expenditures. Interviewers were stationed at most venues (14 of the 23 sport venues), focusing on the most popular ones to improve the response rate. A total of 91 questionnaires were completed, representing 5% of the athletes.

Average spending was calculated from this athlete survey sample. This figure was multiplied by the number of athletes/coaches/officials to get their total spending. A total of 1,660 athletes participated in the Games, in addition to 168 coaches and 55 officials, for a total of 1,883 individuals. The distribution of athletes by sport is as follows:

**Table 2-1
List of Sports and Number of Athletes**

Sport/Activity	Athletes	Venue Location
Archery - Jr & Adult	61	South Peace Sr. Sec.
Badminton	76	South Peace Sr. Sec. & Central Middle Sch.
Basketball - Ladies	39	Ecole Frank Ross
Bowling -Spec. O & Mixed	73	Bowling Alley
Carpet Bowling	28	Senior Citizens Hall
Curling - Jr, M, F, & Mixed	93	DC Curling Rink
Darts	60	Royal Canadian Legion
Figure Skating	110	Kids Kin Arena
Floor Curling	24	Sr. Citizens Hall
Futsal	62	NL College
Gymnastics	91	Notre Dane School
Hockey - Pee Wee	132	Kids Kin Arena
Hockey - Ladies	94	Kids Kin Arena
Skiing - Cross Country	36	Bear Mtn. Nordic
Sled Dog Races	NA	Exhibition Ground
Snowshoeing -Spec. Olym.	21	Kin Park 110 Ave
Soccer - Jr., Sr. & Ladies	251	Trembley & Canalta
Speed Skating	63	DC Oval
Sporting Clays	51	Pinehurst SC
Swimming	108	Centennial Pool
Synchro Swimming	29	Centennial Pool
Volleyball - Mixed	48	Mtn. Christian School
Wrestling	110	The Ark
Total	1,660	

2.1.2 Athlete/Coach/Official Characteristics

- Most of the athletes interviewed (87%) were from outside Dawson Creek, and the distribution of the out of town athletes is as follows:

<u>Zone</u>	<u>Name</u>	<u>% of Total Interviewed</u>	<u>% of Non-Local Interviewed</u>	<u>Total Athletes</u>
A	Peace River Liard	24%	29%	415
B	Kitimat Stikine	9%	11%	122
C	Bulkley Nechako	11%	13%	216
D	Fraser Fort George	22%	26%	308
E	North Coast	4%	5%	94
F	Cariboo	13%	16%	167
	Queen Charlottes	0%	-	90
	Other Non Local	0%	-	-
	Local	17%	-	248
	Total	100%	100%	1,660

- Nearly all persons interviewed (85%), were taking part in the Games as athletes. The remainder were either officials, or coaches.
- Most athletes/coaches/officials (86%) were spending all three days at the Games. The average number was 2.9 days.
- Two thirds of athletes/coaches/officials (67%) had friends or relatives come to the event to watch them. The average number of spectating friends and relatives was 2.7.

2.1.3 Athlete/Coach/Official Expenditures

- Nearly all athletes (98%) said they would be spending some money while participating in the Games.
- Most athletes (57%) indicated that these expenditures covered only their own spending, while the remainder indicated that their expenditures covered persons in addition to themselves. The average number of persons covered by the expenditure estimates was 2.6.

**Table 2-2
Athlete/Coach/Official Expenditures by Category**

Category	Description	Average
Accommodation	Most persons (78%) spent nothing as they were local residents, being billeted, or staying with friends or relatives.	\$17.27
Automobile and Gas	67% spent nothing, while 21% spent under \$30.	\$11.08
Concession	34% spent nothing, while nearly half spent up to \$10.	\$7.06
Gifts and Souvenirs	37% spent nothing, while 38% spent up to \$20.	\$16.52
Local Transportation	97% spent nothing.	\$0.20
Groceries	85% spent nothing, while 10% spent up to \$20.	\$2.52
Restaurant Meals	20% spent nothing, 40% spent up to \$20. while 25% spent between \$40 and \$80.	\$30.80
Recreation and Entertainment	74% spent nothing, while 13% spent up to \$10.	\$6.29
Retail Shopping	60% spent nothing, while 22% spent up to \$20	\$15.88
Other	Very little was spent on other goods and services as 93% spent nothing.	\$5.69
Total		\$113.31

- The average amount of money spent per person was \$113.31. Average spending ranged from nothing to several hundred dollars.
- As anticipated, participants from out of town spent considerably more than those who lived in Dawson Creek, as noted below:
 - Non Residents \$115.25
 - Residents \$40.22
- The total amount of money spent by athletes was estimated to be **\$213,400** (i.e., \$113.31 x 1,883).

