



THE UNIVERSITY OF BRITISH COLUMBIA

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# **Olympic Games Impact (OGI) Study for the 2010 Olympic and Paralympic Winter Games Games-time Report**

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**Prepared by:**

The OGI-UBC Research Team:

Lead: Rob VanWynsberghe

(in alphabetical order)

Trisha Bischel

Mariana Gatzeva

Meredith Hambrock

Brenda Kwan

Clark Lim

**For:**

The Vancouver Organizing Committee for the 2010 Olympic and Paralympic Games (VANOC)

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## Executive Summary

This report is the third in a series of four reports on Olympic Games Impact (OGI) for the 2010 Olympic and Paralympic Winter Games (2010 Winter Games). The current OGI report focuses on event indicators.

### Methods

Data were collected from various sources, depending on the requirements for each indicator. The OGI Technical Manual suggests the OCOG (VANOC) as the source of data for some indicators. For these indicators, the OGI-UBC team first sought to obtain data from VANOC, and when data were not available, sought 'alternative' data that as closely matched the purpose of the indicator as possible (alternative data are were always available). For indicators that required data from sources other than VANOC, the OGI-UBC team sought reliable sources such as statistical agencies, etc. In a few cases, primary data were required and the OGI-UBC team commissioned a survey company to collect the data.

While a lot of data were obtained, in some cases no data could be found; these are identified as 'DNAA' (Data Not Available or Accessible).

### Summary of Socio-cultural Outcomes

#### Awareness of and Support for the Games

##### *Government*

The governments of Vancouver, Whistler, British Columbia, and Canada all showed support for the 2010 Winter Games through their votes and policies and programs. Although political involvement by members of VANOC's Board of Directors was prohibited, over one half of the VANOC Board members were appointed by government (So25). Not only did governments vote in favour of Games-related bills/by-laws (So27), they did not defer or abandon any public policies in favour of the Games but rather created new policies and projects to leverage the Games (So26), including a program for excellence in sport that most likely increased the number of medals won by Canadian athletes (So37). Finally, governments supported the Games by funding services that were key to the success of the Games, such as security, etc. (So42).

##### *Public*

Public support for and opposition to the Games occurred during the bid stage and continued through the Games-time period. During the bid, a Vancouver plebiscite showed that 64% of those who voted were in favour of the Games, which means that a not-so-insignificant proportion (36%) opposed the Games (So27). Public opposition was also evidenced by the existence of several pressure groups in the lead up to the Games (So3). Although opinion polls showed a generally positive perception of the Games in Canada, some dissatisfaction was also reported (So29). Continued support was evidenced during the Games by the number of people who volunteered for the Games (So38), by the large number of spectators at Games events and ceremonies (So39), and by the large proportion of Net Sellable tickets for Olympic Games events that were sold to the general public (So40). The public was generally more familiar with the logo and mascots for the Olympic Games than the logo and mascots for the Paralympic Games (So35).

### *Media*

The host was generally portrayed positively in the international media, especially towards the end of the Games (So43).

### **Inclusion**

#### *Minorities and Indigenous Groups*

VANOC attempted to include minorities and indigenous groups during the bidding, planning and staging of the Games. For example, VANOC consulted with a variety of groups (So28), hired minorities as part of its workforce (So30), implemented educational activities that included the Paralympics (So32), provided for accessibility in the venues (So47), made available some tickets that were more 'affordable' (So40), and implemented programs to increase awareness about and promote these groups (So41). Data from the opinion polls suggest that public awareness of people with disabilities increased shortly after the Games (So29).

Although there was no new data related to homelessness and affordable housing since the Pre-Games Report, it is possible that media attention and local advocacy efforts have catalyzed government efforts to address the issues of homelessness and affordable housing (So31).

During the Games, there were minimal incidents related to racism, discrimination or violence in sport (So36).

#### *Arts and Culture*

Arts and culture appeared to be a significant aspect of the hosting of the 2010 Games, based on the number of art designers and participants (So33) and the increase in budget and visitors in each consecutive year of the official cultural program (So34).

## **Summary of Economic Outcomes**

### **Financing the Games**

#### *Olympic-specific Activities*

The OCOG actual revenues did not differ drastically from the forward revenues (Ec33), nor did OCOG actual expenditures (\$1.8 billion CAD) differ much from the forward expenditures (Ec34). The largest share of revenues was from local/national sponsorships and from IOC contributions (Ec33). The largest share of expenditures was for venue operations and information systems (Ec34). The cost of operating the 2010 Winter Games was over three times the cost of capital investment on venue development (Ec40). In terms of share of total capital costs, significantly more was spent on major venue construction projects than on renovations; however, all venues are planned as permanent legacies (Ec40).

Venue development (capital expenditures) was funded almost exclusively by governments (96.9 percent). Total operational expenditures included expenditures by VANOC and by governments separately, and were approximately split in half between governments (46.5 percent) and VANOC (Ec41). Among governments, the higher levels – provincial and federal – spent the most overall (includes both capital and operational expenditures).

The number of Olympic vehicles was highest during the Games with a vehicle fleet of 4,667 vehicles and a motor coach fleet of over 1,000 vehicles (Ec31). Although the motor coach fleet was less than a quarter of the size of the vehicle fleet during Games-time, it cost more than twice as much to operate the motor coach fleet (\$92.6 million CAD) than it did to operate the vehicle fleet (\$43 million CAD).

### *Supportive Context Activities*

The building or upgrading of local infrastructure to accommodate the Games is considered a context rather than an Olympic activity. Three projects (transportation and convention centre), all of which were already planned but spearheaded to accommodate the 2010 Winter Games, together cost over \$3.7 billion CAD, which is about twice as much as it cost the OCOG for Olympic activities (Ec37). The public share of expenditure on these projects was generally large (Ec42). Vancouver benefited the most from these projects, followed by specific regions in BC (Whistler and Richmond) (Ec37, Ec39).

### **Economic Impacts**

#### *Tourists and Cargo*

Increases in YVR airport traffic (passenger and freight) (Ec10) and in visitor spending (Ec32) around the time of the Games are both potentially due to the 2010 Winter Games.

#### *Prices*

Increases in the cost of hotel stays (Ec17) and in real estate prices (Ec18) in the year 2010 (when the Games were held) are both potentially due to the Games.

#### *Businesses and Employment*

The creation of new businesses (Ec29) and new jobs (Ec27) are potentially related to the Games, although not necessarily for Olympic-specific activities. The businesses contracted by the OCOG appeared to be carrying out sustainability practices (Ec30). Seventy-five percent of the OCOG operating expenditures were spent in BC (vs. the rest of the country or abroad) (Ec35), while all venue development (capital expenditures) benefited Vancouver and Whistler (Ec36). These expenditures on Olympic activities locally/regionally most likely benefited businesses and created employment. The OCOG paid a total of \$298 million CAD in wages for Olympic activities (Ec38).

#### *Public Sector*

The public sector is estimated to have benefited by at least \$50 million CAD in total tax revenue from Olympic activities (Ec43) (note: this is a very conservative estimate due to lack of detailed data).

The impact on the public sector may also be observed at the level of the composition of the OCOG by sector. The subsequent activities of members of the OCOG Board of Directors showed a decrease in activity in the public sector and in the private sector, and an increase in the share of individuals who participated in mixed public/private sector activities after leaving the OCOG (Ec28).

## **Summary of Environmental Outcomes**

### **Consumption**

#### *Land Use*

Olympic venues were either upgrades to pre-existing event venues or were constructed on previously harvested or industrial lands (En21). Less than half the venues were in or near protected sites (En22). Various compensation measures were implemented to minimize impact of venue construction on nature.



Venue construction and upgrades led to an increase in the seating capacity of venues during the Games (En26), while land use for the construction of the Olympic and Paralympic Villages increased the floor area of housing (En24).

### *Transportation*

Three transport infrastructure projects (one Olympic, two context) were implemented in the city and in the region (En29). The three projects together cost a total of over \$2.5 billion. One project was temporary and the other two projects are intended to accommodate transport for a longer-term.

During the Games, travel into and out of the downtown core (where many Games-related events were held) increased (En30). During this period, the share of sustainable modes of travel into and out of the downtown core also increased to become the dominant mode over personal vehicular travel.

### *Food*

Most of the food sold or distributed at the venues originated from within Canada, while all the organic food originated locally from Metro Vancouver and Whistler (En23).

### *Energy*

Olympic-related energy consumption during the Games was almost an equal share between fossil fuels and renewable sources (En31). Most of the energy (80%) was used for venues and facilities, especially during the Games.

### **Waste**

Due to the unavailability of data on air quality, no conclusions can be made past 2007, and especially during Games-time (up to 2007, construction and other Games-related activities may have increased Air Quality Health Index – a negative impact – in Whistler/Squamish but not for Metro Vancouver) (En5). Data from VANOC showed that Olympic-related greenhouse gas emissions increased every year since 2005, with an eight-fold increase during Games-time, mainly due to transportation to get to Vancouver/Canada (En20).

Due to the unavailability of data on water quality, no conclusions can be made past 2006, and especially during Games-time (the Games were unlikely to have affected water quality up to 2006) (En3).

Solid waste produced during the Games-time reporting period was ten times as much as the amount of solid waste produced during the previous period (En32). The share of waste that was re-used, recycled, or composted increased during the Games-time reporting period.

The 2010 Winter Games do not appear to have affected the upgrading or constructing of waste and wastewater treatment facilities in the Vancouver area, but had spurred the construction of facilities in Whistler (En33).

### **Life-cycle (Inputs and Outputs)**

In terms of life-cycle of the venues (En27), both inputs and outputs were larger for the Richmond Oval (which was a new building) than for the Dough Mitchell Thunderbird Sports Centre (which was partly demolished with new construction added). Except for raw materials used for the Oval, carcass work constituted the largest share of all life-cycle phases for both inputs and outputs for both venues. By weight, concrete constituted a significant share of materials used in construction of both venues.

Data on the operation and maintenance of the venues (En28) and on the life-cycle of the Games overall (En34) were largely unavailable.

## **Overall Summary and Looking Forward**

The most notable socio-cultural findings are the inclusion of minority groups (consultation, employment, cultural and education programs) as part of the planning and staging of the 2010 Winter Games, and support from governments and volunteers.

The most notable economic findings are the large government investments for both Olympic activities and context activities to support the 2010 Winter Games (benefiting mostly the Vancouver and Whistler regions), economic stimulation in terms of the creation of businesses and jobs, and a concomitant increase in the price of selected goods (hotels, real estate).

The most notable environmental findings are that Games-time consumption and waste often exceeded pre-Games numbers considerably (however, this is not surprising given the increased activity during event-time), that VANOC implemented strategies to minimize negative environmental impacts, and that more sustainable practices were observed during Games-time, such as a larger share of sustainable modes of travel into and out of the Vancouver downtown core and a larger share of waste being recycled, re-used and composted.

Some cross-sphere linkages between indicators were presented to highlight that hosting the Games requires inputs which then lead to outputs. These linkages are the basis of discussions that attempt to answer two questions. First, what value (e.g., legacies) was generated by the investment (e.g., money, time)? Second, how ‘sustainable’ were the 2010 Winter Games?

This report shows through the use of event indicators that the Games-time period is different than the pre-Games period. The final Post-Games Report in 2013 will report on impacts in the larger context of the host over the complete 12-year reporting period. The final analysis will be able to monitor potential time-limited or time-specific impacts or longer-time impacts (if any) of the 2010 Winter Games. The Post-Games Report will also further the discussion about value-for-investment and the sustainability of the 2010 Winter Games.

## 1. Introduction

This report is the third in a series of four reports on Olympic Games Impact (OGI) for the 2010 Olympic and Paralympic Winter Games.

### 1.1. What is the Olympic Games Impact (OGI) Study?

The Olympic Games Impact (OGI) Study was developed by the International Olympic Committee (IOC) as an objective and scientific analysis of the impact for each edition of the Olympic Games and to help bidding and future Olympic organizers identify potential legacies in order to maximize the benefits of hosting the Games.

The IOC provides the Games organizers with a reference document – the *Technical Manual on Games Impact* (2007)<sup>1</sup> – that gives guidance on what is to be measured and how.

A total of 126 indicators are used in the OGI study to measure impact. These indicators measure impact across three topic areas or spheres – social, economic, and environmental.

The OGI indicators are also categorized as context, event, or both. Context indicators relate to the environment in which the Games are staged. Event indicators relate directly to the Games. The distinction between context and event are not absolute and therefore some indicators are categorized as both.

The OGI indicators are also measured for different scales, generally reflecting the city, region, and country levels.

A series of four OGI reports are produced that reflect a twelve-year study period that begins two years before Host City Election and ends three years after the Games. The first baseline report presents context data from two years before Host City Election. Two years prior to the Games, a second report (pre-Games) updates the context data. One year after the Games, a third report (Games-time) presents event indicators. Finally, three years after the Games, the fourth report interprets all the indicators together over time.

### 1.2. The OGI Study for the 2010 Winter Games

The 2010 Winter Games in Vancouver/Whistler are the first edition of the Olympic and Paralympic Games to be contractually required to complete the OGI study.

The current OGI report is the third in a series of four reports and constitutes part of the Official Report for the 2010 Winter Games. The current OGI report focuses on the event indicators.

#### 1.2.1. Key Players in the OGI Process

All OGI reports are prepared for the IOC. The Host, in this case the Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games (VANOC), coordinates the OGI study. An independent research partner, in this case the University of British Columbia (OGI-UBC), was contracted to conduct the study, including the collection, analysis, and interpretation of data and the preparation of the report. After the Games are staged, the organizing committee (VANOC) is dissolved and the national Olympic committee, in this case the Canadian Olympic Committee, takes over coordination of the rest of the OGI study.

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<sup>1</sup> International Olympic Committee (2007). *Technical Manual on Olympic Games Impact*. Lausanne, Switzerland.

### **1.2.2. Organization of the Current OGI Games-time Report**

This report is organized into sections that reflect the three spheres of impact – socio-cultural, economic, and environmental. For each sphere, the respective event indicators are reported on first, followed by indicators that are categorized as both context and event, and then a summary of the findings for each sphere. Finally, an integrative summary of Games-time impacts across all three spheres is provided

## 2. Methods

The reporting structure for each indicator is in the following order.

- The purpose of the indicator, as stated in the OGI Technical Manual, is presented.
- The required data for the indicator, as outlined in the OGI Technical Manual, is presented.
- The data that were actually available (or not) are identified.
- The data are presented, usually in the form of a table accompanied by a textual description.
- Finally, a summary of the findings in relation to the purpose of the indicator is provided.

### 2.1. Data Collection

As with any undertaking of the size and nature of the OGI study, data collection poses various challenges.

The OGI study generally relies on three types of data sources – data from the OCOG (either collected as primary data or obtained from third parties that the OCOG deals with in planning and staging the Games), secondary data from reliable sources (e.g., statistical agencies, government), and primary data collected by the OGI research team (e.g., opinion polls). Each type of data source poses challenges but these challenges can to a degree be addressed.

Obtaining data from the OCOG requires first an understanding from the OCOG of the importance of the OGI study in informing the IOC about the impacts of the Olympic and Paralympic Games. Without this understanding, an OCOG is less likely to integrate the OGI study into its planning or its monitoring or reporting systems. Early planning also allows for the OCOG to discuss with third parties how relevant data from the third parties could be collected (e.g., for En27 on the life-cycle of venues).

Secondary data from sources such as government and statistical agencies, although reliable, may be collected on a regular schedule that does not coincide with the OGI reporting period. For example, census data might be collected every 5 years, whereas OGI data might be required annually; in these cases, not much can be done. However, in cases where secondary data are reported on a larger scale, the data agency can be contacted to check whether the data agency can provide smaller-level data, such as data specific to the host city.

Primary data such as opinion polls and from media monitoring services provide focused data but are costly to commission. If primary data are to be collected, the OGI budget should take the collection of primary data into account.

Efforts were made to seek out the data sources specified in the OGI Technical Manual or from a suitable alternative source. When the required data were not publicly available (e.g., through the Internet), contact with the data source was initiated. However, contact does not guarantee a reply and after four attempts at establishing contact (which includes leaving phone and/or email messages), alternative sources of data are sought. Data may not be obtained for a variety of reasons, including: the required data may never have been collected at all; the required data may have been collected but not processed/analyzed yet; and the required data may have been somewhere but the OGI-UBC team was unable to make a connection with the data source (not due to lack of trying) to be about to find out. While a lot of data were obtained, in some cases no data could be found; these are identified as ‘DNAA’ (Data Not Available or Accessible).

## **2.2. Data Analysis**

The analysis of event indicators often leads to dramatic differences between Games-time and pre-Games periods, which are to be expected (and hardly surprising) given the influx of spectators and the staging of multiple events over a span of several weeks. Therefore, using the pre-Games period as a ‘standard’ of comparison provides limited information on the sustainability of this edition of the Games for its size, location, and context. The Post-Games Report, to be completed in 2013, will attempt to provide some kind of standardization relative to the host city and global/local standards.

### 3. Social Indicators

The social impact sphere includes 18 event indicators and 3 content/event indicators.

#### 3.1. Event Social Indicators

##### So25: Political Involvement in the Organization of the Games

##### a) Data Discussion

The purpose of this indicator is to show the degree of involvement of the political system in the organization of the Olympic Games and Paralympic Games in the candidacy committee and in the organizing committee.

The required data is the number of political figures from government or party employees sitting on these bodies, broken down by party and by gender.

By mandate, political figures could not sit on VANOC's Board. Therefore, only data on political involvement as a Board member in the candidacy committee (i.e., the 2010 Bid Corporation) are given, broken down by political party and by gender (the source of the data was VANOC).

##### b) Data

##### So25: Political Involvement in the Vancouver 2010 Bid Corporation – Board Membership

Political Organisation	Women	Men	Total
Richmond Non Partisan Association <sup>1</sup>	0	1	1
Coalition of Progressive Electors (COPE) <sup>1</sup>	0	1	1
Independent Candidate	0	1	1
Liberal Party <sup>2</sup>	0	1	1
<i>Total</i>	<i>0</i>	<i>4</i>	<i>4</i>

<sup>1</sup> Municipal level.

<sup>2</sup> Provincial level.

##### c) Commentary

Only four political figures, who were all male, served on the ninety-six member Board of the Vancouver 2010 Bid Corporation. At about 4 percent of membership, the political involvement on the candidacy committee in the organization of the Games was not very strong. While political figures were excluded from membership on the organizing committee (VANOC), one half of the organizing committee (10 of the 20 members) were nominated by government – three members nominated by the Government of Canada, three by the Province of British Columbia, two by the City of Vancouver, and two by the Resort Municipality of Whistler.

## So26: Deferment and Abandonment of Public Policies

### a) Data Discussion

The purpose of this indicator is to reveal any abandonment, delay, or reorientation of public policy in favour of the Games.

The required data are the official names of public policies which are abandoned or deferred and the duration that they are abandoned or deferred, as gathered from parliamentary minutes and archives for the region and city. Moves in new directions may also be detected indirectly.

Official parliamentary minutes and archives of the Government of British Columbia from 1998 to the end of 2009 were accessed. Archives of by-laws of the governments of the City of Vancouver and the Resort Municipality of Whistler between 1998 and the end of 2009 were also accessed. Moves in new directions were indirectly detected by a search of the relevant governments' websites for policies and projects between 1998 and the end of 2009 that were explicitly stated as being newly created to take advantage of the 2010 Winter Games.

### b) Data

Based on the official minutes and archives from 1998 to the end of 2009, no public policies were recorded as having been abandoned or deferred in favour of the 2010 Winter Games for any of the governments (British Columbia, Vancouver, or Whistler).

See attachment for a list of public policies and projects that were explicitly stated as being newly created between 1998 and the end of 2009 to take advantage of the 2010 Winter Games.

### c) Commentary

Forty-four projects of the governments of British Columbia, Vancouver, and Whistler were explicitly stated as being newly created to take advantage of the 2010 Winter Games. Five of the 44 policies/projects were a partnership between one or more of these governments (an example is the Multi-party Agreement for the 2010 Winter Olympic and Paralympic Games).

There were two event specific policies with a quantifiable post games result – the South False Creek Community Benefits Agreement (CBA) and the Shared Legacies Agreement. The South East False Creek CBA was an initiative which trained and engaged 77 inner-city residents and brought them into the workforce. The Shared Legacies Agreement was a commitment to the Squamish First Nations and Lil'wat Nation of 300 acres of land, \$2.3 million for a skills and legacy training project, and \$3 million towards the construction of a recently opened Squamish Lil'wat Cultural Centre. The Shared Legacies Agreement fulfilled its commitments.

One modified policy is the pledged 252 units of social housing in the Vancouver Olympic Village. The number of social housing units has been reduced by about one half (April 2010) due to cost overruns related to construction and poor sales of high-end units. In December 2010 (nine months after the Games ended), people started moving into affordable units (run by the Co-operative Housing Federation of British Columbia) at the Olympic Village.

While official records suggest that no public policies were explicitly deferred or abandoned in favour of the 2010 Winter Games, the abundance of new policies/projects to take advantage of the Games reflect the redirection of public funds towards Games-related opportunities and away from other causes/purposes.



**So26 - Deferrment and Abandonment of Public Policies - Policies and Projects  
 Explicitly Created to Take Advantage of the 2010 Winter Games**

Public Policy	Government	Year
2010 Legacies Now	British Columbia, Vancouver, and Whistler <sup>1</sup>	2000
Shared Legacies Agreement	British Columbia <sup>1</sup>	2002
Multi-party Agreement for the 2010 Winter Olympic and Paralympic Games	British Columbia, Vancouver, and Whistler <sup>1</sup>	2002
2010 Vision for British Columbians with Disabilities	British Columbia and Vancouver	2003
Olympic Youth Legacy for Physical Activity, Sport, Culture, and the Arts (renamed in 2004 as Get Out!)	Vancouver	2003
Ensuring Vancouver's Olympic and Paralympic Legacy	Vancouver	2003
Spirit of BC	British Columbia <sup>1</sup>	2004
Whistler Museum Masterplan	Whistler	2004
2010 Commerce Centre	British Columbia	2004
Whistler2020	Whistler	2004
ActNow BC	British Columbia <sup>1</sup>	2005
Podium Canada (includes Own the Podium)	British Columbia <sup>1</sup>	2005
SportsFunder	British Columbia <sup>1</sup>	2006
Active Communities Vancouver	Vancouver <sup>1</sup>	2006
Project Civil City	Vancouver	2006
Olympic Legacy Affordable Housing (Memorandum of Understanding)	British Columbia <sup>1</sup>	2006
2010 Garden Plots by 2010	Vancouver <sup>1</sup>	2006
Celebration Plaza	Whistler <sup>1</sup>	2006
2010 Speakers' Bureau	British Columbia <sup>1</sup>	2006
2010 Olympic and Paralympic Winter Games Strategic Plan	Vancouver	2006
BC Explorer	British Columbia <sup>1</sup>	2006
BC-Canada Place Pavilion	British Columbia	2006
Arts Partners in Creative Development	British Columbia and Vancouver <sup>1</sup>	2007
Host a City Happening Community Grant Program	Vancouver	2007
South East False Creek Olympic Village Community Benefits Agreement	Vancouver <sup>1</sup>	2007
2010 Business Summits	British Columbia <sup>1</sup>	2007
2010 Winter Games Economic Opportunities Delivery Plan	Vancouver	2007
Legacy Reserve Fund	Vancouver	2007
Community Land Bank Agreement	British Columbia and Whistler <sup>1</sup>	2007
2010 Winter Games Sign Designation & Relaxation Bylaw 9687	Vancouver	2008
The Olympic Line - Vancouver 2010's Streetcar (Downtown Streetcar 2010 Demonstration Project)	Vancouver <sup>1</sup>	2008
Athletes' Village Loan Authorization Bylaw No. 1831	Whistler	2008
Investing in the Dream: 2010 Winter Games Budget	Whistler	2008
Taxation Exemption for Not-For-Profit Organizations Bylaw	Whistler	2008
2010 International Media Centre	British Columbia	2008
BC Regional Innovation Chair in Tourism and Sustainable Rural Development	British Columbia <sup>1</sup>	2008
British Columbia Showcase at Robson Square	British Columbia	2008
Share the Excitement!	British Columbia	2008
Olympic and Paralympic Public Art Program	Vancouver	2008
2010 Winter Games Building By-law Relaxation By-law 9747	Vancouver <sup>1</sup>	2008
2010 Winter Games Strategic Framework	Whistler	2008
Olympic and Paralympic Liquor License	Whistler	2008
BC Stories	British Columbia <sup>1</sup>	2008
Zoning Amendment Bylaw (Temporary Use Permits) No. 1877, 2008	Whistler	2009

<sup>1</sup> With external partner(s) - governmental or non-governmental.

## So27: Votes connected with the Olympic Games and Paralympic Games

### a) Data Discussion

The purpose of this indicator is to show the position of the political forces present on the various issues connected with the Games. Its annual evolution also reveals changes in the majority, consensus building or consolidation, and the emergence of political conflicts. Public votes reveal the public support for the Olympic and Paralympic Games and the level of public mobilization.

The required data are votes connected with the Olympic and Paralympic Games, which includes parliamentary votes and public votes (if the political system allows them), on the candidacy and its financing, and on any activities specific to or connected with the Olympic and Paralympic Games. For parliamentary votes, the votes can be broken down by party (provided they are not cast in a secret ballot). The number of votes for, against, and abstentions per party are recorded for each issue voted upon. The issue voted on is indicated by its official title. For each public vote (e.g., consultation, referendum, etc.), the percentage of votes in favour, opposed or blank and the turn-out rate are recorded. The subject of the vote is indicated by its official title and short description.

A search for the key word “Olympic” was conducted for parliamentary/council records of the Parliament of Canada, the Legislative Assembly of British Columbia, and the City Council of Vancouver. The official title, year, and a description of the issue are provided. Data on who voted (political party) and how they voted were generally not available in centralized or summary form, and therefore are not included.

### b) Data

See attachments.

### c) Commentary

Although data on who voted (political party) and how they voted on Olympic-related bills/by-laws were not available, most of the bills and by-laws shown in the Table were passed (except for the B.C. Bills M211 and M213, which had only gone through a first reading – in B.C. a Bill or proposed legislation is enacted only after it passes a third reading).

The issues voted on by public authorities pertained to Olympic and Paralympic trademarks, arts-related funding, funding to various regions in B.C. to invest in Olympic legacies, freedom of information, liquor licensing, and municipal-level regulations.

Support for the 2010 Winter Games by public authorities is also reflected in budget plans that were passed that included Games-related commitments (amongst other funding commitments).

During the bid stage, the City of Vancouver conducted a plebiscite in February 2003 to gauge public support for the City’s participation in hosting the Games. The plebiscite was a vote that was consultative rather than legally binding on the government of Vancouver. Of the eligible voters in the City of Vancouver, 46 percent voted. Of those who voted, the majority (64 percent) were in favour (36 percent opposed). (see:

<http://vancouver.ca/ctyclerk/olympicvote/olympicindex.htm>, accessed January 26, 2011)

In summary, the three levels of public authorities and those who voted in the Vancouver plebiscite appeared largely to show support for the 2010 Winter Games. What these findings

are unable to show is who (political party) did not support the Games. On the other hand, the Vancouver plebiscite did show that 34 percent of those who voted opposed the city's participation in hosting the Games.