2.2 SPECTATORS

2.2.1 Analysis Method

To calculate the total spectator spending, the number of spectators was multiplied by the average spending per spectator. Average spending was obtained from interviews with a sample of spectators. (A total of 229 spectators were interviewed at a selection of 16 venues.)

Since tickets were not sold for the events and entrance counts not taken, a method was needed to calculate the total number of spectators. This number needed to count the number of unique individuals so as to avoid double counting persons who attended more than one event. Two methods have been employed. One approach uses a spectator turn-over ratio. The other uses information on the proposition of spectators who came to watch friends or relatives.

- **Spectator Turn-over Ratio Approach**

The total number of spectators is the product of the peak number of spectators at each venue times the spectator turn-over ratio. This is represented by the formula:

Total Spectators = Peak Number of Spectators x Spectator Turn-Over Ratio

The peak number of spectators at each venue was determined by periodic counts over the course of the Games. This was verified by discussions with the on-site volunteers and hosts to estimate the maximum number of attendees at each venue. It is noted that this figure was the number of dedicated spectators and not athletes who were watching other competitors.

A spectator turn-over ratio was determined by asking each spectator the number of events they were watching and the number of days they were at the Games. The turn-over ratio became the quotient of the number of days at the Games divided by the number of events (different sports) attended. By definition, this index can not be greater than one. The turn-over ratio generated from the sample of spectators interviewed was applied to the sum of the peak spectator estimate for each venue. This approach produced an estimate of the total number of unique spectators who attended events at the Dawson Creek Games.

- **Participant Induced Spectator Approach**

The total number of spectators at the Games can be defined as the number that came to watch friends and relatives plus those who did not. This relationship is represented by the formula:

Total Spectators = Participant Induced + Non-Participant Induced

The participant induced spectators can be calculated from information contained in the Participant questionnaire. Question 6 records the number of persons who attended the Games to watch their friends or relatives. Anecdotal information supplied by spectators indicated the average number of athletes they came to watch. Multiplying the average number of spectators per participant times the registered number of participants, and dividing by the average number of participants per spectator equals the number of Participant Induced Spectators.

The ratio of the number of participant induced (yes to questions 6) versus non participant induced spectators (no to question 6) is known. Applying these ratios against the estimated number of Participant Induced Spectators allows the total number of spectators to be calculated.

2.2.2 Spectator Counts

The peak number of spectators who attended each venue are illustrated below.

**Table 2-3
Peak Spectator Counts by Venue**

Sport/Activity	Athletes	Peak Spectator Counts
Archery - Jr & Adult	61	50
Badminton	76	25 + 30 (two venues)
Basketball - Ladies	39	40
Bowling -Spec. O & Mixed	73	50
Carpet Bowling	28	50
Curling - Jr, M, F, & Mixed	93	150
Darts	60	10
Figure Skating	110	140
Floor Curling	24	50
Futsal	562	40
Gymnastics	91	100
Hockey - Pee Wee	132	350
Hockey - Ladies	94	140
Skiing - Cross Country	36	10
Sled Dog Races	NA	60
Snowshoeing -Spec. Olym.	21	30
Soccer - Jr., Sr. & Ladies	251	25
Speed Skating	63	25
Sporting Clays	51	10
Swimming	108	35
Synchro Swimming	29	15
Volleyball - Mixed	48	250
Wrestling	110	30
Total	1,660	1715

- The total peak spectator count was 1,715. The calculated spectator turn-over rate was 0.73, or expressed differently, each spectator attended 1.27 different events.

Consequently, the total number of unique individual spectators was estimated to be 1,252 (i.e., 1715 x 0.73).

- The athlete induced spectator count produced a similar total of 845 athlete induced and 416 non spectator induced spectators for a total of 1,261. This total was based on the following information:
 - 2.7 spectators per athlete (Question 6 - Participant Survey)
 - 4.0 athletes per spectator (Anecdotal information)
 - 67% of spectators were athlete induced (Question 6 - Participant Survey)

2.2.3 Spectator Characteristics

- Most spectators (60%) lived in Dawson Creek.
- The non-local spectators came from all six northern BC sport zones, as described below.

<u>Zone</u>	<u>Name</u>	<u>% of Total</u>	<u>% of Non-Local</u>
A	Peace River Liard	19%	47%
B	Kitimat Stikine	1%	2%
C	Bulkley Nechako	4%	11%
D	Fraser Fort George	3%	7%
E	North Coast	<1%	1%
F	Cariboo	7%	18%
	Other Local	6%	14%
	Non-Local	60%	-
	Total	100%	100%

- The Games were the main reason that nearly all (95%) of the non-local spectators, visited Dawson Creek.
- Nearly half of the spectators (47%) were watching the Games for two days, and another 40% were in town for three days. The average length of stay in Dawson Creek was 2.3 days.
- More spectators did not attend the Opening Ceremonies (57%) than did (43%).
- Three quarters (75%) of the spectators were attending the Games to watch a friend or relative. The average size of a spectator party was 3.6 persons.

2.2.4 Spectator Expenditures

- Nine out of ten spectators (89%) spent money on goods and/or services while attending the Games. The following chart indicates the distribution of per person spending on a variety of categories.

**Table 2-4
Spectator Expenditures by Category**

Category	Description	Average
Accommodation	Most spectators spent nothing as they were local residents or were staying with friends or relatives.	\$10.37
Automobile and Gas	41% spent nothing, while 32% spent under \$10, and 13% spent between \$11 and \$20.	\$10.98
Concession	38% spent nothing, while over half spent up to \$10.	\$6.36
Gifts and Souvenirs	70% spent nothing, while 20% spent up to \$20.	\$7.58
Local Transportation	98% spent nothing.	\$0.19
Groceries	80% spent nothing, while 10% spent up to \$30.	\$7.78
Restaurant Meals	One third spent nothing, while 40% spent up to \$30.	\$24.55
Recreation and Entertainment	Four out of five persons spent nothing, while 10% spent up to \$30.	\$4.91
Retail Shopping	Most spectators (85%) spent nothing, while 10% spent up to \$50.	\$8.45
Other	Very little was spent on other goods and services as 95% spent nothing.	\$1.37
Total		\$82.54

- Spectators attending the Games had an average expenditures of \$82.54 during their stay in Dawson Creek.
- Expenditure patterns were significantly different between residents and non residents. Average expenditures were as follows:
 - Non-Local residents \$142.76
 - Local residents \$42.34
- Applying the average expenditures to the total number of spectators (i.e., 1,252) results in a total spectator spending total of **\$103,330** (i.e., \$82.54 x 1,252).

2.3 VOLUNTEERS

2.3.1 Analysis Method

As with the participants and spectators, volunteers were asked about their Games participation and related spending. A total of 927 volunteers were registered with the Games Society and 90 (approximately 10%) were interviewed at 16 of the 23 activity venues.

Volunteers were asked about the volunteer category in which they were working, the number of days they would be volunteering, whether they had any friends or relatives attending the Games, and their spending. Their average spending was multiplied by the known number of volunteers to estimate total spending by volunteers.

2.3.2 Volunteer Characteristics

- Volunteers were involved in the Games in a number of different capacities. The distribution of persons interviewed is as follows:

<u>Capacity</u>	<u>No. Interviewed</u>	<u>Percent</u>
Accommodation	11	12%
Administration	9	10%
Communications	0	0
Disabled Athlete Assist.	0	0
Finance	0	0
Human Resources	5	6%
Medical	8	9%
Opening Ceremonies	6	7%
Protocol	2	2%
Results Recording	3	3%
Security	15	16%
Sports	30	33%
Transportation	3	3%
Other	17	19%

Note: The percent adds to more than 100% due to individuals being involved in more than one category.