## So27 - Votes Connected with the Olympic Games and Paralympic Games

Official Title	Year	Description
<i>Canada House Government Bills</i> <sup>1</sup>		
Bill C-47: Olympic and Paralympic Marks Act	2007	An Act respecting the protection of marks related to the Olympic Games and the Paralympic Games and protection against certain misleading business associations and making a related amendment to the Trade-marks Act.
<i>B.C. Bills</i> <sup>2</sup>		
Bill 23: Miscellaneous Statutes Amendment Act (No. 2), 2001	2001	The Olympics-related change (one of many changes to various Acts) is the addition of the Olympic Arts Fund as a special account under the Special Accounts and Appropriation and Control Act. The Olympic Arts Fund was designed to ensure that B.C.'s arts and cultural organizations have a role to play and are showcased as part of the 2010 Olympic and Paralympic Winter Games.
Bill 59: Northern Development Initiative Trust Act	2004	To create an account that may support investments in "Olympic opportunities" (amongst other legacy areas) in northern B.C.
Bill 7: North Island Coast Development Initiative Trust Act	2005	To create an account that may support investments in "Olympic opportunities" (amongst other legacy areas) in the North Island Coast of B.C.
Bill 8: Southern Interior Development Initiative Trust Act	2005	To create an account that may support investments in "Olympic opportunities" (amongst other legacy areas) in the Southern Interior of B.C.
Bill 2: Budget Measures Implementation Act	2008	The Olympics-related change (one of many changes) is that the Special Accounts and Appropriation and Control Act was revised to state that the Olympic Arts Fund special account will be continued as the Arts Legacy Fund Sub-account. (see Bill 23 above).
M213: Freedom of Information and Protection of Privacy Amendment Act, 2008	2008	Private Members' Bill (first reading only, May 20, 2008) to add VANOC as a "public body" as defined in the Freedom of Information and Protection of Privacy Act to make public bodies more open and accountable by providing the public with a legislated right of access to government records; and to protect individuals' right to personal privacy by prohibiting the unauthorized collection, use or disclosure of individuals' personal information by public bodies.
Bill 17: Public Safety and Solicitor General (Gift Card Certainty) Statutes Amendment Act, 2008	2008	The Olympics-related changes (one of many to various Acts) are additions to the Liquor Control and Licensing Act regarding Olympic/Paralympic liquor licensing.
M211: Open Government Act, 2010	2010	Private Members' Bill (1st reading only, June 2, 2010) to add VANOC as a "public body" as defined in the Freedom of Information and Protection of Privacy Act. (see M213 above)

<sup>1</sup> Search for the key word "Olympic" in bills from January 17, 1994 to January 26, 2011 of the Parliament of Canada (<http://www.parl.gc.ca/common/index.asp?language=E>, accessed January 26, 2011).

<sup>2</sup> Search for the key word "Olympic" in bills from 1992 to 2010 of the Legislative Assembly of B.C. (<http://www.leg.bc.ca/>, accessed January 26, 2011).

## So27 - Votes Connected with the Olympic Games and Paralympic Games (continued)

Official Title	Year	Description
<i>Vancouver By-laws</i> <sup>3</sup>		
By-law no. 8619: Olympic Winter Games & Paralympic Plebiscite By-law	2002	To undertake a plebiscite regarding the 2010 Olympic Winter Games and Paralympics Winter Games, to amend the Election Procedures By-law, and to repeal the Voting Divisions By-law.
By-law no. 9697: 2010 Winter Games Sign Designation and Relaxation By-law	2008	Regarding designation of a special event and relaxations of the Sign By-law for the Vancouver 2010 Olympic and Paralympic Winter Games
By-law no. 9747: 2010 Winter Games Building By-law Relaxation By-law	2008	To relax Building By-law No. 9419 regarding the regulation of special event facilities for the Vancouver 2010 Olympic and Paralympic Winter Games
By-laws no. 9836, 9843, 9908 and 9962: Vancouver 2010 Olympic and Paralympic Winter Games By-law	2009	Relates to buildings, city-land regulation, graffiti, licenses, noise control, signs, street distribution of publications, street and traffic, ticket offences, vehicles for hire, zoning and development, and offences and penalties and enforcement.
<i>Vancouver public vote</i> <sup>4</sup>		
Plebiscite: Olympic Vote	2003	"Do you support or do you oppose the City of Vancouver's participation in hosting the 2010 Olympic Winter Games and Paralympic Winter Games? YES, I support the City of Vancouver's participation. NO, I oppose the City of Vancouver's participation."

<sup>3</sup> Search for key word "Olympic" in the by-laws of the City of Vancouver ([http://vancouver.ca/bylaw\\_wa/](http://vancouver.ca/bylaw_wa/), accessed January 26, 2011). Excludes housekeeping amendment by-laws.

<sup>4</sup> From the City of Vancouver website on the Olympic Vote Process (<http://vancouver.ca/ctyclerk/olympicvote/olympicindex.htm>, accessed January 26, 2011).

So28: Consultation with Specific Groups
a) Data Discussion
<p>The purpose of this indicator is to highlight the potential of the public authorities, the candidacy committee, and the organizing committee to transform the social customs of “specific groups.” In the Technical Manual, “specific groups” is defined as any group with particular expectations and characteristics reflected or defined by a geographical area, by an ethnic origin, or by a particular topic (environmental, social or economic) in relation with the Olympic and Paralympic Games. These groups may either support or oppose the Olympic or Paralympic Games.</p> <p>The required data are the number of consultations with these groups, broken down by year, group, subject, and originators of the consultations.</p> <p>Data from VANOC were available only for the organizing committee for the years 2008, 2009, and 2010.</p>
b) Data
See attachment.
c) Commentary
<p>VANOC was the originator of all the consultations described below. These groups should be distinguished from those listed in So3 (see page 70), which outlined groups that were protesting or monitoring the Games (but not necessarily consulted).</p> <p>At the city level, VANOC consulted with one group named the Inner-city Working Group (ICWG). The ICWG is comprised of AccessWORKS, Building Opportunities with Business, Fast-Track to Employment Coalition, The Tradeworks Training Society and ACCESS. VANOC consulted with the ICWG 25 times between 2008 and 2010 (with only one meeting in 2010).</p> <p>At the provincial level, VANOC consulted with six groups: the Environmental Non-Government Organization (ENGO) Dialogue Group; Sustainability Practitioners; VANOC Workforce; the Four Host First Nations (FHFN); National Aboriginal Groups; and Aboriginal Employment and Training Organizations (AETO). There were 107 consultation meetings with these groups in 2008 (46 percent of them with AETO, and about a quarter each with FHFN and the National Aboriginal Groups). In 2009, there were 69 consultations, again the largest number with AETO (about 40 percent). In 2010, there were 104 consultation meetings, of which the largest number was with the National Aboriginal Groups (nearly half of all meetings) and about 40 percent with AETO.</p> <p>The ENGO Dialogue Group is comprised of 19 groups: Westcoast Environmental Law; CityGreen; David Suzuki Foundation; The Land Conservancy; Ecotrust Canada; AWARE; City Farmer; Sierra Club of Canada – B.C. Chapter; Western Canada Wilderness Committee; BCSEA; SmartGrowth; Better Environmentally Sound Transportation; Georgia Strait Alliance; ForestEthics; Recycling Council of B.C.; Pembina Institute; WWF Canada; The Nature Conservancy of Canada – B.C. Chapter; and ForEd BC.</p> <p>The National Aboriginal Organizations group is made up of the Assembly of First Nations, Inuit</p>

Tapiriit Kanatami, and the Metis National Council/Metis Nation of B.C.

The Four Host First Nations are the Lil'wat Nation, the Musqueam Nation, the Squamish Nation, and the Tsleil-waututh Nation. In addition to VANOC, it should be noted that the Province of British Columbia (a public authority) and the 2010 Vancouver Bid Corporation (the candidacy committee) also consulted with Squamish First Nations and Lil'wat Nation. The consultations led to the November 2002 signing of the Shared Legacies Agreement, which outlines a package of legacies and benefits for the Nations related to the 2010 Winter Games, including land for economic development opportunities, skills training, funding for constructing the Squamish Lil'wat Cultural Centre, and legacy housing (from the Olympic Village) (see <http://www.slcc.ca/>). This 2002 Agreement extends the partnership that was formalized in March 2001 with the Protocol Agreement between the two Nations to cooperate with each other with respect to economic opportunities, establish a clear First Nation presence in their traditional territory, and protect their respective Aboriginal rights and title.

In 2008, the AETO included the Province of B.C. – Ministry of Small Business, Technology and Economic Development, the Aboriginal Human Resource Development Council, ACCESS, the First Nations Employment Society, the Metis Nation of B.C., the 2010 Commerce Centre, the Osoyoos Indian Band Development Corporation, and the Indian and Northern Affairs Canada. In 2009 and 2010, these organizations were joined also by 2010 Winter Games corporate sponsors and suppliers Coca-Cola, BC Hydro, Molson, Deloitte, GE, RBC and Nike.

Data showed that the organizing committee originated consultations with specific groups on a variety of subjects between 2008 and 2010. What remains largely unclear is how these consultations initiated by VANOC may have (if at all) transformed the social customs of these groups (which was what this indicator was intended to show). Although data on the consultation practices of the public authorities and the candidacy committee were generally not available, a 2002 formal agreement between two First Nations, the Province, and the 2010 Bid Corporation extends the partnership that was formalized between the two First Nations in 2001.

## So 28: Consultation with Specific Groups by Subject and Frequency, 2008-2010

Group Number and Name	Number of consult-ns	2008	Number of consult-ns	2009	Number of consult-ns	2010
		Subjects Covered		Subjects Covered		Subjects Covered
Vancouver						
1 <i>Inner City Working Group</i>	13 <sup>1</sup>	Recruitment and economic opportunities for priority populations; Feedback on Sustainability reporting	11 <sup>2</sup>	Recruitment and economic opportunities for priority populations; Feedback on Sustainability reporting	1	Feedback on Sustainability Reporting from one Inner-City Representative
Metro Vancouver						
1 <i>ENGO Dialogue Group (22 ENGO's)</i>	4	Climate Change, Waste, Biodiversity Feedback on Sustainability Reporting	4	Climate Change, Waste, Biodiversity Feedback on Sustainability Reporting	1	Feedback on Sustainability Reporting from one ENGO Representative
2 <i>Sustainability Practitioners</i>	1	Feedback on Sustainability Reporting	1	Feedback on Sustainability Reporting	1	Feedback on Sustainability Reporting from two SUS Practitioners
3 <i>VANOC Workforce</i>	1	Feedback on Sustainability Reporting	1	Feedback on Sustainability Reporting	1	Feedback on Sustainability Reporting from one Workforce Member
4 <i>Four Host First Nations</i>	27	Feedback on Sustainability Reporting (1) Regular meetings with FHFN Society (biweekly) (26)	27	Feedback on Sustainability Reporting (1) Regular meetings with FHFN Society (biweekly) (26)	11	Feedback on Sustainability Reporting from one FHFN Representative (1) Regular meetings with FHFN Society (biweekly) ended Dec 2009 (10)
5 <i>National Aboriginal Groups</i>	25	Aboriginal Participation in the Games	14	Aboriginal Participation in the Games	50	Aboriginal Participation in the Games
6 <i>Aboriginal employment and training organizations</i>	49	Aboriginal Participation in the Games	22	Aboriginal Participation in the Games	40	Aboriginal Participation in the Games
<b>Total</b>	<b>107</b>		<b>69</b>		<b>104</b>	

<sup>1</sup> 12 monthly meetings and 1 report meeting.

<sup>2</sup> 10 monthly meetings and 1 report meeting.



<b>So29: Opinion Polls</b>
<b>a) Data Discussion</b>
<p>The purpose of this indicator is to look at the satisfaction, dissatisfaction, and image, as well as the subjective influence, of the Olympic and Paralympic Games. The focus on individuals gauges the support that may benefit the Games and in return the direct impact that the Games have on the inhabitants of the various geographical areas.</p> <p>A standard questionnaire needs to be developed. Local market research institutes that are familiar with population sampling and have the facilities for conducting interviews by phone may be used.</p> <p>Synovate, a global market research company, was contracted by OGI-UBC to conduct two opinion polls – one before the 2010 Winter Games and one after the Games. The data (summaries and figures) are provided by Synovate. The pre-Games poll was conducted in December 2009. A follow-up poll, with a special focus on Paralympics, was conducted April 27 to May 6, 2010. Canadian residents aged 19+ from Synovate's ViewsNet's Global Opinion Panel were emailed invitations to the online poll. Of the 5,959 panel members invited to the pre-Games poll, a total of 1,602 participated (response rate of 27 percent). Of the 9,684 panel members invited to the post-Games poll, a total of 2,474 participated (response rate of 26 percent). The samples were stratified by region to allow for additional analysis of B.C. Results were weighted by age, gender and region to match the actual composition of the Canadian adult population. A difference of 4 percentage points between the pre-Games and post-Games results is generally required to be considered statistically significant at 95% level of confidence; a larger shift is required when comparing results by region (6 for B.C., 10 for Alberta, Saskatchewan/Manitoba and the Atlantic Provinces, 7 for Ontario, 8 for Quebec and 42 for the Territories).</p>
<b>b) Data</b>
See attachments.
<b>c) Commentary</b>
<p>Data from the pre-Games poll show that support for hosting the 2010 Winter Games in Vancouver/Whistler had increased among Canadian residents, with 70 percent reporting that they were somewhat or very supportive in December 2009 (vs. 53 percent in 2003 based on recall). In B.C., while support for the Games had remained stable, opposition had grown, rising from 23 percent who recalled opposing the Games in 2003 to 30 percent in 2009. B.C. residents outside of Metro Vancouver expressed the strongest opposition (36 percent). Among Canadian residents who recalled changing their stance from their initial position, the tendency has been to become more, rather than less, supportive. In B.C., equal proportions moved in both directions. The top reason that Canadians gave for increasing their support was because of home pride in having the Games in Canada/BC/Vancouver, while B.C. residents most commonly said they may as well make the best of it, since the decision to host the 2010 Winter Games had already been made. The perception that the Games cost too much and that the money should be spent elsewhere mentioned most by those who became less supportive, particularly among B.C. residents outside of Metro Vancouver.</p>

Three-quarters of Canadian residents in December 2009 believed that hosting the Games would benefit Canada as a whole, which far outweighed those who believed the impact would be negative (5 percent). When asked about the impact that hosting the Games would have on B.C. as a whole, B.C. residents believed that the impact on the province would be positive rather than negative by a ratio of 2:1. However, B.C. residents from outside of Metro Vancouver held a more negative outlook in this regard.

Anywhere from 41 percent to 50 percent of Canadians credited the Games with public initiatives that help people with disabilities, specifically, increasing the accessibility of buildings, sidewalks and public spaces, specialized programs and training for athletes with disabilities, and government support. Most of the remaining residents felt that the Games had yet to make an impact on these three aspects. Fewer Canadians believed that the Games had a positive impact on them personally. Specifically, anywhere from 32 percent to 40 percent felt that the Games had increased their awareness/appreciation of amateur winter sports, their knowledge of sports for people with disabilities, and their overall acceptance of people with disabilities. Among employers, a marginally lower proportion said that their willingness to hire people with disabilities had increased (23 percent among Canadian employers). B.C. residents were the least likely to acknowledge that the 2010 Winter Games had any positive impacts on public initiatives for people with disabilities or in personal attitudes and awareness. This was likely due to stronger opposition in B.C. against hosting the Games in Vancouver/Whistler, which may make dissenting residents reluctant to recognize changes benefitting people with disabilities brought on by the 2010 Winter Games.

In 2010 (post-Games), perceptions of the impact of the Paralympic Games on Canada as a whole had improved dramatically since December 2009. Except in Quebec, Canadians were much more likely in 2010 than they were in 2009 to believe that the Games had a “very positive” impact (55 percent vs. 38 percent). B.C. residents were twice as likely in December 2009 to believe the Games have had a “very positive” effect on the province (45 percent) than they were in April-May 2010 (post-Games) (23 percent); much of this shift in attitude can probably be attributed to Metro Vancouver, where the Games were held.

About one half of Canadians (49 percent) expressed an interest in the Paralympic Games at the time they were held, while just slightly fewer (43 percent) said they watched or attended a Paralympic event. Understandably, participation was higher in Metro Vancouver than elsewhere in Canada. Less than one half of Canadians believed that the Paralympic Games had a positive impact on employment opportunities for people with disabilities. Four out of ten Canadians who are employers claimed that their willingness to hire people with disabilities had increased as a result of the Paralympic Games, compared to less than one quarter who said that they were willing to do so prior to the Paralympic Games.

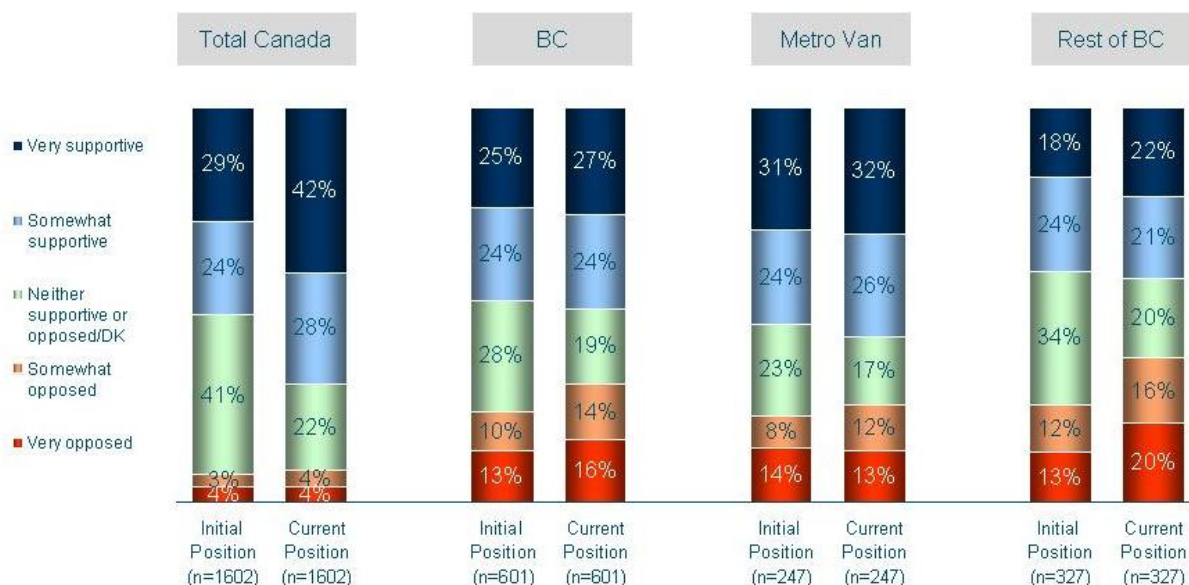
A majority of Canadians in all regions believed that the Paralympic Games had led to more positive portrayals of people with disabilities in the media (66 percent) and had increased the social status of people with disabilities (57 percent). While a majority of Canadians believed that their public perception of people with disabilities had improved as a result of the Paralympic Games, they were less likely to feel that the Games had contributed to the social support and integration of people with disabilities. The 2010 Paralympic Games were more likely to be seen as having encouraged people with disabilities to participate in sports than to have increased their access to sports and recreational activities. The 2010 Paralympic Games

generally led to greater awareness and acceptance of people with disabilities and the issues faced by them. Canadians with a disability and able-bodied Canadians who regularly interact with someone living with a disability tended to have more favourable views than their counterparts regarding the positive public and personal impacts for people with disabilities that resulted from hosting the 2010 Paralympic Games.

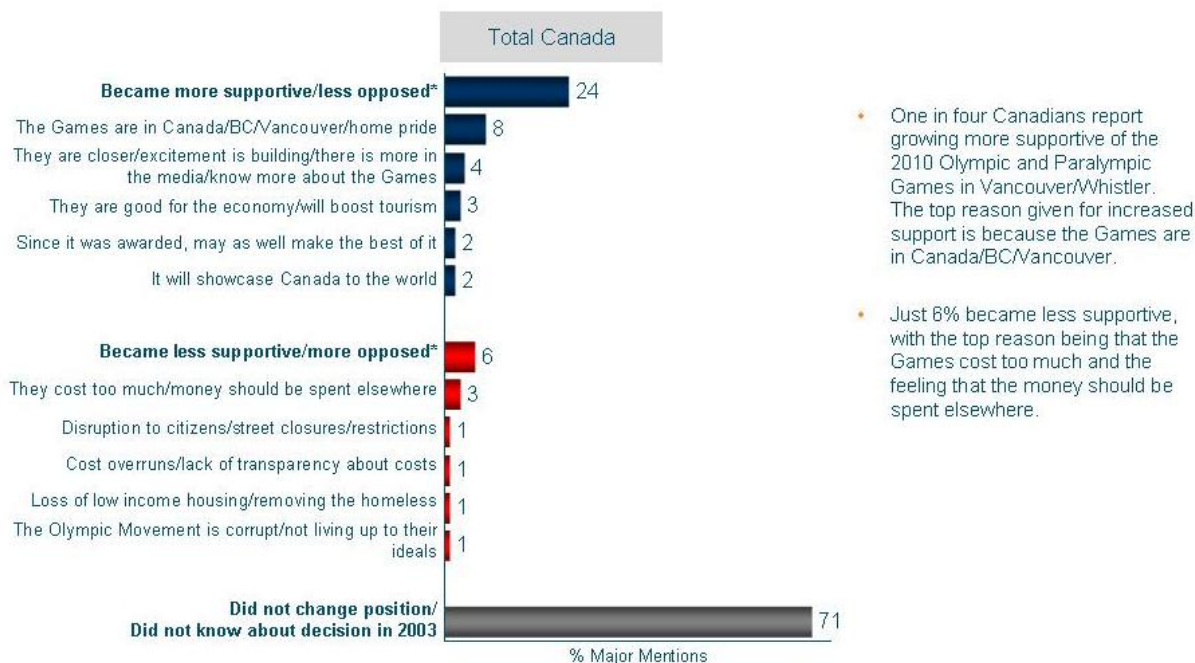
In summary, although there was some dissatisfaction with the 2010 Winter Games, Canadians were generally positive and supportive of the Games and believed that the Games would lead to benefits for Canada overall and for its provinces (with some notable differences in Quebec and B.C. outside of Metro Vancouver). Canadians also generally believed that the 2010 Paralympic Games had increased awareness and acceptance of people with disabilities. The 2010 Paralympic Games were more likely to be seen as having encouraged people with disabilities to participate in sports than to have increased their access to sports and recreational activities.

### December 2009 (pre-Games):

- Q1. In 2003, prior to Vancouver/Whistler being awarded the 2010 Olympic and Paralympic Games, at that time, how supportive were you in the decision to bid to host the Games in Vancouver/Whistler?
- Q2. And now that the Games are almost here, what is your position on Vancouver/Whistler hosting the 2010 Olympic and Paralympic Games?



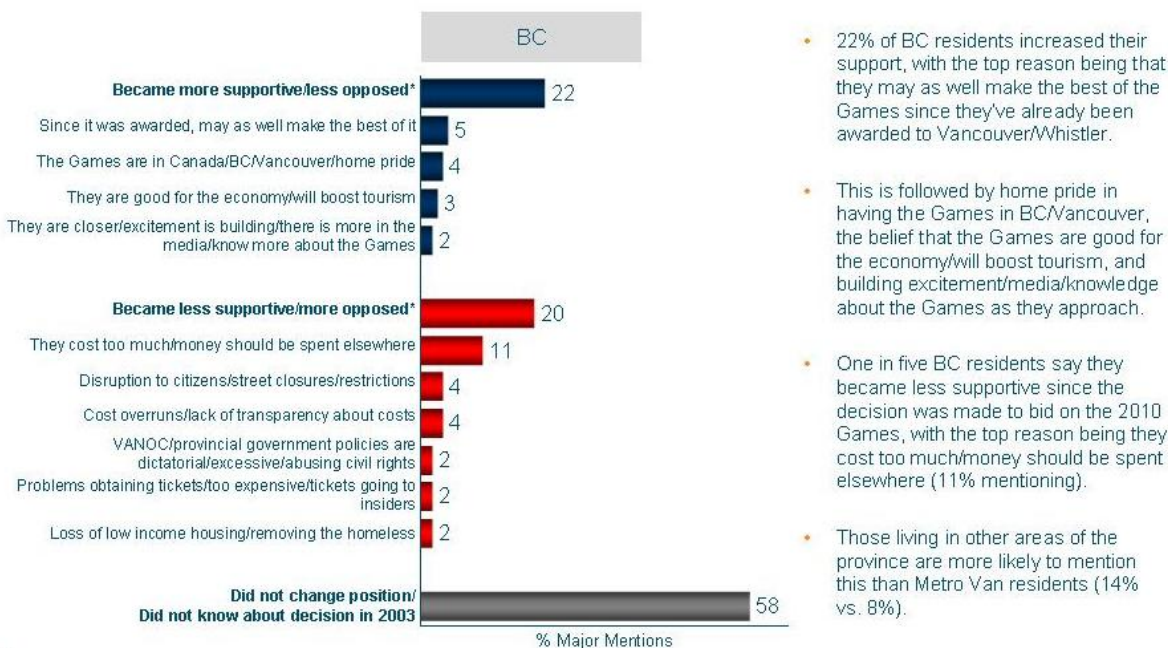
Q3. Why have you changed your position on Vancouver/Whistler hosting the 2010 Olympic and Paralympic Games?



n=1602

\*These two figures reflect the change in support, not current position. For example, the 24% who became more supportive includes those who shifted from very opposed to somewhat opposed.

Q3. Why have you changed your position on Vancouver/Whistler hosting the 2010 Olympic and Paralympic Games?

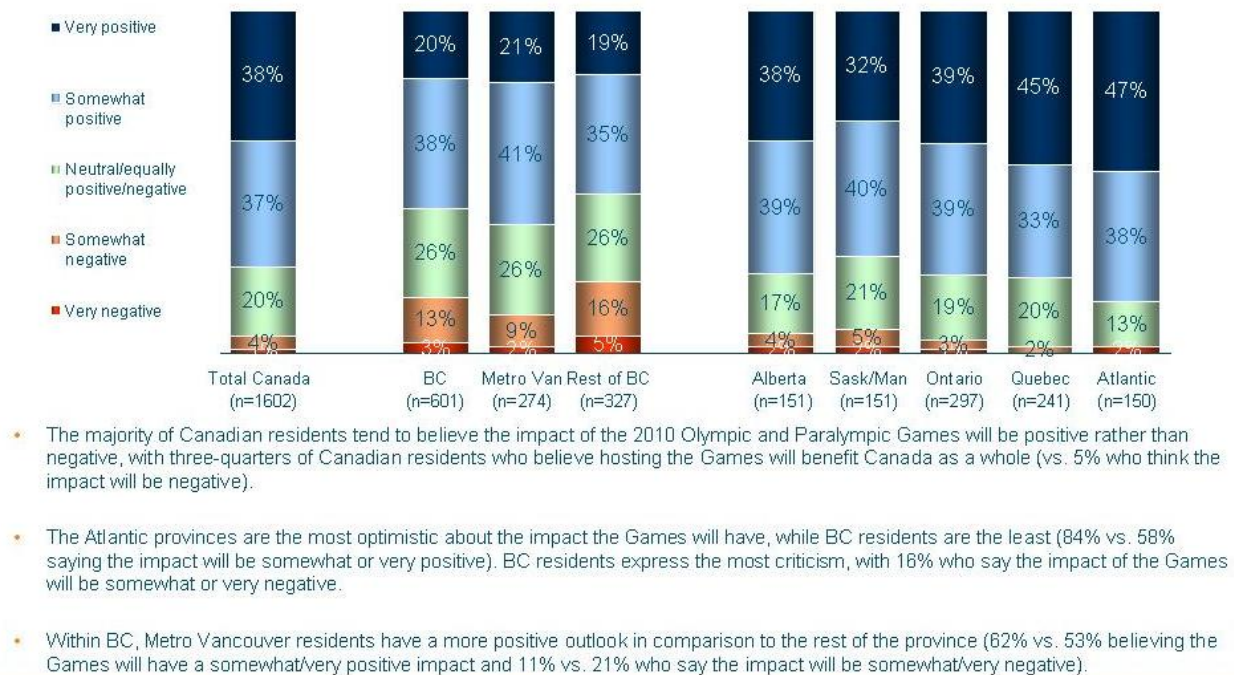


n=601

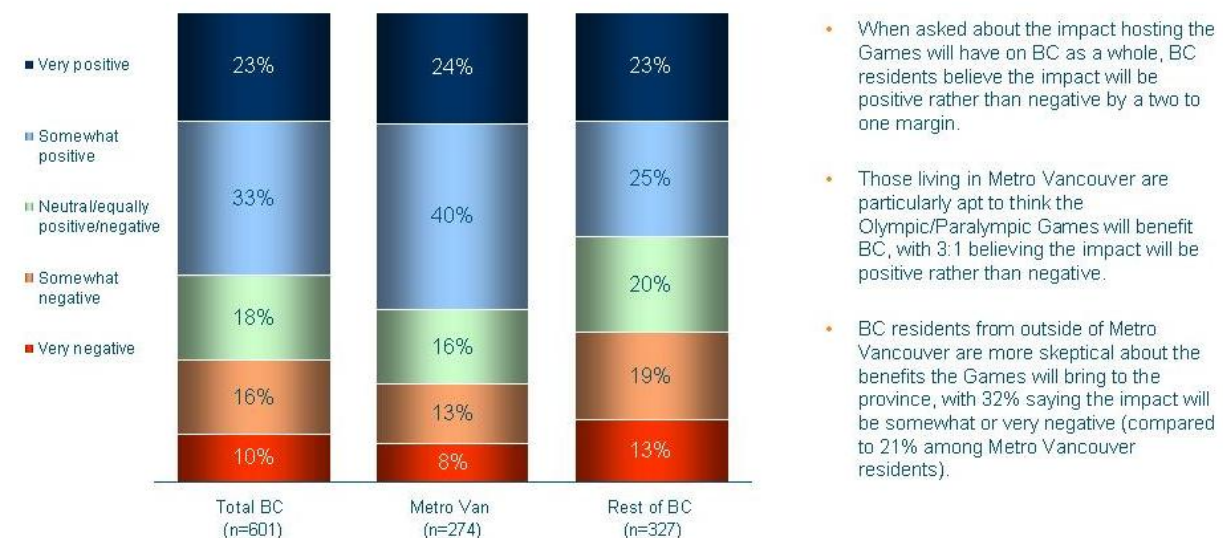
\*These two figures reflect the change in support, not current position. For example, the 22% who became more supportive includes those who shifted from very opposed to somewhat opposed.