- One out of ten volunteers were working at the Games for one day only, while nearly half (47%) were working two days, and 42% worked three days.
- Just over four out of ten (43%) were a friend or relative of one of the Games participants.

2.3.3 Volunteer Expenditures

- Nine out of ten volunteers bought some goods and/or services while participating in the Games.

**Table 2-5
Volunteer Expenditures by Category**

Category	Description	Average
Accommodation	98% spend nothing.	\$1.57
Automobile and Gas	44% spent nothing, 35% spent up to \$20, while 15% spent between \$20 and \$40.	\$18.39
Concession	60% spent nothing, 22% spent up to \$10, while 17% spent between \$10 and \$30.	\$5.24
Gifts and Souvenirs	70% spent nothing, while 25% spent up to \$50.	\$12.62
Local Transportation	99% spent nothing, while one person spent over \$100.	\$2.53
Groceries	75% spent nothing, while 10 spent over \$90.	\$19.48
Restaurant Meals	66% spent nothing, 10% spent up to \$20, while 20% spent up to \$100.	\$13.73
Recreation and Entertainment	95% spent nothing, while the remainder spent up to 50%.	\$1.63
Retail Shopping	95% spent nothing, while 2% spent up to \$100.	\$3.26
Other	98% spent nothing while 1% spent over \$100.	\$5.80
Total		\$84.25

- The average expenditure by each Volunteer over the duration of the Games was \$84.25.
- The total expenditure of the 927 registered volunteers was **\$78,100** (i.e., \$84.25 x 927).

2.4 BILLET HOUSEHOLDS

2.4.1 Analysis Method

All athletes under 18 years of age were billeted with local families. A total of 277 households were registered as billets, and they housed a total of 856 athletes. The minimum number of billets per household was two and this was the most common number, however, several families took entire teams of up to ten billets. It was assumed that there would be some incremental costs involved for the host families, primarily for feeding the athletes and transporting them to their venues.

A small random sample of billet family names were provided by the Games organizers. These households were contacted on Sunday, February 8, 1998, and asked about their billet related expenditures. A total of 25 households were contacted and a total of 10 interviews completed. These sample billet households were responsible for 33 billets or 4% of the total number of billets.

2.4.2 Billet Household Expenditures

- Spending ranged from six dollars to 50 dollars per billet, and averaged \$27.86. This was the average for the three days of the Games.
- The total estimated Games related billet household spending was **\$23,850** (i.e., 856 x \$27.86).

3.0 GAMES SOCIETIES EXPENDITURES

3.1 DAWSON CREEK NORTHERN BC WINTER GAMES SOCIETY

The Dawson Creek Northern BC Winter Games Society was responsible for organizing and staging the Games. The Society included a number of different areas of focus (directorates) including accommodation, finance, social, communications, medical, public relations, security, transportation, volunteer and fundraising. The statement of accounts dated February 28, 1998 was used for this analysis although some additional expenses are expected.

Total revenues to the end of February were \$176,340. Total expenses were \$169,410. The majority of goods and services (estimated at 95%) have been purchased locally, resulting in total economic impact of **\$161,000**.

3.2 NORTHERN BC WINTER GAMES SOCIETY

The Northern BC Winter Games Society was involved in the Dawson Creek Games in an overseeing and general administrative capacity. Expenditures of Society board members in Dawson Creek included travel expenses for accommodation, meals and transportation. Their total local spending was **\$22,120**.

3.3 BC GAMES SOCIETY

BC Games Society related expenditures included the travel costs of various society representatives to visit Dawson Creek as part of their assistance to the Games organizers. The figures included all travel costs with the exception of airline fares, as this revenue would not accrue to the community. It included costs for time spent during the Games and for planning related trips prior to the Games.

Total expenditures in Dawson Creek by BC Games Society representatives were approximately **\$2,400**.