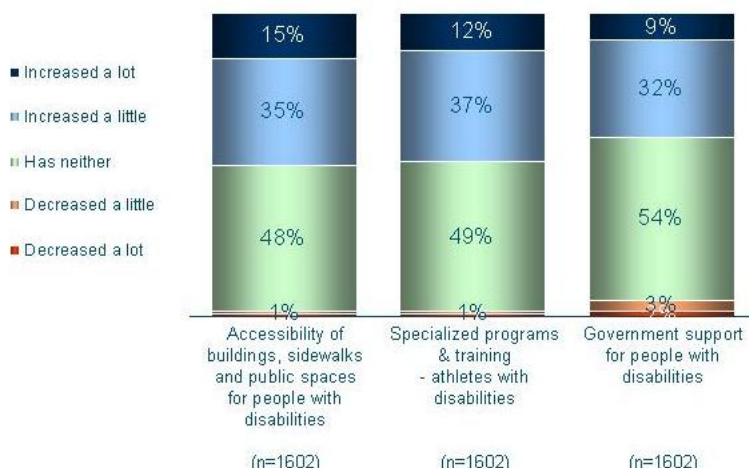
Q12. What do you expect the overall impact of hosting the 2010 Vancouver/Whistler Olympic and Paralympic Games to have on Canada as a whole?



Q13. What do you expect the overall impact of hosting the 2010 Vancouver/Whistler Olympic and Paralympic Games to have on the province as a whole?



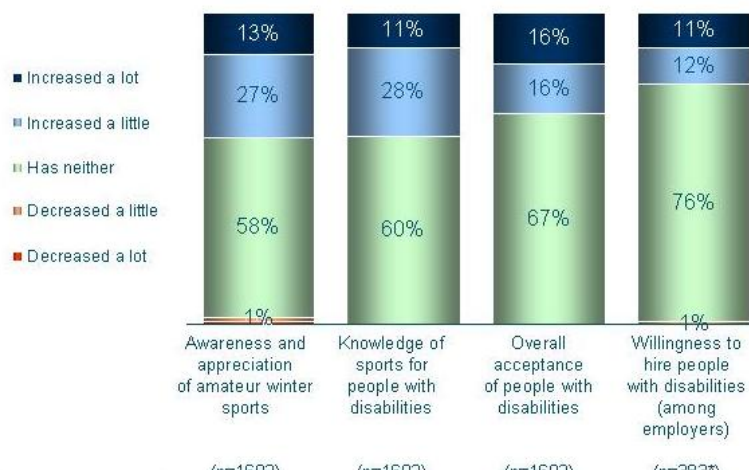
Q14. In 2003, Vancouver/Whistler was awarded the 2010 Winter Olympic and Paralympic Games. Since then, how have the Games impacted the following, if at all?



	(n=1602)		
	% Has increased a lot/little		
<b>Total Canada</b>	<b>50</b>	<b>49</b>	<b>41</b>
BC	39	41	30
AB	42	43	35
SK/MN	49	45	39
ON	54	52	41
QC	53	51	50
Atlantic	49	53	43

- When it comes to specific public impacts the 2010 Games have had for people with disabilities since 2003, Canadians are most likely to say they have seen at least a little increase in the accessibility of buildings, sidewalks and public spaces (50%) and specialized programs and training (49%).
- Slightly fewer Canadians (41%) feel the 2010 Olympic and Paralympic Games have increased government support for people with disabilities.
- Most of the remaining residents feel the Games have not yet made an impact on the three public initiatives for people with disabilities.
- BC residents are the most likely to say they have seen decreases in government support (19%), specialized programs and training (8%) and accessibility (6%) since 2003. This is likely due to stronger opposition to hosting the Games in Vancouver/Whistler, which may make dissenting residents unwilling to credit the Games with creating change that benefits people with disabilities.

Q15. And since 2003, how have the 2010 Olympic and Paralympic Games impacted you personally on the following, if at all?



	(n=1602)			
	% Has increased a lot/little			
<b>Total Canada</b>	<b>40</b>	<b>39</b>	<b>32</b>	<b>23</b>
BC	34	30	24	17
AB	38	35	30	17
SK/MN	34	34	26	23
ON	44	41	34	22
QC	41	42	37	31
Atlantic	41	44	33	26

\*Base among employers only.

- When it comes to the Games' personal impacts, four in ten Canadians say their awareness/appreciation of amateur winter sports and their knowledge of sports for people with disabilities has increased at least a little. This is followed 32% who say their overall acceptance of people with disabilities has increased since 2003.
- Roughly one-quarter of Canadian employers say their willingness to hire people with disabilities has gone up due to the 2010 Games.
- Nonetheless, the majority of Canadians feel the 2010 Olympic and Paralympic Games have not yet had any impact on any of the four personal dimensions.
- Like with the public initiatives, BC residents are the least likely to report that the Games have had positive personal impacts, more often reporting no change instead. Again, this is can be attributed to the higher levels of opposition to the 2010 Games within BC.
- Metro Vancouver residents are more likely than those from the rest of the province to report an increase in their awareness and appreciation of amateur winter sports (39% vs. 29%, respectively).

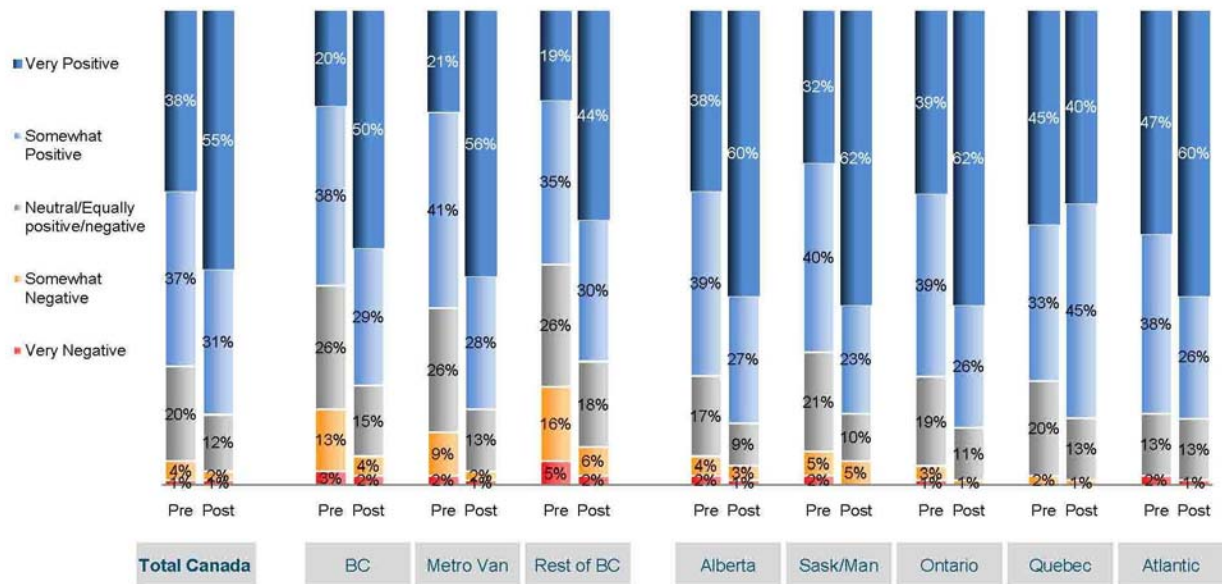
## Demographic Profile

	Total Canada	Canadian Regions							BC Region	
		BC	AB	SK/MN	ON	QC	Atl.	Terr.	Metro Van	Rest Of BC
Base	1602	601	151	151	297	241	150	11*	274	327
	%	%	%	%	%	%	%	%	%	%
<u>Age</u>										
<35	27	29	29	32	27	26	23	46	31	26
35-54	39	38	41	37	39	39	39	34	39	37
55+	34	33	29	32	34	35	37	20	29	36
<u>Household Income</u>										
<\$50,000	41	46	34	45	37	47	47	39	41	51
\$50,000 - \$99,000	38	37	41	34	38	40	34	39	38	36
\$100,000+	21	17	25	21	25	13	19	27	20	13
<u>Education</u>										
Highschool or less	28	26	28	34	25	32	23	27	23	30
College/Technical/CEGEP	32	32	30	23	32	35	36	34	30	33
University or more	40	42	41	43	42	33	41	40	47	36

\*Caution: small base size.

**April 27 to May 6, 2010 (post-Games):**

Q1. What do you feel the overall impact of hosting the 2010 Vancouver/Whistler Olympic and Paralympic Games has been on Canada as a whole? (Pre- and Post-Games Survey)

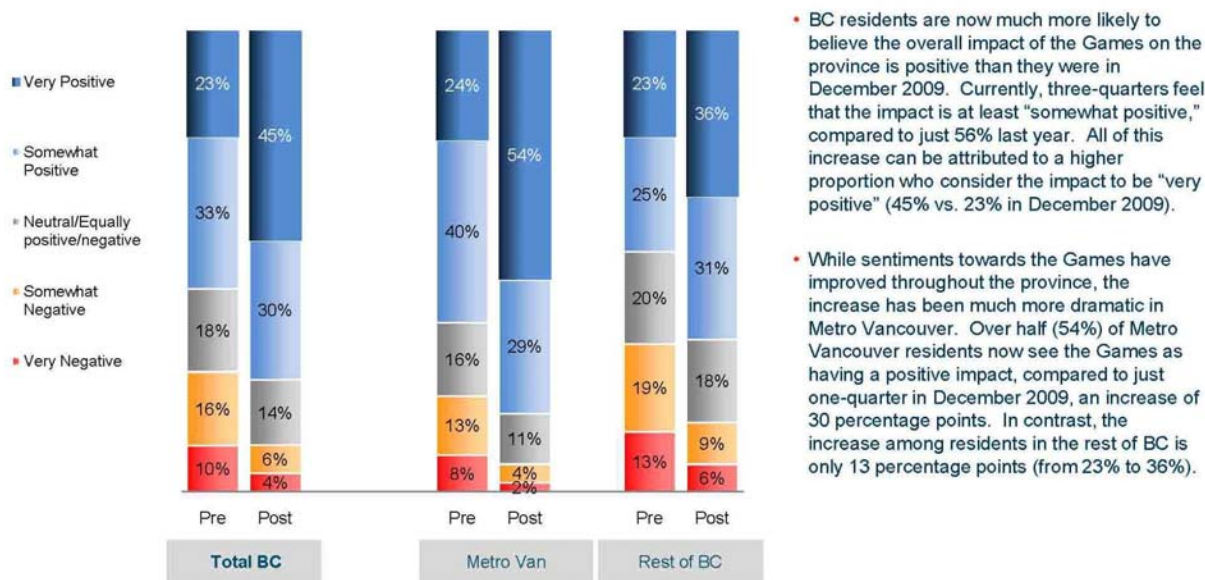


Pre-Games (2009) n=1602, Post-Games (2010) Total n=2474

\*Pre-Games wording: "What do you expect the overall impact of hosting the 2010 Vancouver/Whistler Olympic and Paralympic Games to have on Canada as a whole?"



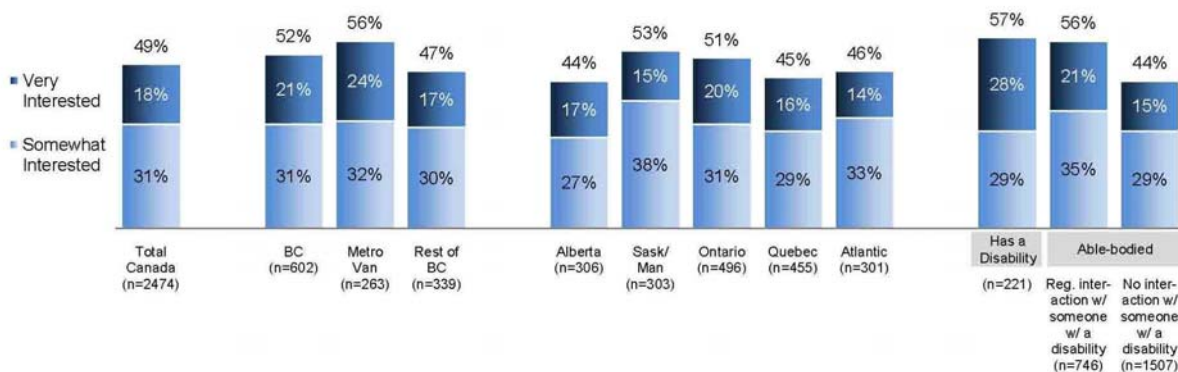
Q1. What do you feel the overall impact of hosting the 2010 Vancouver/Whistler Olympic and Paralympic Games has been on the province as a whole?\* (Pre- and Post-Games Survey)



Pre-Games (2009) Total BC n=601, Post-Games (2010) Total BC n=602

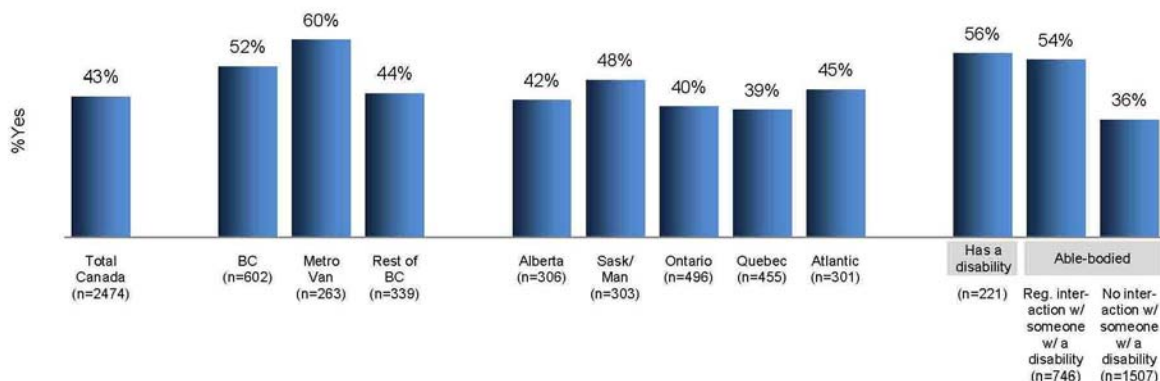
\*Pre-Games wording: "What do you expect the overall impact of hosting the 2010 Vancouver/Whistler Olympic and Paralympic Games to have on the province as a whole?"

Q3. Thinking back to the 2010 Paralympic Games, how would you rate your interest in the Games at the time? (Post-Games Survey)



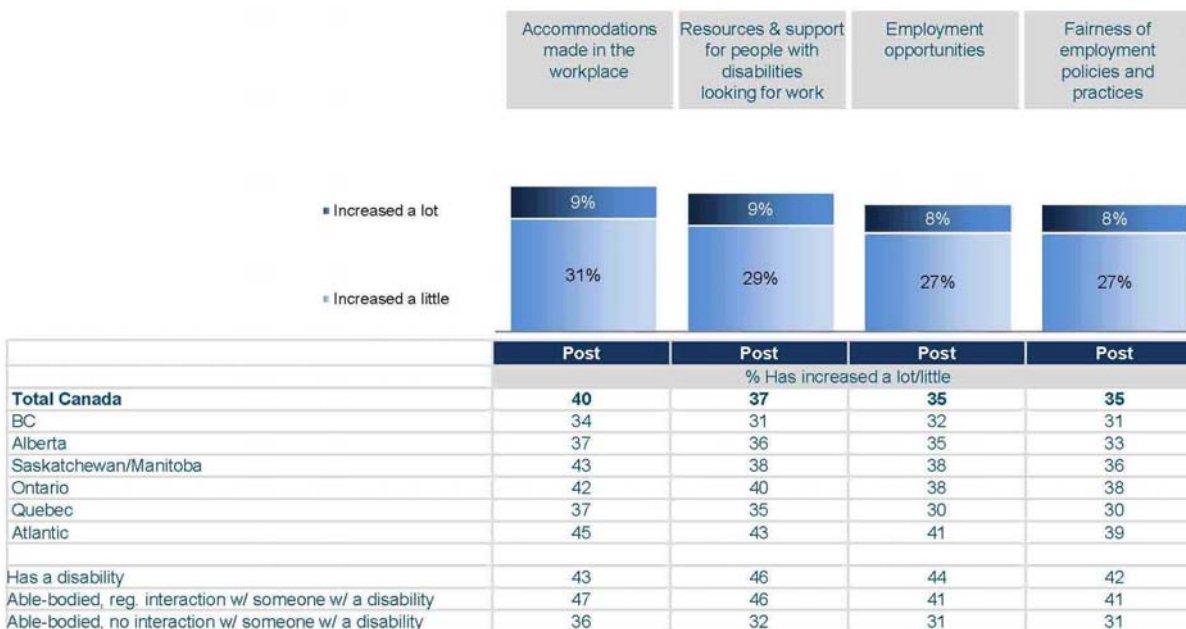
- Half (49%) of Canadian residents were at least somewhat interested in the 2010 Paralympic Games. By region, interest levels vary from 44% in Alberta to 53% in Saskatchewan/Manitoba. In BC, interest in the Games was higher in Metro Vancouver than elsewhere in the province (56% vs. 47%).
- Able-bodied Canadians with no interaction with someone living with a disability expressed lower interest in the Paralympic Games than did those living with a disability or those who regularly interact with them.

Q4. Did you watch, at home or in person, any of the 2010 Paralympic Games events?  
 (Post-Games Survey)



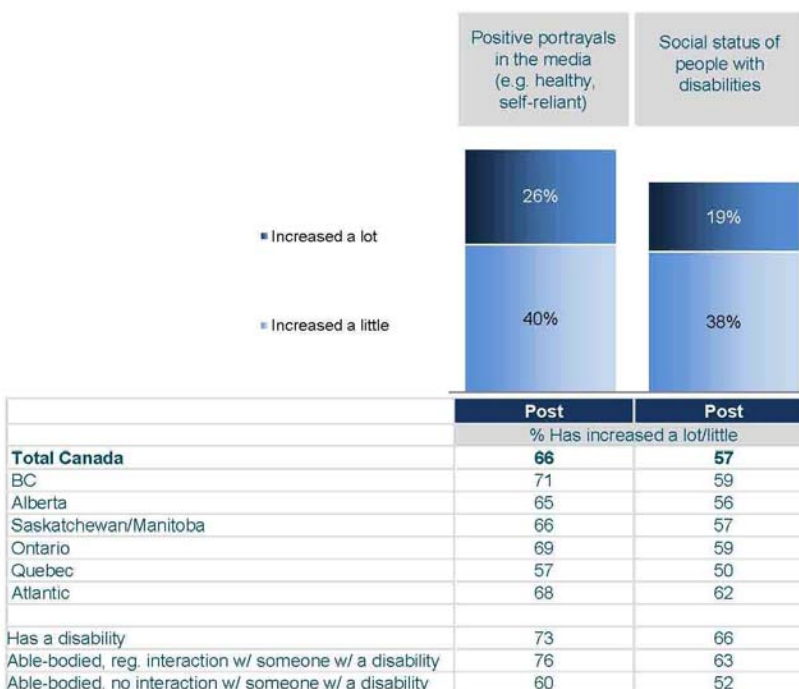
- Slightly fewer Canadians said they watched or attended any Paralympic Games events than expressed an interest in them (43% vs. 49%, respectively). Participation was significantly higher in BC (52%) compared to Canada overall. Not surprisingly, this can be largely attributed to Metro Vancouver, where six in ten residents said they watched or attended an event, an even higher proportion than said they were initially interested in the Games.
- Consistent with their lower levels of interest in the Games, able-bodied Canadians having no interaction with someone with a disability were much less likely to have viewed any of the events (36% did so) compared to Canadians with a disability (56%) or those regularly interacting with them (54%).

Q5A. Since 2003, how have the Paralympic Games impacted employment for people with disabilities, if at all? Specifically:  
 (Post-Games Survey)



Post-Games (2010) n=2474

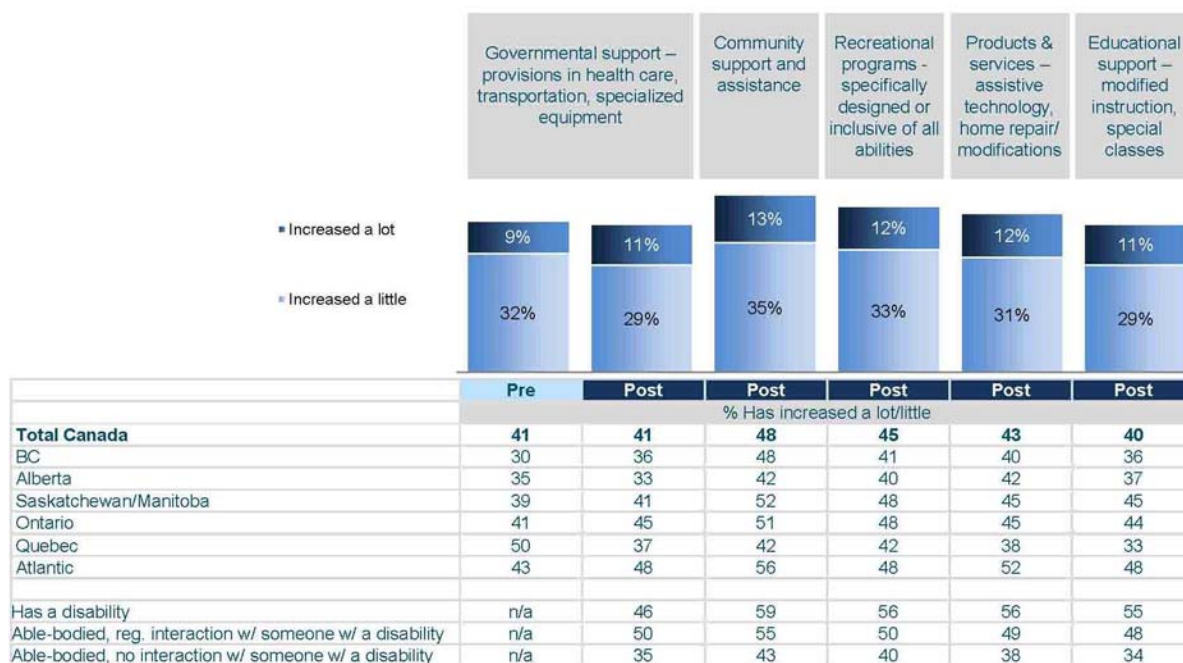
Q5B. Since 2003, how have the Paralympic Games impacted public perceptions of people with disabilities, if at all? Specifically:  
 (Post-Games Survey)



- Two-thirds of Canadians believe the Paralympic Games have increased positive portrayals of people with disabilities in the media since 2003. Slightly fewer (57%) believe the Games have led to increased social status for this segment of the population.
- Quebec residents tend to be less likely than Canadians as a whole to believe the Games have improved public perceptions of people with disabilities.
- Canadians with a disability or who interact with them are more likely to perceive improvements in public perceptions relative to able-bodied Canadians with no interaction with those with disabilities. However, this is largely due to a lack of awareness as this group is the most likely to say they don't know how the Games have made an impact.

Post-Games (2010) n=2474

Q5C. Since 2003, how have the Paralympic Games impacted social support and integration for people with disabilities, if at all? Specifically: (Pre- and Post-Games Surveys)

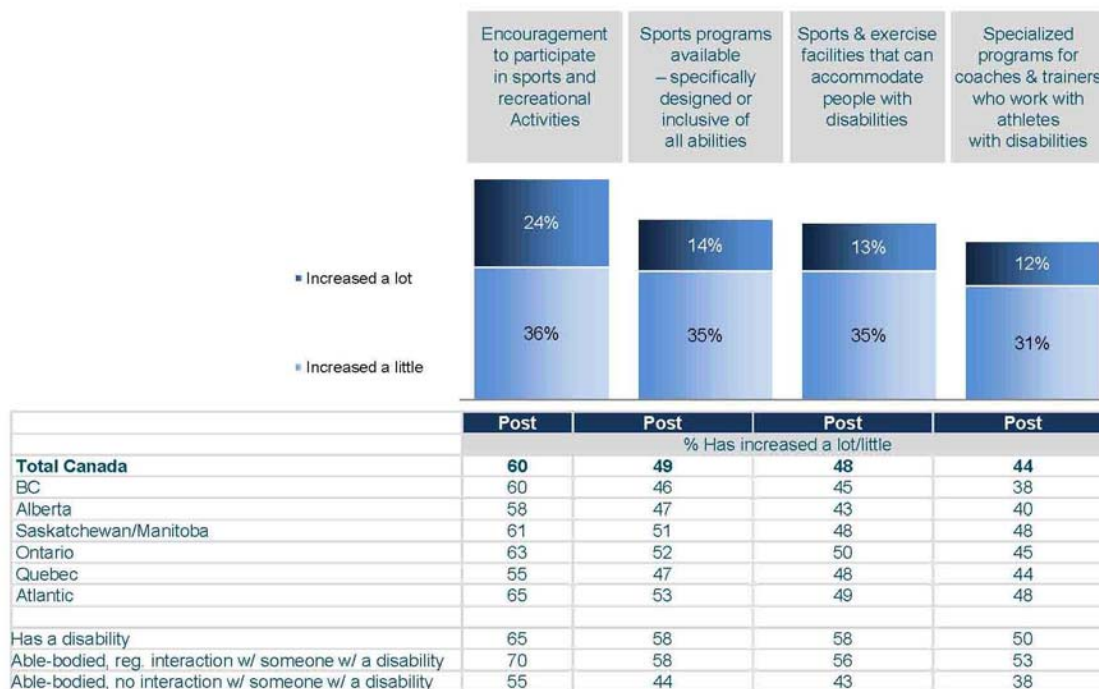


Pre-Games (2009) n= 1602, Post-Games (2010) n=2474

\*Pre-Games wording: In 2003, Vancouver/Whistler was awarded the 2010 Winter Olympic and Paralympic Games. Since then, how have the Games impacted the following, if at all?

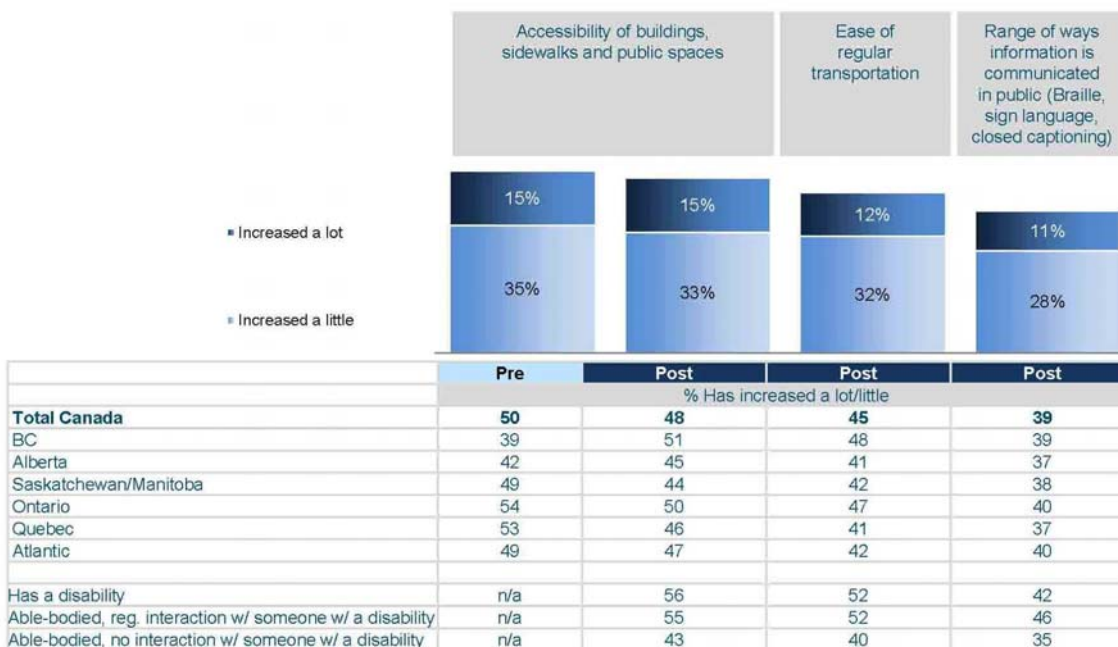


Q5D. Since 2003, how have the Paralympic Games impacted sports and recreation for people with disabilities, if at all? Specifically:  
 (Post-Games Survey)



Post-Games (2010) n=2474

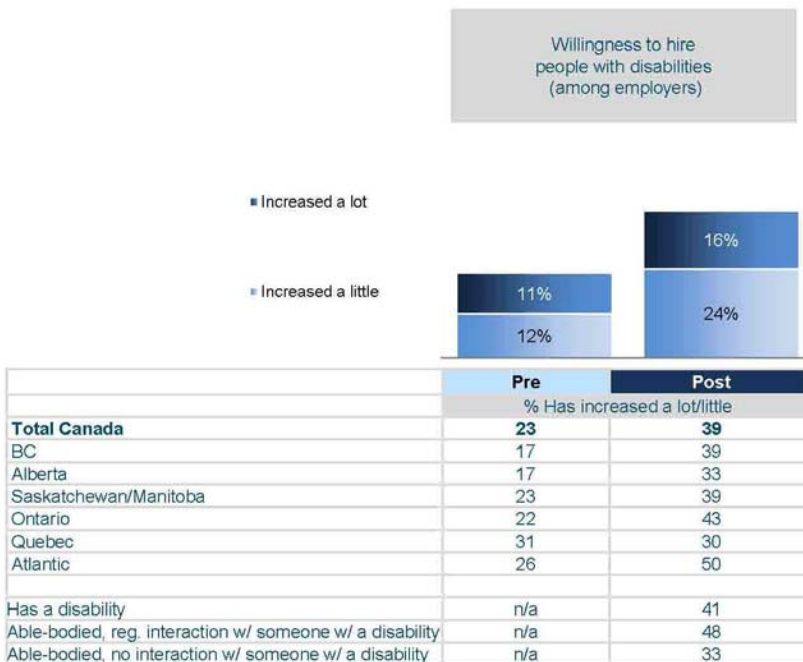
Q5E. Since 2003, how have the Paralympic Games impacted accessibility in public spaces for people with disabilities, if at all? Specifically: (Pre- and Post-Games Surveys)



Pre-Games (2009) n= 1602, Post-Games (2010) n=2474

\*Pre-Games wording: In 2003, Vancouver/Whistler was awarded the 2010 Winter Olympic and Paralympic Games. Since then, how have the Games impacted the following, if at all?

Q6. Since 2003, how have the Paralympic Games impacted you personally on the following, if at all?\* Specifically:  
 (Pre- and Post-Games Surveys)

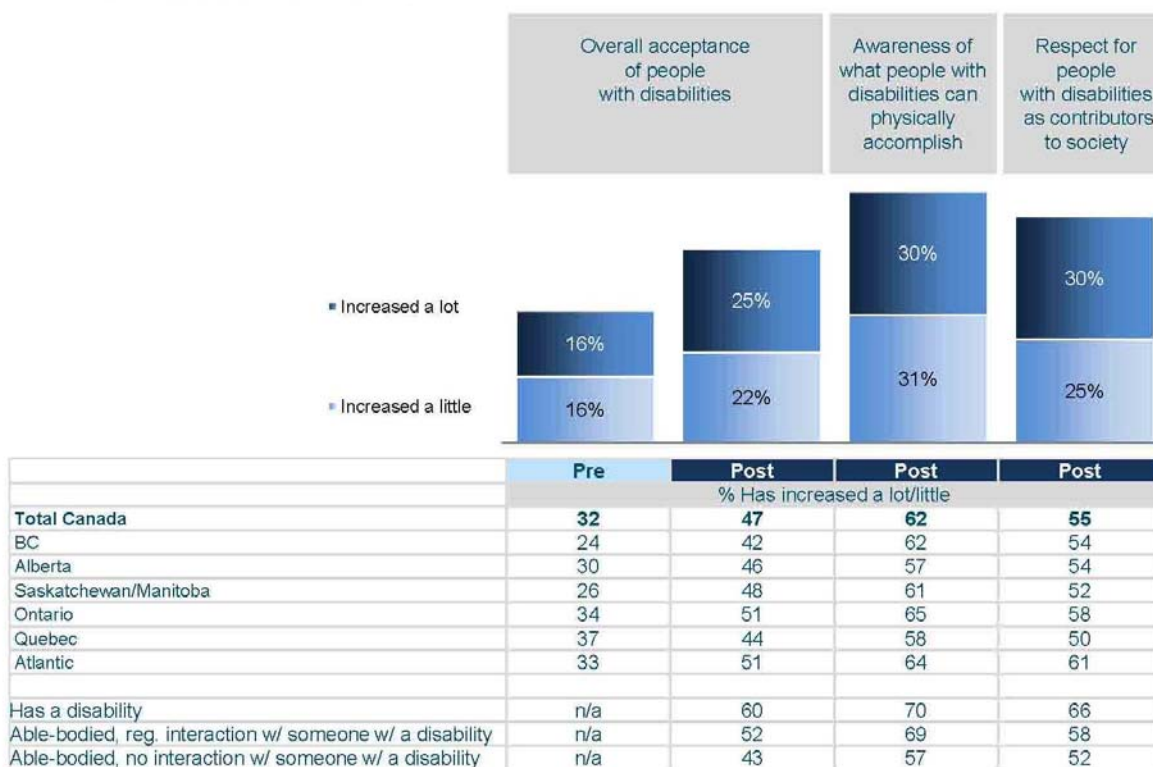


- Among Canadian employers, willingness to hire people with disabilities has increased markedly (39% vs. 23% in December 2009).
- Able-bodied employers who do not interact with those with disabilities are significantly less likely than those who do to have increased their willingness to hire people with disabilities (33% vs. 48%, respectively). The majority of these employers instead report no change (65%).

Pre-Games n=383, Post-Games n=592 (Base among employers)

\*Pre-Games wording: And since 2003, how have the 2010 Olympic and Paralympic Games impacted you personally on the following, if at all?

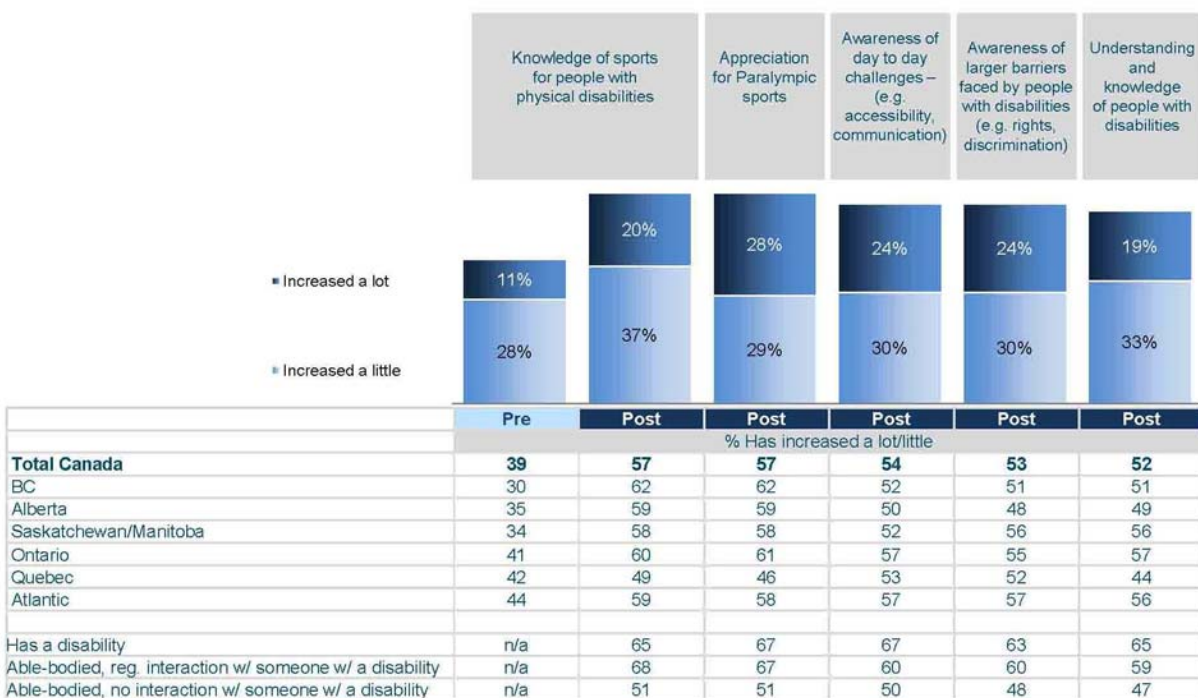
Q6. Since 2003, how have the Paralympic Games impacted you personally on the following, if at all?\* Specifically:  
 (Pre- and Post-Games Surveys)



Pre-Games (2009) n= 1602, Post-Games (2010) n=2474

\*Pre-Games wording: And since 2003, how have the 2010 Olympic and Paralympic Games impacted you personally on the following, if at all?

Q6. Since 2003, how have the Paralympic Games impacted you personally on the following, if at all? Specifically:  
 (Pre- and Post-Games Surveys)

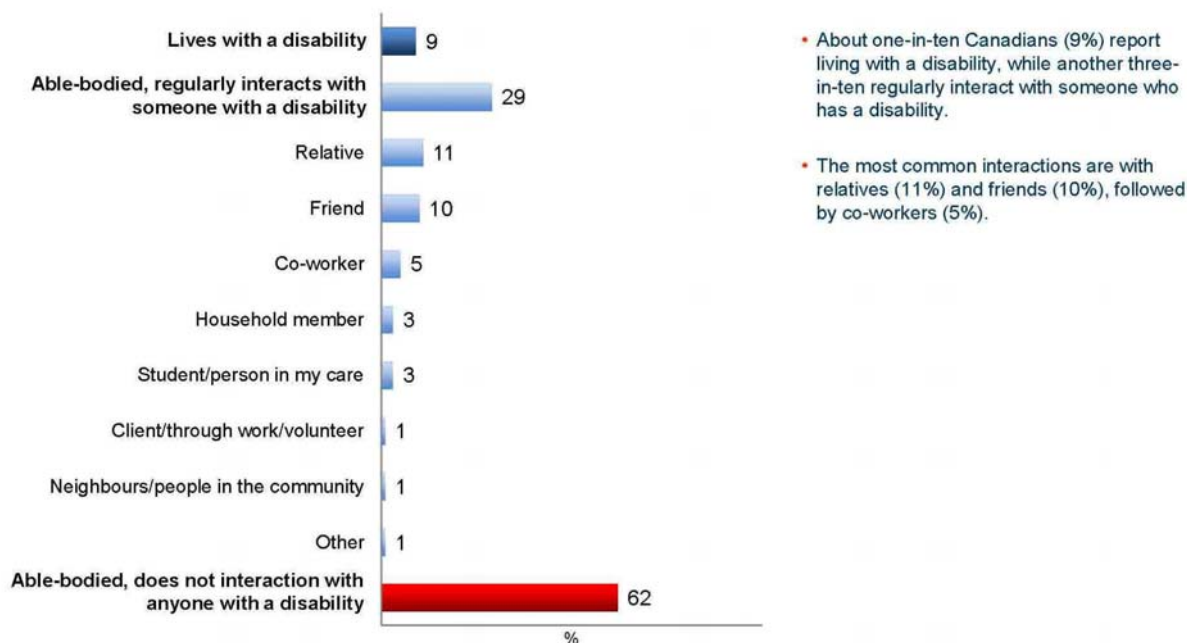


Pre-Games (2009) n= 1602, Post-Games (2010) n=2474

\*Pre-Games wording: And since 2003, how have the 2010 Olympic and Paralympic Games impacted you personally on the following, if at all?

Q7. Are you a person living with a disability? (Post-Games Survey)

Q8. Do you regularly interact with someone living with a disability? (Post-Games Survey)



Post-Games (2010) n=2474

## Demographic Profile (Post-Games)

	Total Canada	Canadian Regions							BC Regions	
		<u>BC</u>	<u>AB</u>	<u>SK/MN</u>	<u>ON</u>	<u>QC</u>	<u>Atl</u>	<u>Terr.</u>	<u>Metro Van</u>	<u>Rest of BC</u>
Base	2474 %	602 %	306 %	303 %	496 %	455 %	301 %	11* %	263 %	339 %
<u>Age</u>										
<35	27	28	30	32	27	25	24	12	31	26
35-54	39	39	41	36	39	39	38	42	40	38
55+	34	33	29	32	33	35	37	46	30	37
<u>Gender</u>										
Male	47	47	45	50	46	48	46	45	47	47
Female	53	53	55	50	54	52	54	55	53	53
<u>Household Income</u>										
<\$50,000	42	43	32	43	38	50	53	6	34	54
\$50,000 - \$99,000	38	39	40	42	38	37	37	61	42	35
\$100,000+	20	18	28	15	24	13	11	32	24	11
<u>Education</u>										
Highschool or less	30	30	27	22	30	33	29	38	22	39
College/Technical/CEGEP	30	31	32	28	31	27	33	6	31	32
University or more	40	39	41	50	39	40	38	63	47	28
<u>Living with a disability</u>										
Has a disability	9	11	10	8	11	3	7	25	11	11
Able-bodied	91	89	90	92	89	97	93	75	89	89



### So30: Participation of Minorities in Olympic and Paralympic Games

#### a) Data Discussion

The purpose of this indicator is to describe the participation of minorities in the organizational structures of the OCOG (position in OCOG itself, Olympic and Paralympic activities related jobs and volunteers). A clear focus should be provided on people with disabilities. The definition of minorities should be relevant to the host city.

The required data are the percentage of jobs occupied by each category of minority members (in the OCOG, in jobs created in Olympic activities and in Paralympic activities) and percentage of volunteers coming from different minority groups (in Olympic activities and in Paralympic activities).

Data were available only for the participation of minorities as paid employees of VANOC based on self-identification in a voluntary survey; only percentages were provided in the VANOC Sustainability Reports and percentages were not broken down by Olympic activities and Paralympic activities. No data were available on the participation of minorities on the Board of Directors of VANOC, nor as volunteers for the 2010 Winter Games.

#### b) Data

So30 Participation of Minorities in Olympic and Paralympic Games, 2006-2010

Jobs inside VANOC occupied by minorities members	Women	Aboriginal	Visible Minority	Persons with a disability
2006-2007	50.0%	13.0%	8.1%	0.4%
2007-2008	53.0%	11.0%	3.0%	9.3%
2008-2009	43.0%	3.0%	10.8%	0.6%
2009-2010	50.0%	1.0%	9.0%	0.8%

Source: Annual VANOC Sustainability Reports

#### c) Commentary

The percentage of women occupying jobs inside VANOC has been more or less stable during the four years under study (2006-2010), on par with that of men, with the exception in 2008-2009 when only 43 percent of such jobs were occupied by women. The percentage of Aboriginal participation in VANOC jobs decreased rapidly in 2008-2009, from 11-13 percent in the first two years, to 1-3 percent in the last two periods. The percentage of jobs occupied by members of a visible minority increased by the end of the reporting periods to about 10 percent. The proportion of VANOC jobs occupied by people with disabilities was less than one percent for the better part of four-year period under study, with the exception of 2007-2008 when more than 9 percent of such jobs were occupied by persons with disabilities. The increase in the percentage of jobs occupied by persons with disabilities in 2007-2008 coincided with a comparable decrease in the percentage of jobs occupied by members of a visible minority in 2007-2008; which was then boosted in the following year to its highest level (possibly at the

expense of participation by Aboriginals and persons with disabilities).

In summary, members of minority groups were hired as VANOC employees during the four-year reporting period; approximately one half of jobs was occupied by women and from less than 1 percent to a high of 13 percent were occupied by other minority groups. The percentage of jobs occupied by minority groups other than women varied considerably during the four-year reporting period, possibly at the expense of one of the other two minority groups. Due to a lack of data, no comment is provided on the extent to which members of minority groups occupied positions on the Board of Directors of VANOC or as volunteers of the 2010 Winter Games.

## So32: Olympic and Paralympic Educational Activities

### a) Data Discussion

The purpose of this indicator is to highlight the educational activities undertaken in order to verify the catalyst role that the organization of the Games has in the field of education.

The required data are a list of the educational activities undertaken, accompanied by the number of people reached by these activities and the geographical area of the activities, the global budget for these activities, the percentage of the OCOG budget. This indicator also includes a special focus on programs concerning the Paralympic Games and/or awareness and attitudes about people with disabilities, and the number of schools that attended the Games in an organized manner.

Data available from VANOC provide only an overview of educational activities and the number of individuals reached. No further specifics were available (e.g., global budget, percentage of VANOC budget).

### b) Data

No attachments; see Commentary.

### c) Commentary

VANOC created five major Olympic and Paralympic Educational Activities to engage with visitors on the topics of education and sport. Most of these programs were web-based applications, and the number of unique visitors to these web pages is available.

The Vancouver2010.com/edu website was an interactive bilingual e-magazine and portal that provided education resources in the areas of sport, culture, and sustainability. Between December 2007 and the end of March 2010, 281,293 unique visitors viewed the website.

Educational activities included storytelling workshops (1,624 teachers and 25,900 students across Canada), a showcase of projects (200 classes across Canada), student reporter programs (50 schools, 14 teachers, and 64 students across Canada), and podcasts of university lecturers (34 academics and 28 universities across Canada).

The “Sharing the Dream” Program, started by the BC Ministry of Education, provided lesson starters to assist teachers in formulating lesson plans, a “Student Reporter” Guide to assist students in reporting on the goings on of the Olympic and Paralympic Games, and a guide to celebrating Paralympic school week. The website had approximately 1,600,000 page views between October 2008 and March 2010.

“Paralympic School Days” was another cornerstone to the Olympic Educational Activity platform. Seventy-three schools and 27,500 students had the opportunity to listen to inspirational speeches by Paralympic athletes, try out different types of Paralympic sport equipment, and improve their knowledge about Paralympians.

Fyicanada.ca was a web community for Canadian teenagers that highlighted video interviews with torchbearers and other Olympic activities that were taking place during the Games.

Studentslive.ca, a joint project of the West Vancouver School District, the British Columbia Educational Leadership Council and VANOC, used social media to connect students to the Games. The website allowed students to participate in a range of media activities, which

included filing articles, capturing videos and conducting interviews with young people before, during and after events.

The LiveCity Education Program provided a one-hour live show featuring bilingual personalities as emcees, Olympic and Paralympic Athlete presentations, live sport competition on giant screens, and live entertainment from across Canada; 9,516 students attended Live City during the Olympic Games and 751 attended during the Paralympic Games.

In summary, a variety of educational activities, including those with a special focus on the Paralympics, were implemented by VANOC and others, which suggests a catalytic role of the organization of the Games in the field of education.

### So33: Olympic and Paralympic Art Designers and Participants

#### a) Data Discussion

The purpose of this indicator is to show the cultural dynamism that evolves during the conception, organization, and staging of the Games.

The required data are the number of people (and man-years) involved in the creation of items (e.g., logos, posters, mascots, medals, etc.) linked to the main cultural programmes of the Olympic and Paralympic Games (e.g., opening and closing ceremonies, medal ceremonies, official cultural programme). This includes the number of performers in the main cultural programmes, broken down by origin and gender. It also includes the percentage of people with disabilities among the performers and artists.

Data were available from VANOC for the number of art designers and participants in the Olympic and Paralympic opening and closing ceremonies, and the number of graphic artists involved in the creation of Games-related items. Information on the gender of participants in the Paralympic ceremonies was not available. Data were not available for the main cultural programme (Cultural Olympiads 2008, 2009, and 2010) or for the medal ceremonies.

#### b) Data

### So33: Olympic and Paralympic Art Designers and Participants

Performers/Contributors	Olympic Games			Paralympic Games
	Women	Men	Total	Total <sup>1</sup>
<i>Opening Ceremonies</i>				
Music	83	123	206	201
Dance	73	61	134	DNAA
Production	147	229	376	76
Speaker	4	5	9	9
Other	0	5	5	0
Total	307	423	730	286 <sup>1</sup>
<i>Closing Ceremonies</i>				
Music	153	200	353	147
Dance	65	62	127	25
Production	136	208	344	34
Speaker	2	4	6	5
Other	0	0	0	0
Total	356	474	830	211

<sup>1</sup> Excluding Dance performers.

#### c) Commentary

Women comprised just above 42 percent of the participants in the Olympic opening and closing ceremonies. Overall, women had a slight majority in the dance performer category. No data were available on whether any of the participants in the Olympic ceremonies had any disabilities. Three percent of the participants in the Paralympic opening ceremony and four

percent of the participants in the Paralympic closing ceremony self-identified as having a disability.

Regarding graphic arts associated with the Games' logos, posters, mascots, etc. (not shown in the above table), a total of 7 female and 3 male artists, none of which had disabilities, were employed by VANOC (data on contracted services for graphic arts were not available). There were two female graphical artists from the city of Vancouver, two from the rest of British Columbia, one from the rest of Canada, and two from other countries. Two of the male artists were from the city of Vancouver and one was from the rest of Canada.

Although data were not available for all the main cultural programmes of the Olympic and Paralympic Games, data for the opening and closing ceremonies suggest that there was diversity with respect to type of performer/contributor, gender, and origin during these Games-time ceremonies. Given the lack of data on other cultural programmes and in previous years, no comment is provided on the evolution of cultural dynamism in the organization of the Games over time.

<b>So34: Cultural Program</b>
<b>a) Data Discussion</b>
<p>The purpose of this indicator is to reveal the importance given to the cultural field in the Olympic and Paralympic Games.</p> <p>The required data are the number of events in the official cultural programme that accompanied the Olympic and Paralympic Games (also known as The Cultural Olympiad), broken down by year, attendance, outreach, and budget.</p> <p>Detailed data from VANOC were available for the year 2010 only. Data for the Cultural Olympiads in 2008 and in 2009 are given as totals (not by event).</p>
<b>b) Data</b>
See attachment for detailed event data for the year 2010 only, and for a summary of 2008-2010.
<b>c) Commentary</b>
<p>The cultural programme for the Games in 2010 included 149 events. In total, 6,015,736 people visited these events. This number excludes Endlessly Traversed Landscapes, a visual arts exhibition consisting of 43 works presented on a variety of outdoor (or more technically out-of-home) display spaces in very high traffic areas such as transit shelters, subway station walls and subway trains; it is estimated that this exhibition generated between 2 and 5 million “engaged impressions” during the 70 days the works were on display. The total budget for cultural programme events for 2010 was \$56,420,129 (note that for Border Zones and Water’s Edge Festival, full budget information was unavailable and the amount the Cultural Olympiad contributed to the presentations was used in the calculation of the total; in addition, no data were available on the budget for events at the 2010 Aboriginal Pavilion that showcased Aboriginal culture and was visited by over 242,000 people during the 17 days of the Olympic Games). The events in 2010 were visited on average by 40,647 people (excluding the Endlessly Traversed Landscapes), and had an average budget of \$381,217 (excluding the Aboriginal Pavilion).</p> <p>Additionally, it should be noted that the Cultural Olympiad Digital Edition (CODE) creatively engaged people across Canada and around the world using digital technology. CODE is an online portrait of the host country that was created from 10,000 photo and text contributions by Canadians who wanted to welcome the world. People from 185 countries spent the equivalent of 550 days on the site. CODE Motion Pictures shared the work of Canadian filmmakers to an estimated audience of 3.3 million and CODE Screen 2010 presented more than 100 Canadian visual artists in an online gallery. The number of contributors to and viewers of CODE are not reflected in the attached tables. Similarly, the outdoor light installation titled “Vectorial Elevation” by Canadian artist Rafael Lozano-Hemmer was viewed by an online audience of 200,000 from 160 countries with 22,000 people worldwide actually participating in the artwork by sending in designs via the web, in addition to the estimated 750,000 people in Vancouver reported in the attached table. Overall, information about the Cultural Olympiad was accessed online via more than 3 million page views. Information about the Cultural Olympiad was also downloadable through the Official Mobile Spectator Guide, which was the number one mobile app in Canada during the Games with 1 million downloads to mobile devices.</p>

Finally, at the country level, the cultural program included two music tours: John Wort Hannam and Spring Breakup with an estimated 400 visitors in attendance and a budget of \$27,580, and Jenn Grant and Jason Plumb and The Willing with an estimated 1,440 visitors and a budget of \$97,842.

In 2009, a total of 283,773 people visited events of the cultural programme in the city of Vancouver, with total budget of \$21,215,350 for the events. In 2008, there were 163,128 people and a total budget of \$7,334,350.

Although detailed data were available only for the 2010 Cultural Olympiad, the totals across the three Cultural Olympiads suggest both an increase in budget for the events and an increase in the number of people attending the events. Based on budget and attendance, increasing importance appeared to be given to the cultural field in the lead up to the 2010 Winter Games, with the greatest activity during the Games.