3.4 TOTAL GAMES SOCIETY LOCAL EXPENDITURES

- Dawson Creek Northern BC Winter Games Society	\$161,000
- Northern BC Winter Games Society	\$22,120
- BC Games Society	<u>\$2,400</u>
Total	\$185,520

4.0 SUPPLY SURVEY

4.1 ANALYSIS PROCEDURE

Economic impact evaluations can be conducted as “supply” or “demand” surveys. The analysis described above is referred to as a demand or consumer survey. It recorded the amount of money that was spent by various categories of individuals involved with the Games.

Another technique to estimate economic impact is to determine the amount of revenue that was received by the various businesses in Dawson Creek that supplied goods or services to persons participating in the Games. This is known as a supply survey. As a verification of the participant survey, consideration was given to conducting a supply survey. However, due to the large number and variety of businesses that could derive revenue from Game’s participants, a survey of a sample of all types was deemed to be impractical.

Given the three day duration of the Games, it was decided to conduct a survey of Dawson Creek’s hotels and motels to determine the number of incremental room nights that were sold as a result of the Games. Commercial accommodation is a key component of the travel industry and can be used as a proxy for tourist spending. The total room nights sold times the average room rate gives the revenue generated by the accommodation sector by Games participants. Using tourism industry spending norms, it is possible to estimate the total amount of revenue likely to have been generated by other sectors of the tourism industry as a result of the Games.

The Dawson Creek Service Guide (inserted in the Games participant kit) listed 14 hotels and motels, and 12 bed & breakfasts in Dawson Creek. On Sunday, February 8, 1998, interviews were conducted with the operators of 11 hotels and motels. This sample was estimated to represent 80% of the roofed tourist accommodation in the community.

Accommodation operators were asked about the number of rooms rented to Games related participants and the average double occupancy rate. (It is noted that given the high demand for crew accommodation by oil and gas exploration companies, accommodation was at a premium during the Games.)

4.2 REVENUE ESTIMATES

Total room rentals times the room rate resulted in an accommodation sector revenue of \$45,000. This includes the sample of hotels/motels contacted, aggregated to reflect all available transient accommodation rooms that would have been filled by Games related persons.

Tourism survey results in British Columbia reveal that accommodation spending typically represents approximately 20% of the total daily or trip expenditure. Other

expenditures occur on such items as restaurant meals, entertainment, shopping, recreation and transportation.

However, given an anticipated high incidence of out-of-town visitors staying in the homes of friends and relatives, the percentage figure used in the following calculations has been reduced to 15%. Consequently, the total revenues received by businesses in the Dawson Creek area, by Games related expenditures in the three days of the event, was an estimated **\$300,000**.

This supply survey revenue figure compares favourably with the demand survey figure. The comparison figure is the aggregated spending of the athletes/coaches/officials and spectators of \$316,730. The difference of approximately 5% is considered very good.

5.0 CONCLUSIONS

The 1998 Northern BC Winter Games created direct economic impact in Dawson Creek of over six hundred thousand dollars. Over two-thirds of this impact was created by the spending of Games participants, while one-third was contributed by Games Society organizers.

Direct spending within these two categories was as follows:

Spending by participants	\$418,680
Spending by organizers	<u>\$185,520</u>
Total	\$604,200

Direct spending by the participants was as follows:

Athletes/Coaches/Officials	\$213,400
Spectators	\$103,330
Volunteers	\$78,100
Billet households	<u>\$23,850</u>
Total	\$418,680

Direct spending in Dawson Creek by Games organizers was as follows:

Dawson Creek Northern BC Winter Games	\$161,000
Northern BC Winter Games Society	\$22,120
BC Games Society	<u>\$2,400</u>
Total	\$185,520

Spending by Games participants occurred over the three days of the Games during the first week of February. Spending by the Games organizers occurred over a longer period of time - prior to, during, and after the Games.

The survey techniques used to measure the economic impact of the Northern BC Winter Games have provided a defensible analysis process. Based on the survey sample sizes, the results are considered accurate to within +/- 5% for the total participant survey. Individual samples for the athletes, spectators and volunteers are considered accurate to within +/- 10%.

It is noted that the analysis focused entirely on direct spending. Additional indirect and induced effects would have been triggered by this direct spending. These impacts were not measured but would have marginally increased the overall economic impact.

APPENDICES

A QUESTIONNAIRES

B INTERVIEWER INSTRUCTIONS