### So34: Cultural Programme, Vancouver, 2010

Event	People	Budget
Art Under Foot	8,600	\$30,000
Edward Curtis Project	1,129	\$169,624
Spoken World	325	\$20,500
Son of Chamber Symphony	297	\$60,591
Wild at Art	1,300	\$12,000
Spirit of Place: Beijing, Vancouver & London Young Artists Exhibition-Olympic Themes	5,000	\$34,400
Backstory: Nuuchaanulth Ceremonial Curtains and the Work of Ki-ke-in	4,764	\$284,422
MONSTER	903	\$36,000
Beyond Eden	11,464	\$542,727
Laurie Anderson: Delusion	2,938	\$216,987
Where the Blood Mixes	19,218	\$72,790
Glocal Urban Screen	150,000	\$595,157
The Only Animal	2,902	\$451,638
Quilt of Belonging	9,477	\$83,873
Blue Dragon	10,747	\$1,200,000
Canada Code Photo Project	62	\$10,694
Ice Age 2010	550	\$245,000
Drum and Light Festival	417	\$29,000
Erotic Anguish of Don Juan	267	\$46,205
Marathonologue	168	\$86,700
Art of Craft	6,028	\$364,928
Quantum Bhangra	1,352	\$151,184
Nixon in China	9,873	\$1,924,840
First Nations / Second Nature	3,100	\$32,100
Clamour and Toll	209	\$7,896
Syndicate of Public Speakers	40	\$5,003
Ginger Goodwin Way	650	\$20,000
2010 Vancouver International Dance Festival	3,981	\$349,020
Sewing Our Traditions	1,824	\$57,799
HIVE 3	2,066	\$223,548
Before & After	10,000	\$13,367
Altered	60	\$42,503
Spine	1,499	\$352,230
An Invitation to an Infiltration	1,442	\$100,110
Symphony of a Thousand: Mahler's Symphony No. 8	5,312	\$381,667
DBR/VSO: A Voodoo Valentine	1,855	\$114,673
Vancouver Symphony with Adrian Anantawan	1,052	\$64,759
Abandon Normal Devices (AND)	150	\$16,250
CODE Live at W2 (Fearless City Mobile; OMG I'm on DOT TV; Untold Histories: Presence of the Land)	4,000	\$49,500
Nevermore	7,286	\$165,531
Rimini Protokoll "Best Before"	1,151	\$41,914
Fear of Flight	570	\$94,784
BASH'd	830	\$26,719
Elephant Wake	576	\$22,353
Underneath Lintel	540	\$31,350
ARC	318	\$27,560
Balkan Beat Box	500	\$26,370
Compagnie Marie Chouinard	1,183	\$85,856
Kidd Pivot	1,351	\$68,484

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### So34: Cultural Programme, Vancouver, 2010 (Continued)

Event	People	Budget
Sursaut Dance - Surrey Arts Centre	252	\$8,655
Sursaut Dance - Centennial Theatre	303	\$10,078
China	938	\$37,142
Kamp	597	\$58,426
Passion of Joan of Arc	358	\$40,448
Poetics: a ballet brut	565	\$59,736
White Cabin	510	\$35,965
The Candahar	6,879	\$165,000
High Performance: Evolution and Innovation in Canadian Design	8,760	\$77,509
Mississippi Sheiks	772	\$47,793
New Forms Festival and Code Live Presents	631	\$26,750
DANCE MARATHON	530	\$82,232
Les 16e Rendez-vous du cinema québécois et francophone de Vancouver	3,311	\$191,393
Paradise Garden	11,727	\$166,336
Rick: The Rick Hansen Story	3,237	\$356,650
Jason de Haan: Life After Doomsday	2,575	\$15,618
Talking Stick Festival 2010	1,248	\$300,000
Arthur Renwick: Masks	16,065	\$50,000
Reece Terris, Western Front Front – Another False Front	7,200	\$61,270
The National Dance Company of Korea: The Scent of Spring	2,273	\$165,000
Out from Under: Disability, History and Things to Remember	4,000	\$5,000
Configurations	351	\$30,000
Phoenix	2,628	\$115,865
STREB: Raw	1,050	\$87,348
Steve Earle and Joel Plaskett	2,074	\$101,370
Majumder/Cullen/Payne	1,890	\$109,264
CODE Live: Mike Relm	544	\$35,406
Cloud Gate Dance Theatre	3,180	\$312,717
The Passion of Russia	2,457	\$69,765
Tono	1,492	\$112,580
CODE Live: Kid Koala	599	\$40,312
CODE Live: Jamming the Networks	528	\$37,391
Dance Canada Dance	3,778	\$531,280
City and Colour	2,732	\$122,367
Sound Gallery	81	\$14,433
Spirit of Uganda	1,803	\$100,495
Maria Pages Flamenco Republic	1,434	\$129,518
New Songs: New Voices	444	\$39,703
Feist	2,606	\$250,540
CODE Live: Bell Orchestre	471	\$31,019
Hal Willner	4,379	\$501,200
Tanya Tagaq: Tuusalangna	234	\$29,337
Amir Koushkani & Rahim Alhaj	221	\$32,387
CODE Live: Martyn/2562/Deadbeat	684	\$31,044
Stars	2,514	\$98,927
CODE Live: Chromeo	688	\$40,383
Umalali: Garafuna Women's Project	230	\$20,702
Moscow State Choir	1,036	\$10,014

*Ctnd on next page*

### So34: Cultural Programme, Vancouver, 2010 (Continued)

Event	People	Budget
KNAAN & Tinariwen	2,618	\$114,376
Body & Soul	794	\$78,031
Gomez	1,393	\$127,602
Nathan & The Deep Dark Woods	233	\$24,042
U theatre - Sound of the Ocean	2,013	\$140,290
Paul Plimley Trio	182	\$17,228
Chai Found Music Workshop	296	\$15,998
NAC Made in Canada	785	\$116,845
Alice and Other Heroes	474	\$44,093
Martha Wainwright & Jorane	754	\$61,549
Hilario Duran	568	\$51,724
Raphael Saadiq & India.Arie	1,542	\$189,680
Culture Shock: Video Interventions at the QET	4,800	\$40,000
Fire with Fire	50,000	\$60,000
Endlessly Traversed Landscapes	DNAA	\$175,000
Etienne Zack: Name, Medium, Size, Year	2,500	\$56,000
Trimpin: Sheng High	3,000	\$30,000
Gwenaél Belanger: Tournis	10,000	\$25,000
Metcalfe/Lewis: IKONS	2,500	\$108,174
Yukon Souvenir	60,000	\$31,000
Ed Pien: Tracing Night	4,532	\$25,000
GOLD RUSH! Art, Bars, & Speculation	624	\$10,000
World Tea Party	4,038	\$45,882
BRIGHT LIGHT (CODE)	109,713	\$376,059
Vectorial Elevations	750,000	\$840,000
Michael Lin: A Modest Veil	832,500	\$365,487
CUE: Artists' Videos	1,136,700	\$326,645
Visceral Bodies	171,671	\$217,432
Place de la Francophonie	200,000	\$3,100,000
LiveCity Vancouver (two locations Celebration Site Olympics and Paralympics)	408,722	\$18,000,000
Richmond O-Zone (Celebration Site Olympics only)	333,333	\$7,900,000
Surrey 2010 Celebration Site (Olympics only)	181,930	\$3,695,000
Whistler Live (Celebration Site Olympics and Paralympics)	904,000	\$3,668,000
Aboriginal Pavilion	10,800	DNAA
CODE Live 1, 2 and 3	65,000	\$1,801,420
Border Zones	36,814	\$25,000
Vancouver as the Centre of the World	115,500	\$18,136
LunarFest	150,000	\$50,000
Raven Stole the Sun	680	\$8,600
Drowning Girls	1,202	\$10,000
Rain	4,585	\$75,000
A Celebration of Creativity	9,840	\$25,000
Juste pour Rire de Vancouver 2010	2,831	\$40,000
Water's Edge Festival	1,120	\$20,000
Inbody: MOA Global Dialogue	155	\$25,000
NiX	2,902	\$226,000
The Fiddle and The Drum	4,303	\$175,000

### So34: Cultural Programme, Vancouver, 2010 (*Continued*)

Event	People	Budget
In Situ	3,000	\$65,000
Coastal Jazz - Winterruption	1,525	\$32,500
Arts Umbrella: Kinesphere	600	\$10,000
Coastal Jazz - Club 2010	479	\$15,000
Room to Make your Peace	10,000	\$87,000

### So34 - Cultural Programs - Summary 2008 to 2010

Year	Budget	Visitors
2008	\$7,334,350	163,128
2009	\$21,216,350	283,773
2010	\$56,420,129	6,015,736

### **So35: Recognition of Olympic and Paralympic Logos and Mascots**

#### **a) Data Discussion**

The purpose of this indicator is to gauge the level of awareness of the organization of the Olympic and Paralympic Games.

The required data are recognition rates of logos and mascots for the Games.

Data were collected using a pre-Games survey conducted from December 7 to 14, 2009 by Synovate, which was commissioned by OGI-UBC. The survey sample size was 1,602 (27 percent of the 5,959 members of Synovate ViewsNet's Global Opinion Panel who were contacted). The survey was stratified to allow for additional analysis within B.C. Results are weighted by age within gender within region to match the actual composition of the Canadian adult population.

#### **b) Data**

See attachments.

#### **c) Commentary**

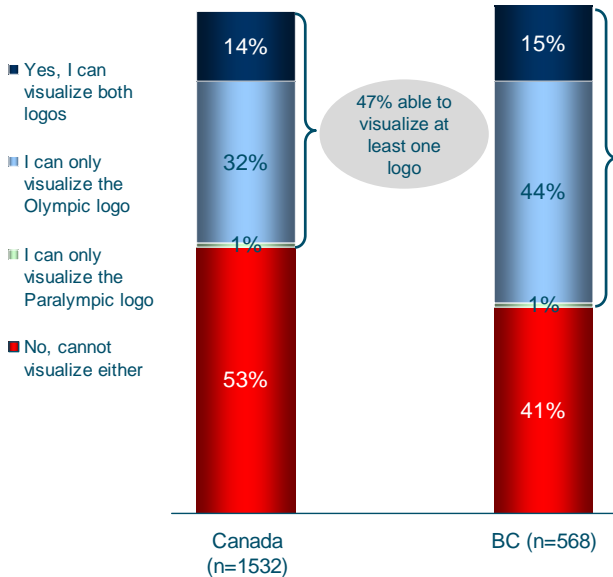
When presented with the logos for the 2010 Winter Games, many more Canadians reported being aware of the 2010 Olympic Games logo (73 percent) than of the 2010 Paralympic Games logo (23 percent). Predictably, B.C. residents reported being more aware than Canadians of both 2010 Olympic (88 percent) and 2010 Paralympic (35 percent) logos.

Aided awareness of the mascots was also higher among B.C. residents (70 percent) than among Canadians (28 percent). One in ten Canadians (11 percent) correctly recalled that there are three mascots, and 14 percent were able to accurately describe them using a given list of descriptions. In B.C., 36 percent correctly recalled that there are three mascots and 38 percent gave accurate descriptions.

Overall, Metro Vancouver residents were the most familiar with the 2010 Olympic and Paralympic logos and mascots, while Quebec residents were the least.

In summary, there was more awareness of the Olympics logos and mascots than of the Paralympic logos and mascots, and awareness was greater for those who resided geographically closer to the host city.

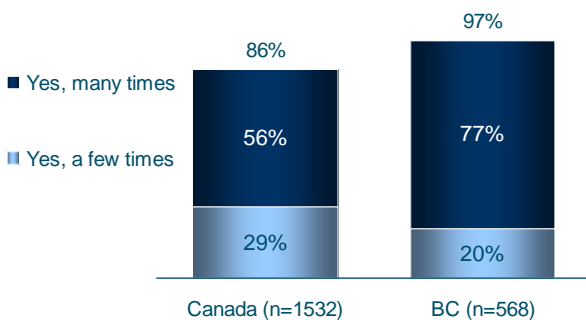
Q4. The 2010 Vancouver/Whistler Olympic and Paralympic Games have their own set of logos that are separate from the five Olympic rings. In your mind, can you visualize the 2010 Vancouver/Whistler Olympic and Paralympic Games logos?



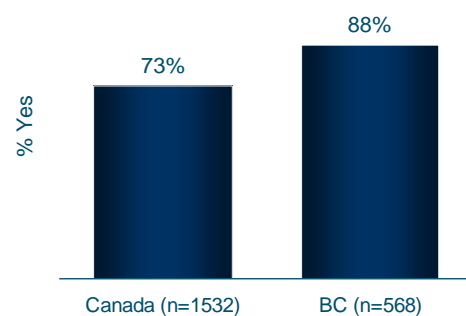
- 47% of Canadian residents say they can visualize at least one of the 2010 Olympic & Paralympic logos, including 14% who say they can picture both.
- Canadian residents are three times more likely to visualize the Olympic logo (46%) than the Paralympic logo (15%).
- By region, BC residents have the highest unaided recognition levels, with six in ten who report they can visualize at least one of the logos. This rises to seven in ten among Metro Van residents, specifically.



Q5. Here are the logos for the 2010 Vancouver/Whistler Olympic and Paralympic Games. Have you seen these before?



Q6. Did you know these were the 2010 Vancouver/Whistler Olympic and Paralympic Games logos?

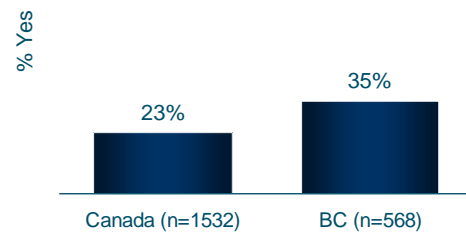
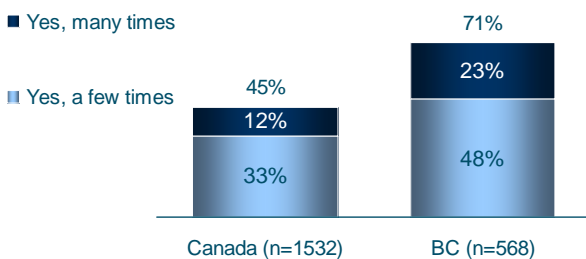


Note: 13% across Canada and 2% within BC say they have never seen either logo before.



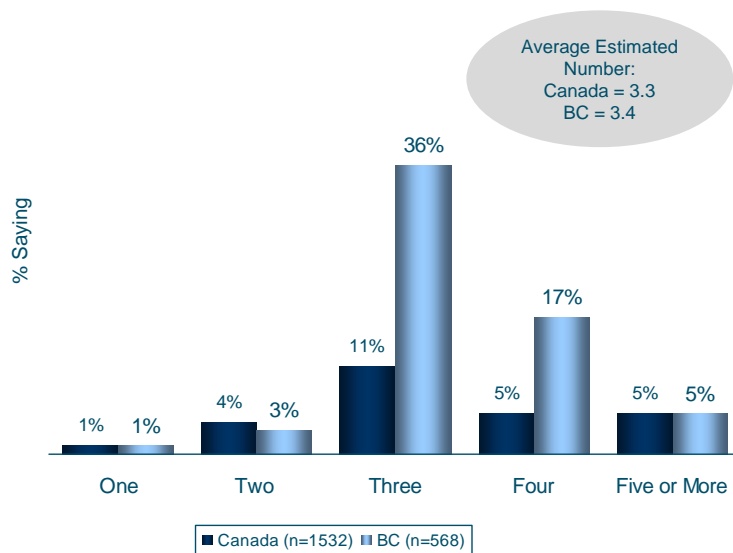
Q5. Here are the logos for the 2010 Vancouver/Whistler Olympic and Paralympic Games. Have you seen these before?

Q6. Did you know these were the 2010 Vancouver/Whistler Olympic and Paralympic Games logos?



Note: 13% across Canada and 2% within BC say they have never seen either logo before.

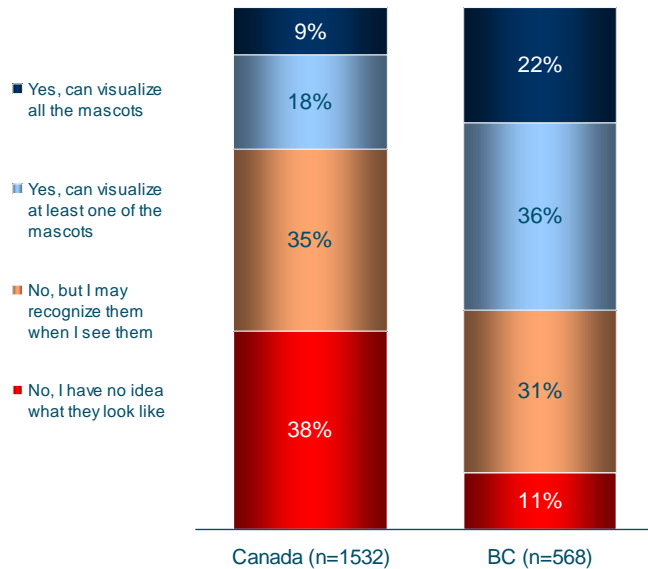
Q7. Do you recall how many 2010 Vancouver/Whistler Olympic and Paralympic official mascots there are?



- Most Canadian residents (73%) cannot recall how many Olympic and Paralympic mascots there are. 11% correctly say that there are three mascots, with most of the remaining residents recalling four or more mascots.
- Conversely, the majority of BC residents are able to give a number, with 36% correctly recalling there are three mascots. Another 17% say there are four mascots, which may be due to residents mistaking Muk Muk, the mascot sidekick, as an official mascot.
- Metro Vancouver residents are particularly likely to incorrectly recall four mascots (23% vs. 10% among the rest of BC).

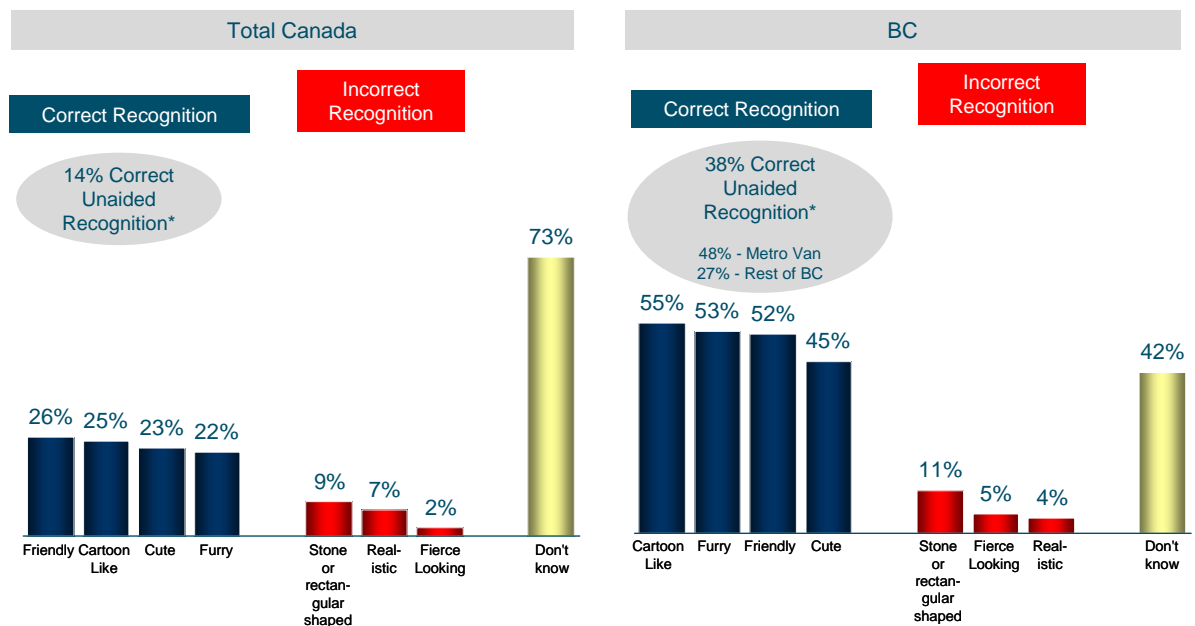
Note: 73% across Canada and 37% within BC could not recall how many mascots there are.

Q8. In your mind, can you visualize what the 2010 Vancouver/Whistler Olympic and Paralympic Games official mascots look like?



- 27% of Canadian residents report they can visualize at least one or all of the mascots. This is followed by one-third who say they may recognize the mascots when they see them, and 38% who have no idea what the mascots look like.
- Unaided recognition is much higher among BC residents, with over half (58%) saying they can visualize at least one or all of the mascots. Another 31% say they may recognize them when they see them, leaving only 11% who could not visualize them.
- Residents in Metro Vancouver show higher unaided recognition levels compared to those from the rest of BC. The majority of Metro Vancouver residents (68%) say they can picture at least one or all of the mascots, compared to 46% among those in other parts of BC.

Q9. When you think of the mascots are they...



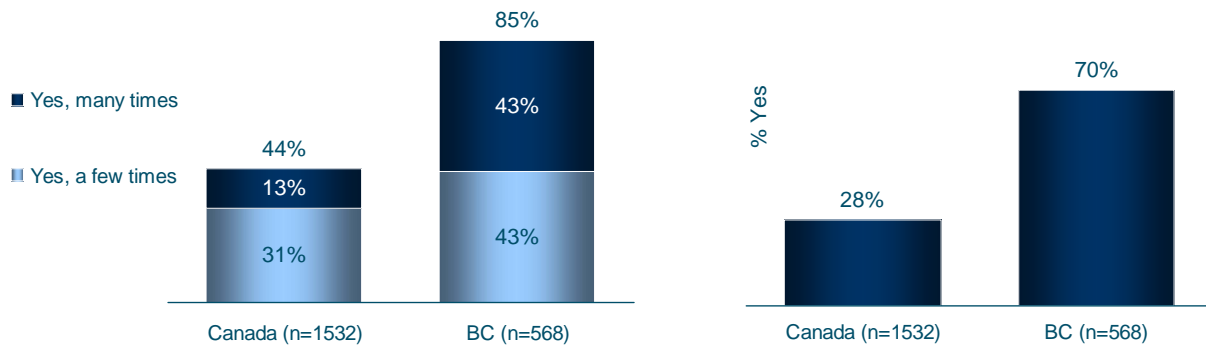
\*Identifies at least three or more correct descriptors and no incorrect descriptors.





Q10. Here are the official mascots for the 2010 Vancouver/ Whistler Olympic and Paralympic Games. Have you seen them before?

Q11. Did you know they were the official Olympic and Paralympic mascots?



## Demographic Profile

	Total Canada	Canadian Regions							BC Region	
		BC	AB	SK/MN	ON	QC	Atl.	Terr.	Metro Van	Rest Of BC
Base	1602	601	151	151	297	241	150	11*	274	327
	%	%	%	%	%	%	%	%	%	%
<u>Age</u>										
<35	27	29	29	32	27	26	23	46	31	26
35-54	39	38	41	37	39	39	39	34	39	37
55+	34	33	29	32	34	35	37	20	29	36
<u>Household Income</u>										
<\$50,000	41	46	34	45	37	47	47	39	41	51
\$50,000 - \$99,000	38	37	41	34	38	40	34	39	38	36
\$100,000+	21	17	25	21	25	13	19	27	20	13
<u>Education</u>										
Highschool or less	28	26	28	34	25	32	23	27	23	30
College/Technical/CEGEP	32	32	30	23	32	35	36	34	30	33
University or more	40	42	41	43	42	33	41	40	47	36
	Total	Canadian Regions							BC Region	
		BC	AB	SK/MN	ON	QC	Atl.	Terr.	Metro Van	Rest Of BC
Base	1602	601	151	151	297	241	150	11*	274	327
	%	%	%	%	%	%	%	%	%	%
<u>Occupation</u>										
Professional	17	15	20	19	18	16	16	32	17	13
Managerial/executive	8	9	5	9	8	6	10	-	11	7
Sales/customer service	9	10	8	6	9	8	14	14	11	7
Office/information worker	12	12	12	12	13	9	12	21	16	7
Labour (with technical/trade training)	7	7	8	11	5	7	4	-	7	8
Labour (no technical/trade training)	5	5	6	7	3	5	8	-	4	6
Farmer	-	-	-	1	-	-	1	-	-	-
Student (Full-time)	5	5	5	4	5	7	2	7	5	6
Homemaker	8	8	10	6	9	7	5	13	5	12
Retired	25	24	18	23	25	29	25	13	17	32
Unemployed	1	2	3	1	1	2	1	-	2	1
Disabled	1	2	1	1	1	2	-	-	2	1
Self-Employed	1	-	1	-	1	1	1	-	1	-
Other	-	1	2	-	-	-	-	-	1	-
<u>Gender</u>										
Male	48	49	48	52	48	48	48	51	49	49
Female	52	51	52	48	52	52	52	49	51	51

\*Caution: small base size.

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### **So36: Reported Complaints about Racism, Discrimination and Violence During the Games**

#### **a) Data Discussion**

The purpose of this indicator is to monitor incidents associated with exclusion, discrimination, racism, and violence in sports from the public and the athletes. These types of incidents are counter to the celebration of humanity and sport that is reflected in the Olympic and Paralympic Games.

The required data are the number of reported incidents during the Olympic and Paralympic Games, broken down by type of sport.

Data were available on two incidents that were reported in the news (described below).

#### **b) Data**

In Calgary, Alberta (the neighbour province to British Columbia), several members of the Canadian Paralympic cross country team received hate mail from the public when they were selected over other team members for four starting spots (reported in the Calgary Herald on March 4, 2010).

In Vancouver, after the Russian hockey team lost to Canada in the quarter finals, graffiti that was an obscenity against Canada was found in the room of one of the Russian hockey players in the Athletes' Village (reported in the Toronto Sun on May 4, 2010).

#### **c) Commentary**

The two reported incidents pertained more to violence (mental abuse and vandalism) than to exclusion, racism or discrimination. The 2010 Winter Games were able to celebrate humanity and sport with few incidents.

So37: National Sport Development
a) Data Discussion
<p>The purpose of this indicator is to look at the medals results of the host country's athletes as an outcome that may reflect the host country's policies of support and promotion for certain sports. The required data are medals per event and national records broken.</p> <p>Data were available from VANOC for the 2010 Winter Games.</p>
b) Data
<p>See attachment.</p>
c) Commentary
<p>Canadian Olympic athletes won a national record-breaking total of 26 medals: 14 Gold; 7 Silver; and 5 Bronze (the previous record was a total of 24 medals in Turin in 2006). Five of the medals resulted in records – four track records and one Olympic record (note: records for some of the sports were not tracked for the 2010 Winter Games). This achievement placed the country in third place for overall medals (after 37 medals for the United States and 30 for Germany), and in first place for Gold medals (four more than Germany, which was in second place with 10 medals).</p> <p>Canadian Paralympic athletes also won a national record-breaking total of 19 medals (10 Gold, 5 Silver and 4 Bronze), which placed Canada in third spot overall after the Russian Federation (total of 38 medals: 12 Gold) and Germany (total of 24 medals: 13 Gold). The previous record for Paralympic medals for Canada was 15 medals (Nagano 1988 and Salt Lake City 2002).</p> <p>Overall, the medals results and the records broken reflect provincial- and federal-level government support for Canadian athletes through its “Own the Podium” initiative, which is committed to excellence for winter and summer high-performance sport. The five-year initiative was launched in 2005 and supported by corporate sponsors and sport partners, but has been extended in consideration of the 2012 Olympic and Paralympic Summer Games in London, England.</p>

## So 37: National Sport Development - Medals and Records, Vancouver 2010

	Medals	Canadian Records <sup>1</sup>
<b>Olympic Winter Sports</b>		
<i>Bobsleigh</i>		
Bobsleigh Two Women	2	1 Track Record
Bobsleigh Four Man	1	0
<i>Curling</i>		
Women's	1	-
Men's	1	-
<i>Ice Hockey</i>		
Men's	1	-
Women's	1	-
<i>Figure Skating</i>		
Women's	1	0
Ice Dance	1	0
<i>Freestyle Skiing</i>		
Women's Moguls	1	-
Men's Moguls	1	-
Women's Ski Cross	1	-
<i>Snowboard</i>		
Men's Snowboard Cross	1	-
Men's Parallel Giant Slalom	1	-
<i>Skeleton</i>		
Men's	1	Track Record
<i>Short Track Speed Skating</i>		
Women's 500m Finals	2	0
Women's 3000 m Relay	1	0
Men's 500m Finals	2	1 Olympic Record
Men's 5000m Relay Finals	1	0
<i>Speed Skating</i>		
Women's 3000 m	1	0
Women's 1000m	1	Track Record
Women's 1500m	1	0
Women's 5000m	1	0
Women's Team Pursuit	1	Track Record
<b>Total</b>	<b>26</b>	<b>5</b>

## So 37: National Sport Development - Medals and Records, Vancouver 2010

	Medals	Canadian Records
<b>Paralympic Winter Sports</b>		
<i>Alpine Skiing</i>		
Alpine Skiing- Women's Slalom Visually Impaired	1	0
Women's Slalom Standing	2	0
Women's Giant Slalom Visually Impaired	1	0
Women's Giant Slalom Standing	1	0
Women's Downhill Visually Impaired	1	0
Women's Downhill Standing	1	0
Women's Super-G Visually Impaired	1	0
Women's Super-G Standing	1	0
Men's Super Combined Slalom Standing	2	0
Women's Super Combined Slalom Visually Impaired	1	0
Women's Super Combined Slalom Standing	1	0
<i>Nordic Skiing</i>		
Women's 10km Sitting	1	0
Men's 20 km free, Visually Impaired	1	0
Men's 1km Spring Classic Final, Visually Impaired	1	0
<i>Wheelchair Curling</i>		
Curling Mixed	1	0
<b>Total</b>	<b>19</b>	<b>0</b>

<sup>1</sup> Where no number is given, Vancouver 2010 did not track Olympic records/track records for some sports. Only the sports tracked by Vancouver 2010 were listed.



## So38: Volunteers

### a) Data Discussion

The purpose of this indicator is to show the support given by the population to the staging of the Games.

The required data are the number of volunteers (inscribed, selected, active before and during the Games), broken down by gender, function, origin, and by people with disabilities and without disabilities.

Most of the required data were not available. Only the number of volunteer applications for the Games (with the appropriate breakdown) and the number of actual volunteers (without a breakdown) were available from VANOC.

### b) Data

#### So38: Volunteers (number of applications)

Applications: Demographic Breakdown			Applications: Geographic Breakdown		
Female	45,459	57.5%	Metro Vancouver	20,894	26.4%
Male	33,538	42.5%	British Columbia	41,003	51.9%
Minority Status	13,309	16.8%	Canada	66,476	84.2%
Persons w/a Disability	986	1.2%	International	12,521	15.8%
Inuit	98	0.1%	<b>Total</b>	<b>78,997</b>	<b>100.0%</b>
Metis	623	0.8%			
First Nations	1,027	1.3%			
<b>Total all applicants</b>	<b>78,997</b>	<b>100.0%</b>			

Source: VANOC.

### c) Commentary

There were nearly 79,000 volunteer applications submitted to VANOC; this number includes pre-Games volunteers and Games-time volunteers. Female volunteer applicants outnumbered male applicants by 35 percent. Applicants with a minority status made up about 17 percent of all applicants, while people with disabilities, First Nations, Inuit, and Metis people each made about 1 percent of all applicants.

Geographically, 84 percent of volunteer applications were from Canadian applicants and about 16 percent from international applicants. A bit more than half of all volunteer applications came from British Columbia; while a quarter of all applications came from Metro Vancouver.

Only about a fifth of the volunteer applications were approved for the pre-Games and Games-time activities (17,273 volunteers in total), with approximately 6,500 additional volunteers for the Paralympic Games although it must be noted that some Paralympic volunteers were also Olympic volunteers, so the sum of these numbers (approximately 23,773) would include some double counting.

Although the required data were mostly not available, data on the number of volunteer applicants can be considered an adequate measure for the support given by the population to the

staging of the Games. Based on data on the volunteer applicants, there was both domestic (mostly) and international support for the staging of the Games. There was also some diversity in the demographic characteristics of the volunteer applicants, with a small percentage of the applicants being people with disabilities.

So39: Spectators
a) Data Discussion
<p>The purpose of the indicator is to provide a basic estimation of the number of people who will attend the sport and cultural events of the Olympic and Paralympic Games. These figures are used to describe the physical size of the Games and form the basis of the economic impacts (e.g., tourism, transport, etc.).</p> <p>The required data are the number of tickets sold and number of people present (accredited people and spectators) present at the sporting venues, the opening and closing ceremonies, the Torch Relay, the Medal's Plaza (for Winter Games), and the principal Live Site (Summer Games). The numbers are broken down by sport, by event, and by venue. Figures are given for the Olympic Games and for the Paralympic Games. Globally for the whole Games period, the average number of tickets sold per person and per geographical area is also recorded.</p> <p>Ticket sales data for sport events and the opening and closing ceremonies for the 2010 Olympic Games were obtained from the IOC. Data for sport events and the opening and closing ceremonies for the 2010 Paralympic Games were obtained from VANOC. Neither the data for the Olympic Games nor for the Paralympic Games were broken down by venue or by geographical area. The number of spectators for the Torch Relays was not available.</p>
b) Data
See attachments.
c) Commentary
<p>Almost 1.3 million spectators (ticket purchasers) attended an Olympic sport event and over 180,000 spectators attended a Paralympic sport event, while over 360,000 spectators attended Olympic ceremonies and almost 48,000 spectators attended Paralympic ceremonies. In total, almost 1.9 million spectators attended Olympic and Paralympic sport events and ceremonies.</p> <p>Although data on the numbers of tickets available for Olympic sport events were not available, Olympic and Paralympic hockey events appeared to be most popular, based on the highest absolute number of tickets sold – 556,638 tickets sold for Olympic ice hockey and 99,261 tickets (90 percent of available tickets) for Paralympic sledge hockey.</p> <p>Although data on the number of spectators with disabilities who attended Olympic events and ceremonies were not available, the proportion of attendees of Paralympic sport events and ceremonies ranged from 0.7 to 2 percent. The proportion of spectators with disabilities who attended Paralympic sport events (1.7 percent) was over twice that for Paralympic ceremonies (0.7 percent).</p> <p>Although data on the numbers of accredited people (who are not considered spectators who purchased tickets) at Olympic sport events and ceremonies were not available, the number of accredited people at events and ceremonies was generally between 1,000 and 5,000 (except for smaller-scale events/ceremonies, which had fewer accredited people).</p> <p>The estimated total number of spectators of the Olympic and Paralympic Torch Relays were not available. The Olympic Torch Relay covered 45,000 across Canada to over 1,000 communities, while the Paralympic Torch Relay included 10 communities in three provinces (<a href="http://www.canada2010.gc.ca/fin-rep2010/107-eng.cfm">http://www.canada2010.gc.ca/fin-rep2010/107-eng.cfm</a>, accessed January 27, 2011). The</p>

Olympic flame was reported to have attracted huge followings everywhere it went, including 23,000 on Parliament Hill (in Ottawa – the capital city of Canada), 12,000 in Moncton and 20,000 in Calgary. The Torch Relay route was designed so that approximately 90 percent of the Canadian population was within a one-hour drive from a Torch Relay celebration event (approximately 3 million people).

In summary, the Olympic and Paralympic sport events and ceremonies were attended by almost 1.9 million spectators (ticket purchasers), and while actual numbers of spectators for the Torch Relays were not available, the route was designed to be within geographical access for most Canadians.

### So39 - Spectators - Olympic Games

	Tickets Sold
<i>Sport event</i>	
Alpine skiing	54,723
Bobsled	32,221
Biathlon	29,694
Cross-country skiing	36,360
Curling	151,557
Freestyle skiing	69,164
Figure skating	91,957
Ice hockey	556,638
Luge	25,018
Nordic combined	11,396
Snowboard	46,182
Ski jumping	27,838
Skeleton	10,641
Speed skating	73,747
Short-track speed skating	46,106
Training figure skating	16,696
<i>Sport event total</i>	<i>1,279,938</i>
<i>Ceremonies</i>	
Vancouver Victory Ceremonies	220,488
Whistler Victory Ceremonies	57,775
Opening Ceremony	41,607
Closing Ceremony	43,114
<i>Ceremonies total</i>	<i>362,984</i>
<i>Sport event and ceremonies total</i>	<i>1,642,922</i>

### So39 - Spectators - Paralympic Games

	<i>Tickets</i>			<i>Attendees</i>		
	For sale	Sold	% Sold	People with disabilities		Accredited <sup>1</sup>
				Number	Proportion	
<i>Sport event</i>						
Wheelchair curling	69,642	44,679	64.2%	880	2.0%	2,994
Sledge hockey	110,304	99,261	90.0%	1,647	1.7%	5,401
Cross-country skiing	13,420	8,150	60.7%	63	0.8%	1,550
Alpine skiing	27,235	25,276	92.8%	453	1.8%	2,380
Biathlon	5,486	4,557	83.1%	37	0.8%	494
<i>Sport event total</i>	<i>226,087</i>	<i>181,923</i>	<i>80.5%</i>	<i>3,080</i>	<i>1.7%</i>	<i>12,819</i>
<i>Ceremonies</i>						
Opening Ceremony	42,810	42,641	99.6%	309	0.7%	3,186
Closing Ceremony	5,438	5,340	98.2%	43	0.8%	0
<i>Ceremonies total</i>	<i>48,248</i>	<i>47,981</i>	<i>99.4%</i>	<i>352</i>	<i>0.7%</i>	<i>3,186</i>
<i>Sport event and ceremonies total</i>	<i>274,335</i>	<i>229,904</i>	<i>83.8%</i>	<i>3,432</i>	<i>1.5%</i>	<i>16,005</i>

<sup>1</sup> No proportion is calculated for people who were accredited because they were not spectators who bought tickets.

## So40: Attending Events – Affordable Games

### a) Data Discussion

The purpose of this indicator is to illustrate the synergies between some of the factors affecting the image of the host city and the Olympic and Paralympic Games. These factors include empty stadiums, public frustration about high ticket prices, and too few available tickets.

The required data are the percentage of tickets to be sold to the general public, the price structure of the tickets (five classes of prices), the part of tickets that are affordable, and the real number of people attending the Olympic and Paralympic events compared to the total capacity of the venue (per event per sport).

Data were generally mostly available for both the Olympic Games (from VANOC) and the Paralympic Games (from the IOC).

### b) Data

See attachments.

### c) Commentary

For Olympic Games, 1.54 million tickets were available for sale and for the Paralympic Games, 250,000 tickets for available for sale (as reported in the VANOC Consolidated Financial Report of December 17, 2010). These totals do not include the 50,000 Olympic and Paralympic tickets for events and ceremonies that were distributed for free to local residents who might not have the financial means to purchase Games tickets (reported in the VANOC Sustainability Report 2009/2010). (Note: The totals for this indicator differ from those for So39 Spectators based on data obtained from the IOC. The source of discrepancy between the totals for So40 and for So39 is unknown.)

*Olympic Games.* Most tickets were in price class A (62 percent) or class B (30 percent), which were generally the more expensive classes of tickets per event.

Seventy-five percent of Olympic tickets were priced at \$150 or less, which were at most five percent of the average monthly income of Canadians in 2008 (year that data was available).

One half of the tickets were priced at \$80 or less, which were at most three percent of average monthly income. Twenty-five percent of tickets were priced at \$50 or less, which were at most two percent of average monthly income. The most costly tickets (\$1,100 for the Opening Ceremonies, 1.3 percent of total tickets for all events) were 35 percent of average monthly income. While some ticket prices were a sizeable proportion of average monthly income in 2008, most were priced at 5 percent or less of average monthly income (i.e., most ticket prices were “affordable”).

The Gini coefficient for Canada for 2008 was 0.364, indicating some inequality in income distribution (0 = total equality while 1 = maximal inequality). In combination with the average monthly income in 2008, the Gini coefficient data suggests that some individuals may not be able to “afford” Olympic tickets (i.e., the cost of tickets would represent a larger proportion of their monthly income).

The *total* number of seats available in a venue for an event is the Gross Capacity. For any event, only a portion of Gross Capacity is available to the general public, otherwise known as Net Sellable (the rest is reserved for accredited persons, etc.). The proportion of seats available

to the general public per sport/ceremony ranged from 57.5 percent to 95.0 percent, and was 82.6 percent across all sports/ceremonies. Overall, 1,747,598 out of 2,115,739 seats were available to the general public. The number of tickets sold compared to the number of tickets available to the general public per sport/ceremony ranged from 93.9 percent to 99.9 percent (some individual events were actually sold out). The data suggest that most of the seats in the venues were available to the general public, and that the public's demand for tickets (relative to the supply of seats) was met and in some cases may have surpassed supply (sold out events).

*Paralympic Games.* Tickets ranged in price from \$15 to \$175. Although ticket sales by price class (\$175, \$95, \$65 and \$30) were not available for the Paralympic Opening Ceremonies, the largest proportions of tickets were \$15 (32 percent of total tickets) and \$20 (27 percent of total tickets); these prices were less than 1 percent of the annual monthly income in Canada in 2008 and therefore were "affordable."

The numbers of Net Sellable tickets for Paralympic sports/ceremonies were not available; therefore, the demand for tickets (relative to supply of seats) could not be calculated.

*Summary.* Tickets for the Paralympic Games were generally more "affordable" than tickets for the Olympic Games. For the Olympic Games, most seats in the venues were available to the general public, who were interested in attending the events (98.7 percent of available tickets were sold, and in some cases events were sold out). Due to lack of data, the availability of seats to the general public for Paralympic sports/ceremonies could not be calculated.



So40 - Attending Events - Affordable Games (Olympic Games, Tickets by Price Code)<sup>1</sup>

Event	Tickets Sold	Price A			Price B			Price C			Other Price Category			
		# of Tickets	Cost	% of Ticket Group	# of Tickets	Cost	% of Ticket Group	# of Tickets	Cost	% of Ticket Group	# of Tickets	Cost	% of Ticket Group	Category
<i>Alpine Skiing</i>	11,882	5,025	\$150	42%	6,857	\$100	58%							
	42,841	20,007	\$120	47%	22,834	\$85	53%							
<i>Biathlon</i>	29,694	11,446	\$70	39%	18,248	\$25	61%							
<i>Bobsleigh</i>	17,619	3,586	\$85	20%	14,033	\$40	80%							
	14,602	3,580	\$70	25%	11,022	\$30	75%							
<i>Cross-country skiing</i>	36,360	13,794	\$70	38%	22,566	\$25	62%							
<i>Curling</i>	9,893	9,893	\$125	100%										
	19,576	19,576	\$100	100%										
	122,088	122,088	\$65	100%										
<i>Figure skating</i>	9,370	3,409	\$525	36%	3,125	\$325	33%	2,796	\$175	30%	40	DNAA	0%	Price J
	36,781	13,254	\$450	36%	12,331	\$275	34%	11,196	\$150	30%				
	45,806	16,196	\$420	35%	15,414	\$250	34%	9,233	\$150	20%	4,963	\$50	11%	Price D
<i>Free-style skiing</i>	34,716	18,219	\$150	52%	16,497	\$75	48%							
	16,810	8,642	\$125	51%	8,168	\$50	49%							
	17,638	9,224	\$100	52%	8,414	\$50	48%							
<i>Ice hockey</i>	14,345	8,260	\$775	58%	5,199	\$550	36%	886	\$350	6%				
	42,219	24,120	\$425	57%	15,423	\$275	37%	2,676	\$175	6%				
	19,149	11,303	\$325	59%	6,339	\$200	33%	1,507	\$125	8%				
	47,754	27,738	\$300	58%	16,729	\$175	35%	3,287	\$100	7%				
	41,884	23,865	\$200	57%	15,393	\$150	37%	2,626	\$100	6%				
	305,280	172,082	\$140	56%	114,157	\$80	37%	19,035	\$50	6%	2	DNAA	0%	Price M
	86,007	54,802	\$75	64%	21,671	\$45	25%	9,534	\$25	11%	4	DNAA	0%	Price S
<i>Luge</i>	15,976	3,660	\$85	23%	12,316	\$40	77%							
	9,042	2,376	\$70	26%	6,666	\$30	74%							
<i>Nordic combined</i>	11,396	4,181	\$120	37%	7,215	\$50	63%							
<i>Short track speed skating</i>	46,106	16,385	\$150	36%	15,911	\$110	35%	13,810	\$50	30%				
<i>Skeleton</i>	10,641	1,269	\$85	21%	4,809	\$40	79%							
	6,078	1,238	\$70	27%	3,325	\$30	73%							
<i>Ski jumping</i>	27,838	6,442	\$210	37%	10,791	\$120	63%							
	17,233	4,261	\$160	40%	6,344	\$80	60%							
<i>Snowboard</i>	46,182	8,598	\$150	68%	4,000	\$65	32%							
	12,598	17,274	\$125	51%	16,310	\$50	49%							
<i>Speed skating</i>	73,747	49,298	\$185	67%	24,449	\$95	33%							
<i>Victory ceremonies - Vancouver</i>	220,488	199,086	\$22	90%							21,402	\$50	10%	Price P
<i>Victory ceremonies - Whistler</i>	57,775	57,775	\$0	100%										
<i>Closing ceremony</i>	43,114	21,282	\$775	49%	12,012	\$500	28%	6,106	\$300	14%	3,714	\$175	9%	Price D
<i>Opening ceremony</i>	41,607	21,174	\$1,100	51%	10,872	\$750	26%	6,070	\$500	15%	3,491	\$175	8%	Price D
<i>Total</i>	1,626,226	1,014,408		62%	489,440		30%	88,762		5%	33,616		2%	

<sup>1</sup> The figures in this table reflect tickets sold (not tickets available). The source of discrepancies (on average about 5%) between the figures in this table and other tables can not be determined.

So40 - Attending Events - Affordable Games  
 (Olympic Games, Ratios)

Ticket Price	Number of Tickets Sold	Cumulative Tickets Sold	Ratio of Price to Wage Average monthly wage = \$3,142.67 <sup>1</sup>	Ratio of Price to Gini Coefficient Gini 2008 = 0.364 <sup>2</sup>	Percentiles of Tickets
\$0	57,775	57,775	0%	0	
\$20	4,084	61,859	1%	55	
\$22	199,086	260,945	1%	60	
\$25	50,348	311,293	1%	69	
\$30	21,013	332,306	1%	82	
\$40	31,158	363,464	1%	110	
					406,557 (25th percentile)
\$45	21,671	385,135	1%	124	
\$50	95,233	480,368	2%	137	
\$65	126,088	606,456	2%	179	
\$70	32,434	638,890	2%	192	
					813,113 (50th percentile)
\$75	71,299	710,189	2%	206	
\$80	120,501	830,690	3%	220	
\$85	31,349	862,039	3%	234	
\$95	24,449	886,488	3%	261	
\$100	41,570	928,058	3%	275	
\$110	15,911	943,969	4%	302	
\$120	34,979	978,948	4%	330	
\$125	37,316	1,016,264	4%	343	
					1,219,670 (75th percentile)
\$140	172,082	1,188,346	4%	385	
\$150	84,049	1,272,395	5%	412	
\$160	4,261	1,276,656	5%	440	
\$175	29,406	1,306,062	6%	481	
\$185	49,298	1,355,360	6%	508	
\$200	30,204	1,385,564	6%	549	
\$210	6,442	1,392,006	7%	577	
\$250	15,414	1,407,420	8%	687	
\$275	27,754	1,435,174	9%	755	
\$300	33,844	1,469,018	10%	824	
\$325	14,428	1,483,446	10%	893	
\$350	886	1,484,332	11%	962	
\$420	16,196	1,500,528	13%	1,154	
\$425	24,120	1,524,648	14%	1,168	
\$450	13,254	1,537,902	14%	1,236	
\$500	18,082	1,555,984	16%	1,374	
\$525	3,409	1,559,393	17%	1,442	
\$550	5,199	1,564,592	18%	1,511	
\$750	10,872	1,575,464	24%	2,060	
\$775	29,542	1,605,006	25%	2,129	
\$1,100	21,174	1,626,180	35%	3,022	
DNAA	46	1,626,226	-	-	

<sup>1</sup> Average monthly income is calculated from the average annual income in Canada in 2008 (\$37,700 average income divided by 12 months). Source: Search in CANSIM in E-STAT, Statistics Canada ([http://estat.statcan.gc.ca/cgi-win/cnsmcgi.exe?Lang=E&EST-Fi=EStat/English/CII\\_1-eng.htm](http://estat.statcan.gc.ca/cgi-win/cnsmcgi.exe?Lang=E&EST-Fi=EStat/English/CII_1-eng.htm)), accessed February 16, 2011.

<sup>2</sup> The Gini coefficient is for 2008 for adjusted total income for individuals in Canada. Source is the same as in Footnote 1.

So40 - Attending Events - Affordable Games  
 (Olympic Games, Seats for the General Public)

Event	Gross Capacity <sup>1</sup>	Net Sellable to		Tickets Sold	% of Tickets Sold
		General Public <sup>2</sup>	% Available to General Public <sup>3</sup>		
Sport events					
Alpine Skiing	68,998	60,138	87.2%	59,493	98.9%
Biathlon	53,061	35,047	66.1%	34,816	99.3%
Bobsleigh	50,610	44,097	87.1%	44,010	99.8%
Cross-country skiing	67,642	42,880	63.4%	41,974	97.9%
Curling	167,871	159,547	95.0%	156,384	98.0%
Figure skating	130,095	100,313	77.1%	97,856	97.6%
Free-style skiing	73,573	69,799	94.9%	69,674	99.8%
Ice hockey	678,865	578,563	85.2%	571,129	98.7%
Luge	38,250	31,385	82.1%	31,233	99.5%
Nordic combined	44,006	25,296	57.5%	24,927	98.5%
Short track speed skating	65,034	50,328	77.4%	49,911	99.2%
Skeleton	16,549	13,787	83.3%	13,754	99.8%
Ski jumping	37,972	30,644	80.7%	30,427	99.3%
Snowboard	50,438	46,669	92.5%	46,512	99.7%
Speed skating	87,330	77,604	88.9%	76,691	98.8%
Ceremony events					
Victory ceremonies - Vancouver	292,702	228,647	78.1%	228,526	99.9%
Victory ceremonies - Whistler	78,622	64,904	82.6%	60,955	93.9%
Closing ceremony	56,942	44,447	78.1%	44,280	99.6%
Opening ceremony	57,179	43,503	76.1%	42,321	97.3%
Totals	2,115,739	1,747,598	82.6%	1,724,873	98.7%

<sup>1</sup> Gross capacity is the total number of seats available in venues for seating of all persons (e.g., general public, accredited persons, etc.).

<sup>2</sup> Net sellable is the number of seats (tickets) available to the general public.

<sup>3</sup> The proportion of seats available to the general public equals net sellable divided by gross capacity.

### So40 - Attending Events - Affordable Games (Paralympic Games) (Ratios)

Ticket Price	Tickets Sold	% of Total Tickets	Ratio of Price to Wage	Ratio of Price to Gini Coefficient
<i>Average monthly wage = \$3,142.67<sup>1</sup>    Gini 2008 = 0.364<sup>2</sup></i>				
\$15	72,946	32%	0.5%	41
\$20	61,151	27%	0.6%	55
\$25	20,913	9%	0.8%	69
\$30	20,682	9%	1.0%	82
\$50	5,457	2%	1.6%	137
\$60	5,340	2%	1.9%	165
DNAA	43,415	19%	-	-
Total	229,904	100%	-	-

<sup>1</sup> Average monthly income is calculated from the average annual income in Canada in 2008 (\$37,700 average income divided by 12 months). Source: Search in CANSIM in E-STAT, Statistics Canada ([http://estat.statcan.gc.ca/cgi-win/cnsmcgi.exe?Lang=E&EST-Fi=EStat/English/CII\\_1-eng.htm](http://estat.statcan.gc.ca/cgi-win/cnsmcgi.exe?Lang=E&EST-Fi=EStat/English/CII_1-eng.htm)), accessed February 16, 2011.

<sup>2</sup> The Gini coefficient is for 2008 for adjusted total income for individuals in Canada. Source is the same as in Footnote 1.

### So40 - Attending Events - Affordable Games (Paralympic Games)

Event	Tickets Sold	Ticket Price - Individual	Ticket Price - Group <sup>1</sup>
<i>Wheelchair curling</i>			
	4,977	\$30	-
	3,965	\$20	-
	35,737	\$15	\$10
<i>Ice sledge hockey</i>			
	5,457	\$50	-
	15,705	\$30	-
	20,913	\$25	-
	57,186	\$20	\$10
<i>Cross-country skiing</i>			
	8,150	\$15	\$10
<i>Biathlon</i>			
	4,557	\$15	\$10
<i>Alpine skiing</i>			
	24,502	\$15	\$10
	774	DNAA	DNAA
Opening Ceremony	42,641	DNAA <sup>2</sup>	-
Closing Ceremony	5,340	\$60	-
<i>Total</i>	229,904		

<sup>1</sup> Group prices are for groups of 20 or more persons at the time of purchase.

<sup>2</sup> Number of tickets sold per price category is not available (Price A = \$175, Price B = \$95, Price C = \$65, Price D = \$30).

## **So41: Promotion of Minorities and Indigenous Population (People with Disabilities, Youth, Seniors, Equity Seeking Groups)**

### **a) Data Discussion**

The purpose of this indicator is to show the opportunities provided by the Olympic and Paralympic Games (e.g., educational and promotional plans) to change mentalities, perceptions, and the way people think about minorities and indigenous populations.

The required data are descriptions of the action plans of the organizing committee or related organizations – type of action, duration, number of people potentially reached by the action, and costs of the program.

The data for this indicator relate only to programs that aimed to educate the public (i.e., change mentalities and negative perceptions of minorities and indigenous populations) and promote to the public that minorities and indigenous populations are valued members of society. Many other plans and programs, although equally important, are not included for this indicator because they are not directed at the public; these other plans and programs are OCOG-operations-related plans (e.g., VANOC hiring practices, procurement, etc.), venue development plans (e.g., accessibility), and sport participation and other skills-based programs for minorities and indigenous populations.

### **b) Data**

See attachment.

### **c) Commentary**

A total of 13 educational and promotional programs related to minorities and indigenous populations and aimed at the general public were implemented through VANOC (9 programs) and 2010 Legacies Now (4 programs). 2010 Legacies Now was created in 2000 by the Provincial Government and the Vancouver 2010 Bid Corporation to support Vancouver's bid for the 2010 Winter Games. Since then, the role of 2010 Legacies Now, which is a not-for-profit organization, has expanded to focus on developing community legacies from the 2010 Winter Games. Specifically, 2010 Legacies Now aims to use an inclusive approach to strengthen sport and recreation, healthy living, literacy, accessibility and volunteerism.

The list of programs shows the range of educational and promotional programs in terms of their purpose, duration, reach, and cost, which were all quite varied (and thus not compared against each other or summed). While there were 13 programs related to raising awareness of and promoting minorities and indigenous populations, many more plans, strategies and practices (not listed here) were implemented to improve sport participation (and other skills) for minorities and indigenous populations. The creation of all the aforementioned plans, whether listed here or not, suggests that efforts were made by the OCOG (and a related organization) to raise awareness of, promote, and enhance the skills of minorities and indigenous populations. The effectiveness of these plans in changing public perceptions of minorities and indigenous populations remains largely unevaluated.

#### So41 - Promotion of Minorities and Indigenous Populations

Program Name	Description	Duration	Type	Reach	Cost
<b>VANOC</b>					
Paralympic School Day	Activities to create awareness and understanding in schools about persons with a disability	May 2006 to Nov. 10, 2009	Educational	73 schools, 7,500 students	\$60,000
Ticket to Inspiration	Reduced price tickets (\$5) for school groups to attend the Paralympic Games	Mar. 15 to 19, 2010	Promotional	30,000 students & teachers attended	\$181,000
2010 Aboriginal Pavilion and Business Showcase	Showcase of First Nations, Inuit and Metis cultures	Feb. 1 to 28, 2010	Promotional	>300,000 visitors	\$2.5 million in programming (\$3.5 for construction)
Find Your Passion in Sport	Poster series showcasing six young Aboriginal athletes, their sports and their languages, and online lesson starters over VANOC's web-based education portal (vancouver2010.com/edu).	Mar. 2007 and Mar. 2009 (posters), online lessons Mar. 2009 to 2010	Promotional	DNAA	\$300,000
Canadian Olympic School Program	Includes Olympic stories (e.g., Aboriginals and people with disabilities) for grades 2 to 12 - promoted on VANOC's web-based education portal (program also includes other activities)	Ongoing (a Canadian Olympic Committee program)	Promotional	>65,000 members as of Mar. 2010, 25% of the 6 million page views during the Games were via VANOC's web-based education portal	\$721,000 (2007 to 2010)
Cultural Olympiads 2008, 2009 and 2010	Festivals showcasing art and culture of Aboriginal peoples, persons with a disability, inner-city organizations, francophone organizations, and other cultures present with the Canadian population	Feb. 2008, Feb. 2009, and Jan. 22 to Mar. 21, 2010	Promotional	Visitors: 2008: 163,128 2009: 283,773 2010: 6,017,576	\$84,970,829 (2008 to 2010)
Aboriginal Sport Gallery at B.C. Sports Hall of Fame	Physical collection and celebration of Aboriginal sport and athletes in BC, including a travelling exhibit that toured communities across B.C.	Jun. 2008 ongoing	Promotional	DNAA	\$140,000
Vancouver 2010 Indigenous Youth Gathering	Hosting young adult Aboriginal role models and emerging leaders aged 19 to 29 years old from across Canada, including leadership development, Olympic Truce, sport, venues tours, interaction with athletes, and an opportunity to perform at the Olympic Opening Ceremonies	Jan. 30th to Feb. 14th, 2010	Promotional	>300 Aboriginal Youth participants, >3 billion viewers of the Opening Ceremonies	\$4 million
Venues Aboriginal Art Program	Showcasing of First Nations, Inuit and Métis works of art during the 2010 Winter Games - these works have been permanently installed in Olympic and Paralympic venues and will remain as a legacy of the Games	Jun. 2008 to Mar. 2010, ongoing	Promotional	>90 Aboriginal artists participated, visitors to Games venues	\$3.5 million
<b>2010LegaciesNow</b>					
Accessible Tourism - Accessibility Rating	Tourism businesses can participate in an accessibility assessment and receive recommendations to improve accessibility	Ongoing	Educational	3,600 business assessed	\$343,000
Accessible Playgrounds Project	To build three accessible playgrounds in Vancouver, Whistler, and Richmond	2010 ongoing	Promotional	DNAA	\$1,200,000
Measuring Up	Grants program to help communities assess and improve local accessibility and inclusion for persons with disabilities and others	2006 ongoing	Educational	88 communities	Up to \$25,000 per grant
Virtual Voices Village	Mentorship program for students with disabilities to develop writing and journalism skills, with the students' work posted to the Virtual Voices Village online community	Students' work from Games-time still available on the online community as of Feb. 9, 2011	Promotional	DNAA	\$183,560



## So42: Non-Accredited People Working in Context Activities

### a) Data Discussion

The purpose of this indicator is to give an overview of the number of people working in support functions for Olympic activities, but who are not accredited because they do not require access to venues. These people work for different authorities (municipalities or regional/national authorities) or for private organizations (sponsors, security agents, etc.). Information for this indicator generally escapes Games statistics.

The required data are the number of people (expressed in full-time job-days) who are working in support functions but are not accredited, broken down by function.

The required data on accreditation were not available. Instead, data on the number of staff (regardless of whether they were accredited or not, which was not specified) involved in the Games-time external workforce (security and police force, the City of Vancouver "Host City Team" and the transit host program) and in the Games-time Olympic workforce were used.

### b) Data

#### Games-Time External Workforce (So42)

Security and Police	City of Vancouver Staff "Hosts"	Transit Hosts	Total
15,000	485	210	15,695

Source: Royal Canadian Mounted Police, BC, Canada (<http://bc.rcmp.ca>); City of Vancouver (<http://vancouver.ca>); Translink ([buzzer.translink.ca](http://buzzer.translink.ca)).

#### Games-Time Olympic Workforce (So42)

Contractors	Co-op/Intern	Full-time	Temporary	Secondee	Volunteer	Total
763	143	1,331	1,578	356	17,273	21,693

Source: VANOC Sustainability Report 2009/2010.

### c) Commentary

The support functions shown for the Games-time external workforce are not exhaustive; they only reflect data that were available (examples of data that were mentioned in the Technical Manual but were not available include municipal street cleaning, IT systems, etc.). For the Games-time external workforce for which data were available, approximately 15,695 staff were reported to have participated in a support function. This external workforce was fairly large as it was almost three-quarters the size of the Olympic workforce (21,693). The Olympic workforce itself was composed mostly of volunteers (17,273).

Although the available data do not specify whether members of either the Olympic or external workforce were accredited or not, the data do suggest that the external workforce that supported the Games was fairly large, especially when compared to the size of the Olympic workforce and given that the numbers for the external workforce are not exhaustive. Clearly, these support functions were induced by the Games, i.e., without the Games, this external workforce would not have been assembled to serve a support function. The external workforce is an important, additional resource that supports, but is not part of, the organizing committee.

## So47: Sustainability of Accessibility Provisions in Olympic and Paralympic Venues

### a) Data Discussion

The purpose of this indicator is to evaluate the extent to which Olympic and Paralympic venues (competition and non-competition) were made accessible on the occasion of the Games and after. Accessible venues provide lasting opportunities for all people engaging in sport, either as athletes or as spectators.

The required data are compliance (or not) with accessibility criteria, broken down by category of disability (wheelchair user, mobility impaired, visually impaired, hearing impaired, mentally impaired).

The required data were available, except for the category “mentally impaired,” of which there was in general no mention of additional services, and the final situation (Games legacy) for some categories.

### b) Data

#### So 47 : Sustainability of Accessibility Provision in Olympic and Paralympic Venues

	<u>Wheelchair users</u>		<u>Mobility impaired</u>		<u>Visually impaired</u>		<u>Hearing impaired</u>	
	Games-time	Final <sup>1</sup>	Games-time	Final <sup>1</sup>	Games-time	Final <sup>1</sup>	Games-time	Final <sup>1</sup>
<i>Olympic Games</i>								
BC Place Stadium	yes	yes	yes	yes	yes	DNAA <sup>2</sup>	yes	DNAA
Canada Hockey Place	yes	yes	yes	DNAA	yes	DNAA	yes	no
Vancouver Olympic Centre	yes	yes	yes	yes	yes	yes	yes	DNAA
Pacific Coliseum	yes	yes	yes	no	yes	yes	yes	DNAA
UBC Thunderbird Arena	yes	yes	yes	DNAA	yes	yes	yes	DNAA
Whistler Sliding Centre	yes	DNAA	yes	DNAA	yes	DNAA	yes	DNAA
Whistler Creekside	yes	yes	yes	yes	yes	some <sup>3</sup>	yes	DNAA
Whistler Olympic Park	yes	DNAA	yes	DNAA	yes	DNAA	yes	DNAA
Whistler Medals Plaza	yes	DNAA	yes	DNAA	yes	DNAA	yes	DNAA
Richmond Olympic Oval	yes	yes	yes	some <sup>3</sup>	yes	DNAA	yes	DNAA
Cypress Mountain	yes	some <sup>3</sup>	yes	no	yes	yes	yes	no
<i>Paralympic Games</i>								
Vancouver Paralympic Centre	yes	yes	yes	yes	yes	yes	yes	DNAA
UBC Thunderbird Arena	yes	yes	yes	DNAA	yes	yes	yes	DNAA
Whistler Creekside	yes	yes	yes	yes	yes	some <sup>3</sup>	yes	DNAA
Whistler Paralympic Park	yes	DNAA	yes	DNAA	yes	DNAA	yes	DNAA
BC Place	yes	yes	yes	yes	yes	DNAA	yes	DNAA
Whistler Medals Plaza	yes	DNAA	yes	DNAA	yes	DNAA	yes	DNAA

<sup>1</sup> 'Final' refers to the legacy after the Games, i.e., whether the accessibility is permanent.

<sup>2</sup> DNAA stands for data not available or accessible.

<sup>3</sup> 'Some' means that some credit is given for minimal accessible provisions such as seating or one sign-language interpreter volunteer.

### c) Commentary

At Games-time, all venues were accessible (no data were available for the category “mentally

impaired). All venues allowed guide dogs on the premises and supplied assistive hearing devices and wheelchairs, although quantities of loan items were limited. It should also be noted that accessibility provisions (e.g. parking, entrances, washrooms, concessions, seating) vary between venues.

For the final situation (Games legacy), data were not available for easier (wheelchair) access, wheelchair loan, and/or loan of hearing devices, and/or guide dogs in many of venues at the time of this report.

In summary, in cases where data were available on the occasion of the Games, the venues complied with accessibility criteria for the various categories of disability. In most cases where data were available for the final situation, the venues remained compliant with accessibility criteria, except for one venue (Cypress Mountain).

## 3.2. Context/Event Social Indicators

<b>So3: Pressure Groups</b>
<b>a) Data Discussion</b>
<p>The purpose of this indicator is to gauge the involvement of civil society in public affairs. A pressure group is defined in the Technical Manual as political or social movements not forming part of the political apparatus but which take part in the political arena either directly or by making the political apparatus react, by putting issues on the political agenda, for instance.</p> <p>The required data are an inventory of the main pressure groups that are in support or in opposition to the Games (&gt;200 members for the Winter Games).</p> <p>Data from the year 2009 were available for the city, region, and country for pressure groups that oppose the Olympic Games, monitor the Games, or try to raise public attention to an issue by using media coverage of the Games. No data were available on the size of membership in these groups.</p>
<b>b) Data</b>
See attachment.
<b>c) Commentary</b>
<p>Of the five pressure groups presented, two specifically oppose the Olympic Games (The Anti-Poverty Committee and No 2010). Two other groups (2010 Watch and IOCC) are dedicated to critically monitoring whether promises made in relation to the Games are being fulfilled, or whether civil rights and liberties are being limited or encroached upon by Games-related activities. The fifth pressure group, PETA, is international and leveraged the Games to promote one of their issues, specifically the banning of baby seal hunts. Seal hunts were linked to the Games when Canadian politicians pushed for a motion to use seal products in official Olympic Games uniforms to protest an European Union ban on seal products that could impact Canadian hunters and exporters of seal products (VANOC decided that the uniforms would not contain sealskin or fur).</p> <p>In summary, several pressure groups were actively involved in opposing, monitoring, or leveraging the 2010 Winter Games with respect to public affairs.</p>

### So3: Pressure Groups, City of Vancouver, Metro Vancouver, and Canada, 2009

#### City of Vancouver

*The Anti-Poverty Committee* A group of citizens responsible for active protests surrounding the 2010 Olympic Games, including the "Homes Not Games" campaign. The group protests the Games in Vancouver on the basis that funding for affordable housing is being reallocated to support the 2010 Olympic Games.

*2010 Watch* The group defines itself as the only truly independent watchdog of the 2010 Olympic Games. It posts articles and discussions online that are critical of the Olympic Games in Vancouver.

*No 2010: No 2010 Olympics on Stolen Native Land* A militant group of activists in the Vancouver area that protests the Olympics in a somewhat radical fashion, seemingly organized and backed by First Nations, although no direct responsibility has been taken by the latter.

#### Metro Vancouver

*Impact on Community Coalition (IOCC)* An independent organization dedicated to ensuring that environmental, social, transportation, housing, economic and civil rights issues associated with the Vancouver/Whistler 2010 Olympic Games are addressed from a community perspective.

#### Canada

*People for the Ethical Treatment of Animals (PETA)* An international animal rights organization focusing on localized animal welfare issues. Their "Stop the Slaughter" campaign for Vancouver 2010 involves utilizing media coverage to leverage the Games for the banning of baby seal hunts.

## **So31: Homeless, low-rent Market and Affordable Housing**

### **a) Data Discussion**

The purpose of this indicator is to monitor the situation of low-rent market housing (affordable housing for low-income families, singles, seniors, and people with disabilities) and for homeless people. While the influx of Games visitors may negatively affect the availability of affordable housing, the Games (with the construction of the Olympic Villages) are also an opportunity to provide additional housing for low income families, singles, seniors, and people with disabilities.

The required data for the country, city and region are the number of low-income families in the city (broken down by families, singles, seniors, and people with disabilities), number and percentage of affordable housing and social housing units in the city, number of new affordable housing and social housing units built each year, number of affordable housing units built for the Olympic and Paralympic Games (Olympic Villages, hotel rooms converted to apartments for sale post-Games), number of households on waiting list for social housing (if such a list exists) and percentage of these households that include a person with a disability, number of homeless people in the city (including percentage of people with disabilities among them, if known), and number of places in homeless shelters. Due to a lack of international standard for defining low-income families, affordable housing and social housing, host cities should provide their own definitions.

No updated data are available since the OGI Pre-Games Report.

### **b) Data**

See attachments (due to lack of updated data, these tables were taken from the Pre-Games Report).

### **c) Commentary**

In Canada, the general definition of affordable housing is housing that does not cost more than 30 percent of a household's gross income regardless of whether they are living in market or nonmarket housing. The term social housing refers to housing where rent subsidy or assistance is provided. For our purposes, both affordable housing and social housing are included. In Vancouver, someone is considered homeless when they lack money for a permanent residence. This definition includes people who have no shelter or are temporarily sheltered.

The following analysis is taken from the OGI Pre-Games Report.

Between 2001 and 2006, the percentage of singles below the low-income cut-off (LICO) threshold increased in Vancouver, Metro Vancouver, and Canada. Although a larger increase was observed for Canada, the rates for Vancouver and Metro Vancouver were significantly higher than the rate for Canada.

Between 2001 and 2006, the percentage of seniors below the LICO line decreased in Vancouver and Metro Vancouver, but increased in Canada.

Between 2001 and 2006, the absolute number of affordable housing and social housing units increased in both Vancouver and Metro Vancouver. However, further analyses showed that the increase was only in Vancouver (excluding Vancouver from Metro Vancouver showed a loss of units in the rest of the region), and that there has been a loss of units relative to the population at

the Metro Vancouver level.

In Vancouver during the period 2005-2008, fewer newly constructed affordable housing and social housing units were built (357 units) than during the preceding period 2001-2004 (593 units). Newly constructed means that these units were not converted from previously existing regular housing units.

Between 2002 and 2008 in both Vancouver and Metro Vancouver, the absolute homeless count and the number of homeless persons relative to the population increased. Analyses with comparison locations (Capital Regional District and Toronto) suggest that homelessness is more prevalent in B.C. than anywhere else in Canada.

Between 2002 and February 2009 in both Vancouver and Metro Vancouver, the absolute number of places in shelters and the number of homeless per place in shelter increased. This suggests that the supply (shelters) was not met by the need (homeless individuals) (although there were more places in shelters available in Vancouver than in Metro Vancouver).

Between 2002 and 2008, the prevalence of people with physical disabilities among the homeless in Metro Vancouver more than doubled (from 15 to 31 percent).

None of the above findings can be linked to the 2010 Winter Games with certainty.

Below is a discussion of actions taken by non-governmental organizations and the homeless population of Vancouver during the 2010 Winter Games. Their actions leveraged media attention and shed light on the situation in Vancouver's Downtown East Side, which in turn, may have had an impact on Bill C-304, a housing bill which would create a federal housing strategy to address homeless issues across the country.

*Olympic Tent City.* In February 2010, activists and members of the homeless and disadvantaged population created a tent city in an empty lot at 58 East Hastings Street in the heart of Vancouver's Downtown East Side. The lot was owned by Concord Pacific, a development corporation who leased the land to VANOC during the Games for use as a parking lot. Prior to the Games, the Pivot Legal Society distributed red tents with statements about housing on them in order to raise awareness about housing issues in Canada. Many of these tents were used in the Tent City, which was organized by the Downtown Eastside Power of Women Group with assistance from Streams of Justice (both are volunteer organizations in the Downtown Eastside). While there are no reliable data that states how many people took shelter in the Tent City during its existence, by February 28th a report issued by the Olympics Resistance Network (an activist collective in Vancouver which coordinated anti-Olympic protests) states that 41 homeless who took shelter in the Tent City had found places in government housing ("From Protest to Resistance: A Report on the Campaign Against the 2010 Winter Olympics." 2010: 1-38). According to the same report, the Tent City was dismantled in mid March by Concord Pacific.

*Social Housing in British Columbia.* According to a recent report issued by the Canadian Centre for Policy Alternatives, the number of households assisted by provincial housing programs increased by approximately 11,530 over the last five years (Klein and Copas. "Unpacking the Housing Numbers: How Much New Social Housing is BC Building?" Canadian Centre for Policy Alternatives. Sep. 2010: 1-12). Seven thousand, seven hundred, twenty households and 1,010 individuals received some form of rental assistance while there was an increase in 1,420 shelter beds and 1,550 SROs (single room occupancy). However, this



increase has been offset by a loss of 2,820 social housing units. The overall net increase, then, of social housing units over the past five years is 280 while in 2008 a reported 13,400 applicants were on the waiting list for social housing in British Columbia.

As a part of the Olympic Village contract in South East Fast Creek, the original promise of 252 units of legacy social housing has been approximately halved (April 2010) due to cost overruns associated with construction and poor sales of high-end units. Some units of co-operative housing (run by the Co-operative Housing Federation of British Columbia) are already available and other units will be available in 2011.

*Federal Policy- Bill C-304 December 2010 Update.* In December 2009, Bill C-304 was introduced in the Federal House of Commons by Libby Davies, who represents the Vancouver East riding. Bill C-304, also known as The Secure, Adequate, Accessible and Affordable Housing Act, calls for a federal housing strategy. Canada is the only G-8 nation who addresses housing at the provincial level (vs. the national level) and many MPs think that a federal housing strategy would help solve housing and homelessness issues in the Downtown East Side in Vancouver. As of December 2010, Bill C-304 was still being debated in the House of Commons.

### So31: Low-Rent Market and Affordable Housing, Vancouver, Metro Vancouver and Canada, 2001-2006

	<u>Vancouver</u>		<u>Metro Vancouver</u>		<u>Canada</u>	
	2001	2006	2001	2006	2001	2006
Prevalence of low income, singles	43.1%	44.2%	39.8%	40.3%	30.8%	37.1%
Prevalence of low income, seniors	15.8%	8.9%	22.7%	14.5%	15.0%	35.0%
Number of affordable housing and social housing units	20, 133	23,623	47,220 <sup>1</sup>	47,857	-	-
Number of affordable housing and social housing units per 1,000 pop.	35.6	39.4	22.3 <sup>1</sup>	21.8		
Number of affordable housing and social housing units, build during the specified period	593 in 2001-04	357 in 2005-08	-	-	-	-

<sup>1</sup> 2002 number.

### So31: Homelessness, Vancouver, Metro Vancouver and Canada, 2002-2009

	<u>Vancouver</u>			<u>Metro Vancouver</u>		
	2002	2005	2008	2002	2005	2008
Number of homeless people	628	1,291	1,576	1,121	2,174	2,660
Number of homeless per 1,000 pop.	1.09	2.18	2.56	0.53	1.00	1.17
Percent of homeless with physical disabilities	-	-	-	15%	21% <sup>1</sup>	31%
	2002	2003	Feb. 2009	2002	2003	Feb. 2009
Number of places in homeless shelters	559	748	1,137	682	990	1,420
Number of homeless per place in shelter	1.12	-	1.39	1.64	-	1.87

<sup>1</sup> 2006 number.

So43: Host City's Media Image
a) Data Discussion
<p>The purpose of this indicator is to determine the pre-Olympic image of the city, region and country through a quantitative analysis of the media. This image may be connoted economically, environmentally, or socio-culturally. Monitoring this indicator throughout all phases of the Olympic and Paralympic event and until three years after the Games will reveal the influence of the Games on this image. This indicator overlaps with all the systems in the socio-cultural sphere.</p> <p>The required data are obtained through a representative panel of the world's media (with all continents represented) based on circulation or audience figures (in terms of importance) and with the criterion that they publish information on a website (so that language statistics software can search for key words such as the names of the city, region and country and gather the subjects and qualifiers most often associated with these names). In addition, research should include the image of the host city in regards to people with disabilities in the host city, region and country, as perceived by international media.</p> <p>A list of articles was obtained from IOC Media Services, which compiled a representative panel of the world's media (60 articles) from February 9, 2010 to March 8, 2010 for the purpose of creating a press synthesis for the IOC Coordination Commission of the Olympic Games. The articles themselves were then retrieved by the OGI-UBC team and assigned one of the following ratings that represent their tone, use of themes, and framing of issues relevant to the host city, region, and country:</p> <ul style="list-style-type: none"> <li>1 = Exceedingly negative (e.g., "worst Games ever")</li> <li>2 = Negative (e.g., "increasing criticism)</li> <li>3 = Neutral</li> <li>4 = Positive (e.g., "bringing the city to life")</li> <li>5 = Exceedingly positive (e.g., "greatest ambiance")</li> </ul> <p>The articles did not mention people with disabilities (note: the 2010 Paralympics Winter Games were from March 12 to March 21, 2010.</p>
b) Data
See attachment.
c) Commentary
<p>International news media coverage of the Olympic Games viewed the death of Georgian luger Nodar Kumaritashvili as a tragedy, with a few allusions to track safety (negative). Around the world, positive news articles brought attention to the unrivaled ambiance and enthusiasm of Canadians. The British press was highly critical of Vancouver's efforts, calling the 2010 Olympics the "worst ever," focusing heavily on weather conditions, a technical glitch in the opening ceremony, and issues of canceled tickets. Articles surrounding the conclusion of the Games were largely positive, drawing attention to Canada's Olympic successes and the unrivaled atmosphere in Vancouver. While early reports drew negative attention to Vancouver's organizational capabilities, the articles towards the end of the Olympic Games report the experience as a much more positive one.</p>

### So43 - Host City's Media Image

Source	Type	Country	Language	Circulation <sup>1</sup>	Number of Articles	Composite Rating
<i>North America</i>						
Associated Press	Wire Service	USA	English	DNAA	5	3.4
Boston Globe	Newspaper	USA	English	222,683 <sup>2</sup>	3	5.0
The Economist	Newspaper	USA	English	137,115 <sup>3</sup>	1	2.0
The Huffington Post	News website	USA	English	DNAA	1	3.0
Los Angeles Times	Newspaper	USA	English	600,449 <sup>2</sup>	2	3.5
The New York Times	Newspaper	USA	English	876,683 <sup>2</sup>	2	3.5
The Philadelphia Inquirer	Newspaper	USA	English	342,361 <sup>2</sup>	2	3.5
Reuters	Wire Service	USA	English	DNAA	9	3.7
Sports Illustrated	Magazine	USA	English	535,379 <sup>4</sup>	1	2.0
USA Today	Newspaper	USA	English	1,830,594 <sup>2</sup>	3	4.3
The Wall Street Journal	Newspaper	USA	English	2061,142 <sup>2</sup>	1	3.0
The Washington Post	Newspaper	USA	English	545,345 <sup>2</sup>	2	3.5
					<b>32</b>	<b>3.6</b>
<i>Europe</i>						
Agence France Presse	Wire Service	France	French	DNAA	7	3.1
BBC Sport	Broadcast	UK	English	DNAA	1	4.0
Daily Mail	Newspaper	UK	English	2,002,378 <sup>5</sup>	1	3.0
The Daily Telegraph	Newspaper	UK	English	658,172 <sup>5</sup>	3	2.7
Die Welt	Newspaper	Germany	German	254,785 <sup>6</sup>	1	4.0
Financial Times	Newspaper	UK	English	383,067 <sup>7</sup>	1	2.0
Frankfurter Rundschau	Newspaper	Germany	German	150,100 <sup>8</sup>	1	4.0
The Guardian	Newspaper	UK	English	273,384 <sup>5</sup>	3	2.3
Independent on Sunday	Newspaper	UK	English	100,901 <sup>5</sup>	1	2.0
L'Equipe	Newspaper	France	French	473,731 <sup>9</sup>	1	3.0
Le Temps	Newspaper	Switzerland	French	45,506 <sup>10</sup>	1	5.0
The Times	Newspaper	UK	English	479,626 <sup>5</sup>	3	2.0
					<b>24</b>	<b>2.9</b>
<i>Australia</i>						
The Age	Newspaper	Australia	English	190,100 <sup>11</sup>	2	3.0
The Australian	Newspaper	Australia	English	136,268 <sup>11</sup>	2	1.5
					<b>4</b>	<b>2.0</b>
<b>Total</b>					<b>60</b>	<b>3.3</b>

<sup>1</sup> All sources were accessed in January 2011.

<sup>2</sup> Audit Bureau of Circulations, March to September 2010: <http://abcas3.accessabc.com/ecirc/newstitlesearchus.asp>.

<sup>3</sup> Audit Bureau of Circulations for January to December 2010: [http://www.huffingtonpost.com/2010/08/12/the-biggest-news-magazine\\_n\\_680468.html#s126027&title=undefined](http://www.huffingtonpost.com/2010/08/12/the-biggest-news-magazine_n_680468.html#s126027&title=undefined).

<sup>4</sup> Audit Bureau of Circulations for January to December 2010: [http://www.huffingtonpost.com/2010/08/09/the-20-biggest-magazines\\_n\\_676017.html#s124664&title=13\\_Sports\\_Illustrated](http://www.huffingtonpost.com/2010/08/09/the-20-biggest-magazines_n_676017.html#s124664&title=13_Sports_Illustrated).

<sup>5</sup> Audit Bureau of Circulations, July to December 2010: [http://www.telegraph.co.uk/multimedia/archive/01809/ABC-DEC-2010\\_1809909a.pdf](http://www.telegraph.co.uk/multimedia/archive/01809/ABC-DEC-2010_1809909a.pdf).

<sup>6</sup> MA Pressemedien for 2010: <http://www.publicitas.com/de/austria/media-news/news-detail/?PARAM1=43873>.

<sup>7</sup> Audit Bureau of Circulations, January AVG 2011: <http://www.pressgazette.co.uk/story.asp?sectioncode=1&storycode=46681&c=1>.

<sup>8</sup> PressEurop for 2009: <http://www.presseurop.eu/en/content/source-information/556-frankfurter-rundschau>.

<sup>9</sup> Association Pour La Controle de la Diffusion des Medias for 2010: <http://www.oid.com>.

<sup>10</sup> REMP for 2009: [http://www.eidosmedia.com/EN/Page/Uuid/779809e4-002b-11df-8263-73ec7e0d6bd2/01\\_LeTemps\\_mobile.xml](http://www.eidosmedia.com/EN/Page/Uuid/779809e4-002b-11df-8263-73ec7e0d6bd2/01_LeTemps_mobile.xml).

<sup>11</sup> Audit Bureau of Circulations, July to September 2010: <http://media.crikey.com.au/wp-content/uploads/2010/11/circulation.pdf>.

### **3.3. Summary of Social Indicators**

#### **Awareness of and Support for the Games**

##### *Government*

The governments for Vancouver, for British Columbia, and for Canada all showed support for the 2010 Winter Games through their votes and policies and programs. Although political involvement as members of VANOC was prohibited, over one half of the VANOC members were appointed by government (So25). Not only did governments vote in favour of Games-related bills/by-laws (So27), they did not defer or abandon any public policies in favour of the Games but rather created new policies and projects to leverage the Games (So26), including a program for excellence in sport that most likely increased the number of medals won by Canadian athletes (So37). Finally, governments supported the Games by funding services that support the Games, such as security, etc. (So42).

##### *Public*

Public support for and opposition to the Games occurred during the bid and included the Games time-period. During the bid, a Vancouver plebiscite showed that 64% of those who voted were in favour of the Games, which means that a not-so-insignificant proportion (36%) opposed the Games (So27). Public opposition was also evidenced by the existence of several pressure groups in the lead up to the Games (So3). Although opinion polls showed a generally positive perception of the Games in Canada, some dissatisfaction was also reported (So29). Continued support was evidenced during the Games by the number of people who volunteered for the Games (So38), by the large number of spectators at Games events and ceremonies (So39), and by the large proportion of Net Sellable tickets for Olympic Games events that were sold to the general public (So40). The public was generally more familiar with the logo and mascots for the Olympic Games than the logo and mascots for the Paralympic Games (So35).

##### *Media*

The host was generally portrayed positively in the international media, especially towards the end of the Games (So43).

#### **Inclusion**

##### *Minorities and Indigenous Groups*

VANOC attempted to include minorities and indigenous groups during the bidding, planning and staging of the Games. For example, VANOC consulted with a variety of groups (So28), hired minorities as part of its workforce (So30), implemented educational activities that included the Paralympics (So32), provided for accessibility in the venues (So47), made available some tickets that were more 'affordable' (So40), and implemented programs to increase awareness about and promote these groups (So41). Data from the opinion polls suggest that public awareness of people with disabilities increased shortly after the Games (So29).

Although there was no new data related to homelessness and affordable housing since the Pre-Games Report, it is possible that media attention and local advocacy efforts have catalyzed government efforts to address the issues of homelessness and affordable housing (So31).

During the Games, there were minimal incidents related to racism, discrimination or violence in sport (So36).

### *Arts and Culture*

Arts and culture appeared to be a significant aspect of the hosting of the 2010 Games, based on the number of art designers and participants (So33) and the increase in budget and visitors in each consecutive year of the official cultural program (So34).

## 4. Economic Indicators

The economic impact sphere includes 16 event indicators and 4 context/event indicators.

### 4.1. Event Economic Indicators

Ec28: Composition of Committees by Sector
<b>a) Data Discussion</b>
<p>The purpose of this indicator is to illustrate the number and importance of changes in the organizational structure of the candidacy and organizing committees.</p> <p>The required data are the composition of the members of the committees according to the economic sector (public or private) in which the members were active prior to, concurrently with, and subsequent to their membership on the committees (the “springboard” effect of these committees in their members’ careers).</p> <p>Data were available for members of the organizing committee from 2003 to 2010. Data on the activities of the 96 members of the Vancouver 2010 Bid Corporation (i.e., candidacy committee) were largely not available from a single, centralized source.</p>
<b>b) Data</b>
See attachment.
<b>c) Commentary</b>
<p>After the selection of Vancouver as the 2010 Olympic Winter Games Host City in 2003, 20 members were appointed to VANOC (one member is nominated by the other 19 members). Of the 20 members of VANOC in 2003, most of them (14 out of 20, or 60 percent) had also been members of the Board of Directors for the Vancouver 2010 Bid Corporation.</p> <p>In 2006, 14 of the original VANOC members (including the Chair) were confirmed, while 6 new members were appointed (yet another member was replaced in 2009).</p> <p>Of the 20 members of VANOC in 2010, 60 percent (14 members) had been working in the public sector before the Games. While in VANOC, the first Chair of the Board became a public official coming from the private sector, and two other members switched from the public sector to being involved in both the public and the private sectors simultaneously, thus bringing the purely public sector involvement of VANOC down to 50%, with public/private involvement at 10%.</p> <p>Regarding the subsequent activities of members of VANOC’s Board, 35 percent of the members went to the public sector, 25 percent to the private sector, and 20 percent were involved with both the public and the private sectors. Three members could not be tracked (15 percent) and one (the first Chair, Jack Poole) passed away in October 2009, four months before the Games took place.</p> <p>Of the 7 initial Board members of VANOC who were replaced before 2010 (6 of them in 2006 and 1 in 2009), 5 were in the public sector before the Games, 1 was in the private sector and there was no information about the other member. During the Games, 3 of these 7 initial members were in the public sector, 1 in the private sector, and the activities of 3 were unknown. After the Games, 3 of these initial 7 members were in the public sector, 2 in the private sector,</p>



and no information was available about the other member.

In summary, the membership on the organizing committee was fairly consistent, with over one half (12) of the Board members of VANOC in 2010 having been initial members of VANOC's Board in 2003. Regarding composition by economic sector for VANOC Board members before, during, and after the Games, there appears to have been a shift in composition that reflected a slight increase in mixed public and private sector involvement, and a concomitant decrease in involvement in the public sector and in the private sector.

#### Ec28: Composition of VANOC by Sector Activities

	Previous Activities	Concurrent Activities	Subsequent Activities
<b>Private or Public</b>			
Public	60%	50%	35%
Private	40%	35%	25%
Public/private	-	10%	20%
DNAA <sup>1</sup>	-	5%	15%
Passed away	-	-	5%
<i>Total (20 members)</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>
<b>Sector Type</b>			
Economic	20%	20%	10%
Sport	10%	5%	25%
Government	15%	10%	20%
Tourism	5%	5%	5%
Energy	10%	5%	5%
Food	5%	5%	5%
Healthcare	5%	-	-
Education/Communications	5%	5%	5%
Olympic Committee	25%	40%	5%
DNAA <sup>1</sup>	-	5%	15%
Passed away	-	-	5%
<i>Total (20 members)</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>

<sup>1</sup> Data not available or accessible.

## Ec29: New Olympic/Paralympic-related Businesses

### a) Data Discussion

The purpose of this indicator is to monitor the opportunities that the Olympic and Paralympic Games provide for new small- and medium-size businesses to develop and find new markets in sports technology, marketing, consulting, etc.

The required data are the annual number of new businesses related to Olympic and Paralympic Games (or new divisions in existing companies) and the number of full-time jobs. During the time-frame of the preparation of the Games, the OCOG can monitor the situation as it is the main contractor for these new businesses.

As VANOC did not follow the economic sectors for business or job creation either directly or indirectly, we quote the PriceWaterhouseCoopers model estimates for 2003-2008 from their Report on the Impact of the 2010 Olympic and Paralympic Games on British Columbia and Canada (2009). Note that the newly-created businesses and jobs are not necessarily directly related to the Games; rather it is hypothesized that the Games had affected the businesses and jobs creation in general.

### b) Commentary

“Since the model residuals are higher during the Games preparation period, particularly from 2005 to 2007, it is tempting to attribute the higher than expected business formation to the impact of the 2010 Winter Games. This rationale seems plausible as the Games have provided immediate stimulus to economic growth and encouraged entrepreneurs to take advantage of opportunities afforded by the Games. At the extreme, if we attributed all new formations unexplained by our simple model to the Games, we would estimate that approximately 3,400 new business formations were induced by hosting the Games from 2003 to 2008 [in B.C.]. However, the model fails to fully capture the downturn in formations that resulted from a sharp slowing of the economy in 2008. If we limit the impact of the 2010 Winter Games on business creation to the impact on real GDP, then we would estimate that close to 800 new businesses were created as a result of incremental economic growth stimulated by the Games.” (PWC Report, 2009)

“The 2010 Commerce Centre database also shows 35 businesses registered in Alberta, 9 in Manitoba, five in Saskatchewan, 74 in Ontario and 14 in Quebec.” (PWC Report, 2009)

“The 2010 Winter Games are estimated to have produced up to 20,780 jobs in BC, approximately 10,000 (direct and indirect) of which were generated as a result of venue construction activity. A further 1,750 jobs were created across Canada through inter-provincial trade.” (PWC Report, 2009)

In summary, PriceWaterhouseCoopers suggested that the Games stimulated the formation of new businesses and jobs (which are not necessarily related to the Games) prior to 2010.

### Ec30: Size and Quality Management of Contracted Companies

#### a) Data Discussion

The purpose of this indicator is to reveal the extent to which the organizing committee and related organizations (mainly government bodies) can favour the choice of contracted companies who adhere to the principles of quality management, through the main dimensions of environmental management, quality management, and social accountability.

The required data are the size, number, and proportion of companies (broken down by size) contracted for Olympic and Paralympic activities that comply with the principal international standards on environmental (ISO 14000), social (SA 8000), and commercial quality (ISO 9000) management.

The required data were not available. Instead, data from the 2010 Commerce Centre lists businesses affiliated with the Centre which were contracted (not necessarily by VANOC) during the 2010 Olympic and Paralympic Winter Games. The 2010 Commerce Centre is an initiative led by the provincial government to provide a central repository and bid management service for connecting businesses to Games-related opportunities provided by VANOC and its government and corporate partners. Data quality management standards for the businesses affiliated with the 2010 Commerce Centre were not available; therefore, the data presented are the proportion of contracted companies that reported some sort of sustainability practice, such as decreasing greenhouse gas emissions, various social programs for hiring traditionally underemployed groups (e.g., women, First Nations people), etc. All businesses that register to be part of the 2010 Business Network are asked to provide information on its sustainability programs.

#### b) Data

#### Ec 30: Size of Contracted Companies

Size of Enterprise (by number of employees)	<u>Vancouver</u>		<u>Metro Vancouver</u>		<u>Canada</u>	
	Number of enterprises	Carrying out "sustainability practises"	Number of enterprises	Carrying out "sustainability practises"	Number of enterprises	Carrying out "sustainability practises"
Micro (<10)	817	76.7%	1799	75.5%	2818	75.4%
Small (10-50)	387	78.0%	852	79.2%	1269	79.6%
Medium (50-100)	89	77.5%	218	73.9%	308	76.9%
Large (100+)	133	78.9%	284	79.6%	396	80.1%
<i>Total</i>	<i>1426</i>	<i>77.3%</i>	<i>3153</i>	<i>76.8%</i>	<i>4791</i>	<i>77.0%</i>

Source: <http://www.2010commercecentre.gov.bc.ca>

#### c) Commentary

The data for Vancouver, Metro Vancouver and Canada show that regardless of size, the majority (about three quarters) of contracted companies were carrying out some "sustainability practices." There does not appear to be any pronounced difference in carrying out sustainability practices between companies from Vancouver, Metro Vancouver, and Canada at any company size level.

Although data on compliance with international standards of quality management were not available, the data on enterprises that were contracted (not necessarily by VANOC) suggest that the majority of these enterprises, regardless of size or origin, were carrying out “sustainability practices.” Being in the majority suggests that these contracted enterprises may have been favoured for their sustainability practices; however, given the lack of comparative data on the sustainability practices of enterprises *in general*, this finding can not be considered conclusive.

Ec31: Olympic Family Vehicles
a) Data Discussion
<p>The purpose of this indicator is to show the roles accorded to private and public transport for carrying officially accredited persons.</p> <p>The required data are the number of accreditations with entitlement to the various modes of transport, the number and type Olympic/Paralympic family vehicles with atmospheric pollutant categories, number and type of accessible vehicles, and use of these vehicles (number of drivers, total vehicle-kilometres, passenger-kilometres).</p> <p>None of the required data were available, except for the size of fleets. Data on fuel usage by year by type (gasoline, diesel) were used as alternative data to reflect fleet usage.</p>
b) Data
See attachments.
c) Commentary
<p>Note: Although the indicator is Olympic <i>Family</i> Vehicles, the data are for <i>all</i> Olympic vehicles (not just the ones used to transport Olympic Family).</p> <p>With every reporting period of the VANOC Sustainability Reports, fleet size increased and was the highest during the Games (2009-2010 reporting period) with a vehicle fleet of 4,667 vehicles and a motor coach fleet of over 1,000 vehicles. Exact numbers related to the transportation of accredited persons are not available, but both the vehicle fleet and motor coaches would have been used to transport accredited persons.</p> <p>Although the total kilometers travelled by either the vehicle fleet or the motor coach fleet during the Games was not available, an article on November 9, 2010 in 24 Hours reported that the motor coach fleet was driven a combined 5.1 million kilometres to and from Vancouver from other parts of North America. Data on how far the motor coach fleet went while in Vancouver were not available.</p> <p>As an alternative to total vehicle-kilometres (which were not available), data were obtained from VANOC on fuel usage for Olympic Family Vehicles (both the vehicle fleet and the motor coach fleet). The total fuel used from 2005 until March 31, 2010 was 9,012,177 litres, of which 38.5 percent was gasoline and 61.5 percent diesel fuel. Although the pre-Games time period (2005-2009) was much longer than the Games-time period (Jan 1 – Mar 31, 2010), the majority of the fuel used was during Games-time. Approximately 55.5 percent, or just over 5 million litres of fuel, was used during the Games-time period, contrasted to 44.5 percent for the pre-Games period. A total of 23,000 metric tonnes of CO<sub>2</sub>e was produced from Olympic Family Vehicles.</p> <p>In VANOC's last financial statement (December 17, 2010) for the period September 20, 2003 to July 31, 2010, it was reported that operation of the motor coach fleet cost \$92.6 million CAD, while operation of the vehicle fleet cost \$43 million CAD.</p> <p>In summary, data on the transport of accredited persons were not available although both the vehicle fleet and motor coach fleet were used for this type of transport. Although the motor coach fleet was less than a quarter of the size of the vehicle fleet during the Games, it cost more than twice as much to operate the motor coach fleet than it did to operate the vehicle fleet. Although the distances traveled per fleet during the Games were not available, the motor fleet</p>

traveled a combined total of over 5 million total-kilometres to and from the host city. The total fuel used by both fleets during Games-time was over 5 million litres.

### Ec31 - Olympic Family Vehicles (Fleet Size)

Reporting Period	Vehicle Fleet <sup>1</sup>	Motor Coach Fleet <sup>2</sup>
2005-2006	87	n/a
2006-2007	96	n/a
2007-2008	127	n/a
2008-2009	237	n/a
2009-2010	4,667	>1,000

<sup>1</sup> VANOC Sustainability Reports from 2005 to 2010.

<sup>2</sup> "Not So Much Green Games" by Bob Mackin in 24 Hours, November 9, 2010.

### Ec 31: Olympic Family Vehicles (Olympic Family Vehicles Fuel Usage) <sup>1</sup>

Fuel (in litres)	Pre-Games					Games Time		Total	% Fuel
	2005	2006	2007	2008	2009	2005-2009 Total	Jan. 1 to Mar. 31, 2010		
Gasoline	7,767	271,513	273,013	351,782	936,783	1,840,858	1,625,437	3,466,295	38.5%
Diesel	0	1,718,025	194,901	28,439	225,002	2,166,367	3,379,515	5,545,882	61.5%
Total	7,767	1,989,538	467,914	380,221	1,161,785	4,007,225	5,004,952	9,012,177	100.0%
						44.5%	55.5%	100.0%	

<sup>1</sup> Lessons Learned - The Official Transfer of Knowledge Report from the Engineering & Geomatics Group, VANOC Transportation Department, April 15, 2010.

## Ec32: Breakdown of Visitor Spending

### a) Data Discussion

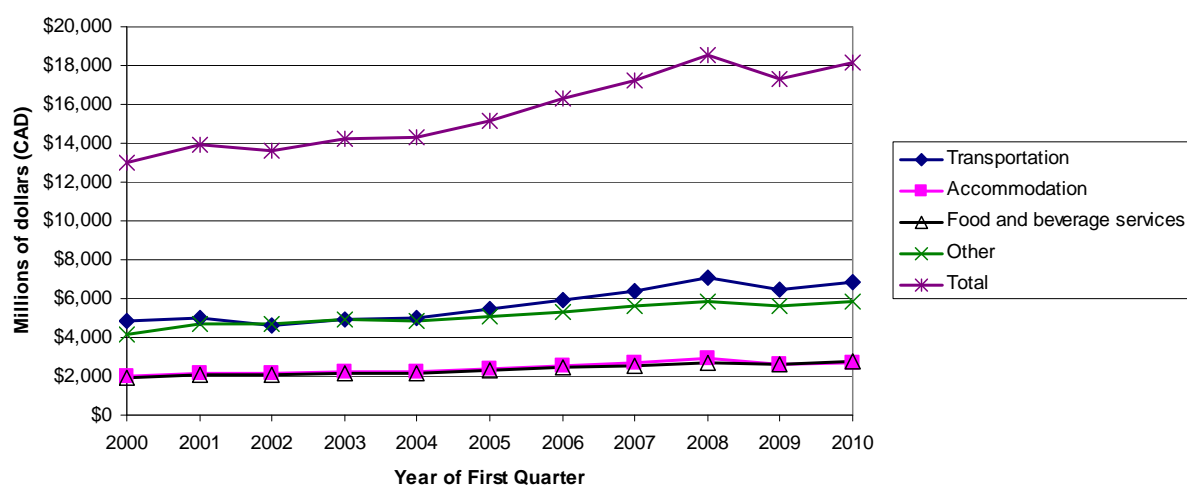
The purpose of this indicator is to estimate the spending of tourists who come specifically for the Games, and what they spent their money on. Through comparisons of this information with data for other years (and taking many other factors into account), the amount of extra money injected into the local economy by visitors to the Games can be estimated.

The required data are visitor spending, broken down by the main type of expense – accommodation, food and drink, purchases, other (transport, museums, leisure, etc.) – and the geographical area of spending. Baseline information may be obtained from the national and regional tourist offices. During the staging of the Games, a detailed survey of visitors may be made.

Data were available from Statistics Canada reports on National Tourism Indicators (quarterly estimates) for the years 2000 to 2010; the data are national-level and are the sums of spending by Canadian visitors (domestic travel) and non-resident visitors.

### b) Data

**Ec32: Visitor Spending in Canada - Total and by Type of Expense - for First Quarter (January to March), Seasonally Adjusted (2000 to 2010)**



### c) Commentary

Between 2000 and 2010, the overall trend appears to be an increase in visitor spending during the first quarter, except for a dip in 2002 and in 2009 (probably due to the economic crisis). Although total visitor spending (Canadian and international visitors) in the first quarter of 2010 (\$18.1 billion CAD) was lower than the peak in 2008 (\$18.5 billion CAD), Statistics Canada reports in *The Daily* (June 30, 2010) that the increase in spending by international visitors in the first quarter of 2010 was the largest quarterly increase (5.9 percent in real terms) since the fourth quarter of 2003, and suggest that the 2010 Winter Games contributed to this increase (the increase in spending by Canadian tourists during the same period was smaller at 0.3 percent).



Provincial-level data were available for the first quarter of 2010 in a report titled *Travel Characteristics Q1 2010* by the Canada Tourism Commission. Out of all the provinces and territories in Canada, the highest total visitor spending was reported in British Columbia, for both overseas visitors (\$396.3 million CAD, or an 11 percent increase over the first quarter of the previous year) and US visitors (\$269.8 million CAD, or a 19.3 percent increase over the first quarter of the previous year).

Transportation and Other (recreation and entertainment, travel services, etc.) types of expenses were the largest share of visitor spending during the first quarter between 2000 and 2010. For all types of expenses, their share of total visitor spending remained relatively stable between 2000 and 2010 (i.e., the trend for each type of expense is generally similar to the trend for total visitor spending).

The data suggest a general trend of increasing visitor spending during the first quarter of the past ten years, although a notable increase was observed for the first quarter of 2010. The provincial-level data showed that the highest total visitor spending in the first quarter of 2010 (during the 2010 Winter Games) was in British Columbia (location of the Games). It is likely that the hosting of the 2010 Winter Games increased visitor spending in Canada, and in British Columbia in particular. The hosting of the Games may have modified the trend during the economic crisis, i.e., without the Games, there could have been less of an increase in visitor spending, no increase (stable), or a decrease.

### Ec33: Structure of OCOG's Revenues

#### a) Data Discussion

The purpose of this indicator is to show the principal financial sources for the Games. A comparison between the forward and actual budgets reveals how accurate the project was.

The required data are total OCOG revenue for the Olympic Games and for the Paralympic Games broken down by source and geographical origin (according to the forward and actual budgets). The source headings are IOC contribution, TOP (The Olympic Partners) sponsorship, local (national) sponsorship, official suppliers, ticket sales, licensing (licensing merchandise, coin programme, philately), lotteries, donations, disposal of assets, subsidies (national, regional, and local government), other revenues, and shortfall.

Combined data on the Olympic Games and the Paralympic Games were available from VANOC.

#### b) Data

Ec33 Structure of VANOC Revenue: Forward Budget for the Olympic Games and Actual Budget for the Olympic Period (thousands of CAD)

	Forward budget		Olympic period budget	
	Amounts	%	Amounts	%
IOC contribution	447,010	25.5%	479,742	25.5%
The Olympic Partners sponsorship	196,356	11.2%	173,558	9.2%
Local/national sponsorship	628,348	35.8%	612,126	32.5%
Official suppliers	116,668	6.6%	118,031	6.3%
Ticket sales	260,450	14.8%	269,459	14.3%
Licensing	53,819	3.1%	54,618	2.9%
Lotteries	0	0.0%	0	0.0%
Donations	650	0.0%	1,398	0.1%
Disposal of assets	10,990	0.6%	15,248	0.8%
Subsidies (national, regional and local government)	126,791	7.2%	187,796	10.0%
Other Income	112,115	6.4%	158,912	8.4%
Less: Marketing Royalties	-197,346	-11.2%	-186,759	-9.9%
<b>Total</b>	<b>1,755,850</b>	<b>100.0%</b>	<b>1,884,129</b>	<b>100.0%</b>

Source: VANOC Audited Financial Statements and Internal Management Reports.

#### c) Commentary

The total actual Olympic Games revenue was 1,884,129,000 CAD, or 7.3 percent more than given in the forward budget. While some sources produced less revenue than expected in the forward budget – specifically The Olympic Partners (TOP) sponsorship (less by 11.6 percent), and local/national sponsorship (less by 2.6 percent) – all other sources produced more revenue than projected in the forward budget. The major sources of revenue that registered an increase were government subsidies (almost 50 percent more), disposal of assets and other income (both about 40 percent more), as well as donations (more than twice the expected, albeit a minor source in and of itself). IOC contributions (7.3 percent more), revenue from official suppliers

(1.2 percent more), tickets sales (3.5 percent more) and licensing (1.5 percent more) also contributed more revenue than anticipated in the forward budget. As part of the Host City Contract and Marketing Plan Agreement, VANOC was required to pay a portion of its marketing revenues to the IOC and to the Canadian Olympic Committee. Marketing royalties in the actual Olympic period budget were 5.4 percent less than projected in the forward budget, which also contributed to the higher net revenue registered in the actual Olympic period budget than the forward budget.

In terms of the size of the revenue sources as a proportion of the total revenue, local/national sponsorship is on top with about a third of revenues. IOC contributions are second and supply about a quarter of the total revenue. Ticket sales are third and supply less than 15 percent of total revenue. TOP sponsorship and government subsidies share fourth place and each provides about 10 percent of the total revenue. All other sources supply less than 10 percent each, along with the shortfall which was also around 10 percent of the total.

There was little change in the proportions of the total between the forward and actual budgets, with most sources remaining the same in size. The proportions of government subsidies and other income increased slightly (by 2.7 and 2 percentage points each), while TOP sponsorship and local/national sponsorship somewhat decreased in their proportions (2 and 3.3 percentage points each).

In summary, slight variations in the size of the revenue sources as a proportion of total revenue amounted to a slight difference of 7.3 percent between the forward budget and actual budget for the 2010 Olympic and Paralympic Winter Games (budget data are not individualized for the Olympic Games or the Paralympic Games). This suggests that the actual budget did not differ drastically from the forward budget for the 2010 Winter Games. The two main sources of revenue for the 2010 Winter Games were local/national sponsorship and IOC contribution, which together contributed approximately 60 percent of total revenue.

## Ec34: Structure of OCOG Expenditures

### a) Data Discussion

The purpose of this indicator is to show the principal financial expenditures of the Games. A comparison of the forward and actual budgets reveals how accurate the projection was.

The required data are total OCOG expenditure for the Olympic Games and for the Paralympic Games broken down by programme (capital investments, operations).

Combined data on the Olympic Games and the Paralympic Games were available from VANOC.

### b) Data

See attachment.

### c) Commentary

The total operations expenditure of VANOC was 1,884,129,000 CAD, 7.3 percent more than what was projected in the forward budget.

The programmes that had more expenditures than expected were the following: Ceremonies & Culture and Olympic Villages (each about 36 percent more); Sports Venues and Other Expenditures (each about 25 percent more); Telecommunications and other technologies (11.2 percent more); Informations systems and Pre-Olympic events and coordination (each about 9 percent more); Transport (7 percent more); and MPC (just above 1 percent more).

All other programmes incurred less expenditures than expected, specifically: Administration (35 percent less); Catering (19 percent less); Workforce and Paralympic Games (each about 11 percent less); Security (9 percent less); Medical Services (7.5 percent less); Internet (6 percent less); and Advertising and Promotion (4 percent less).

In terms of proportion of the total expenditures, there was little change between the forward budget and the actual budget, with the majority of programmes staying similar to their projected size relative to the total. The most sizable difference was in Sports Venues, which increased 3.5 percentage points in its proportion of the total actual budget, while Administration reduced its proportion of the total by 3.9 percentage points.

In addition to the Operations expenditures, capital expenditures were \$603,271,000 CAD (see Ec36 for a breakdown, page 94). The capital investments were mainly funded 50/50 by the BC and Canadian governments as planned during the bid phase (combined contribution of \$580 million CAD), with the remaining amount of capital investments generated through sponsorship and other means.

In summary, slight variations in the size of the expenditures as a proportion of total expenditure amounted to a slight difference of 7.3 percent between the forward budget and actual budget for the 2010 Olympic and Paralympic Winter Games. This suggests that the actual budget did not differ drastically from the forward budget for the 2010 Winter Games. The two main expenditures for the 2010 Winter Games were operations for sports venues and informations systems, which together contributed almost 40 percent of total expenditure. The only separate budget item for the 2010 Paralympic Games was that just over \$2 million CAD was both projected and actually spent on operations for the 2010 Paralympic Games.

Ec34 Structure of VANOC Expenditures: Forward Budget for the Olympic Games and Actual Budget for the Olympic Period (CAD)

	<u>Forward budget</u>		<u>Olympic Period budget</u>	
	Amounts	%	Amounts	%
<i>Capital investments</i>				
Sports facilities, olympic village and others villages, MPC & IBC, other (specify)			603,271,000	
<i>Operations</i>				
Sports venues	367,355,646	20.9%	460,019,491	24.4%
Olympic village & other villages	41,323,595	2.4%	56,057,060	3.0%
MPC	16,916,718	1.0%	17,115,604	0.9%
IBC	0	0.0%	0	0.0%
Workforce	114,443,633	6.5%	101,686,806	5.4%
Informations systems	257,176,110	14.6%	281,058,699	14.9%
Telecommunications & other technologies	71,896,000	4.1%	79,941,004	4.2%
Internet	12,453,089	0.7%	11,707,241	0.6%
Ceremonies & Culture	81,767,713	4.7%	111,340,956	5.9%
Medical Services	38,487,146	2.2%	35,607,979	1.9%
Catering	38,253,768	2.2%	31,078,102	1.6%
Transport	198,411,637	11.3%	212,119,461	11.3%
Security	14,325,023	0.8%	13,002,631	0.7%
Paralympic Games	2,392,175	0.1%	2,111,198	0.1%
Advertising and Promotion	132,607,930	7.6%	127,408,738	6.8%
Administration	175,363,005	10.0%	114,067,574	6.1%
Pre-Olympic Events and Coordination	65,708,873	3.7%	71,870,345	3.8%
Other	126,967,672	7.2%	157,936,111	8.4%
Surplus	0	0.0%	0	0.0%
<b>Total</b>	<b>1,755,849,733</b>	<b>100.0%</b>	<b>1,884,129,000</b>	<b>100.0%</b>

Source: VANOC Audited Financial Statements and Internal Management Reports.

### Ec35: Total Operating Expenditure (Olympic Activities)

#### a) Data Discussion

The purpose of this indicator is to determine which regions benefit from the operating expenditure of Olympic activities.

The required data are total Olympic operating expenditure including OCOG operational expenditure, but without OCOG capital expenditure and non-OCOG operational expenditure (see Ec41 Public Share of Expenditure – Olympic Activities, page 102), broken down by the nature of the costs and the area where the money is spent.

Data were available from VANOC, but only for some types of costs (wages and social charges, goods and services) and not for others (taxes and duties). The heading General Expenses was not used due to lack of clarity between this heading and other headings such as Goods and Services.

#### b) Data

Ec35 Total Operating Expenditure (Olympic Activities), CAD

	<u>Region</u>		<u>Country</u>		<u>Abroad</u>		<u>Total</u>	
	Amount	%	Amount	%	Amount	%	Amount	%
Wages and social charges	309,065,353	100%	DNAA	DNAA	DNAA	DNAA	<b>309,065,353</b>	<b>16%</b>
Goods and services	1,104,031,397	70%	301,460,640	19%	169,571,610	11%	<b>1,575,063,647</b>	<b>84%</b>
Taxes and duties	DNAA	DNAA	DNAA	DNAA	DNAA	DNAA	DNAA	DNAA
General expenses	DNAA	DNAA	DNAA	DNAA	DNAA	DNAA	DNAA	DNAA
<i>Total</i>	<i>1,413,096,750</i>	<i>75%</i>	<i>301,460,640</i>	<i>16%</i>	<i>169,571,610</i>	<i>9%</i>	<b><i>1,884,129,000</i></b>	<b><i>100%</i></b>

#### c) Commentary

The total operating expenditures for Olympic activities was \$1,884,129,000 CAD. Overall, 16 percent of total expenditures was for wages and social charges (309,065,353 CAD), while the remaining 84 percent (1,575,063,647 CAD) was spent on goods and services.

Based on the available data, 75 percent of total Olympic operating expenditures was spent in the region, 16 percent in the rest of the country, and 9 percent abroad. All wages and social charges (309,065,353 CAD) were reported as being incurred in the region (no data related to wages paid in the rest of the country or abroad), while the expenditures on goods and services were 70 percent in the region, 19 percent in the rest of the country, and 11 percent abroad. The available data suggest that the Vancouver region benefited most, with three quarters of the total expenditures spent there.

### Ec36: Total Capital Expenditure (Olympic Activities)

#### a) Data Discussion

The purpose of this indicator is to determine which regions benefit from the capital expenditure on Olympic activities.

The required data are total capital expenditure of Olympic activities, broken down by the nature of the costs (including those planned specifically for the Games and those planned irrespective of the awarding of the Games) and the area where the money was spent.

Data were available from VANOC broken down only by venue (no detailed costs such as land acquisition or whether the expenditure was planned for the Games or not).

#### b) Data

##### Ec 36 Capital Expenditures (Olympic Activities), CAD

Venue	Cost
Cypress Mountain	17,597,000
Vancouver Olympic/Paralympic Centre	41,386,000
Pacific Coliseum	18,920,000
Richmond Olympic Oval	63,679,000
Training Venues	5,200,000
UBC Thunderbird Arena	38,216,000
Olympic and Paralympic Village Vancouver	30,000,000
Whistler Athletes' Centre	57,809,000
Whistler Media Centre	3,000,000
Whistler Creekside	31,312,000
Whistler Olympic/Paralympic Park	122,467,000
Olympic and Paralympic Village Whistler	37,500,000
The Whistler Sliding Centre	104,928,000
BC Place	12,094,000
General	15,654,000
<b>Total venue expenses</b>	<b>599,762,000</b>
Interest and carrying charges	3,509,000
<b>Total venue development expenses</b>	<b>603,271,000</b>

#### c) Commentary

The \$603,271,000 CAD total capital expenditure on Olympic activities consists of approximately \$600 million CAD in total venue expenses and \$3.5 million CAD in interest and carrying charges.

Capital expenditures were spent on: snowmaking, earthworks, etc. on Cypress Mountain and Whistler Creekside; building the new Vancouver Olympic/Paralympic Centre; major renovations of the Pacific Coliseum and renovations of BC Place; building the new Richmond Olympic Oval (constructed by the city of Richmond with additional spending); building the new UBC Thunderbird Arena (constructed by UBC with additional spending); a contribution to the



construction of the Olympic and Paralympic Village to the City of Vancouver; building the new Whistler Athletes' Centre, Whistler Olympic/Paralympic Park, Olympic and Paralympic Village, and Sliding Centre; and various overheads, management, etc included in the General expenditures.

About 60 percent of the total expenditure was incurred in Whistler (Athletes' Centre, Media Centre, Whistler Creekside, Olympic/Paralympic Park, the Olympic and Paralympic Village, and the Sliding Centre). The remaining 40 percent of capital expenditures was spent in Vancouver, Richmond and Cypress Mountain. Thus, the entire capital expenditure for Olympic activities benefits the Vancouver and Whistler regions.

## Ec37: Total Capital Expenditure (Context Activities)

### a) Data Discussion

The purpose of this indicator is to determine which regions benefit from capital expenditure on context activities.

The required data are total capital expenditure for context activities, broken down by the nature of the costs (wages and social charges, purchasing of goods and services, taxes and duties, and general expenses) and the area where the money is spent (city, regional, national, extra-national or abroad). A detailed list of Olympic-induced infrastructure projects (services networks and services centres), is given with their respective total investment costs, broken down in land acquisition costs and construction costs. Investments which are planned specifically for the Games and investments which are planned irrespective of the awarding of the Games are also indicated. The amounts are given in the currency of the country and in USD at constant prices, and in relative terms.

Data were available for three Olympic-induced infrastructure projects, which were all completed in 2009 – improvements to the Sea-to-Sky Highway that links Vancouver to Whistler, the construction of the new Canada Line (rapid transit), and expansion of the Vancouver Convention Centre.

### b) Data

#### Ec37 - Total Capital Expenditure (Context Activities) - 2009

Project	Area	Total Capital Expenditure	
		CAD	USD
Sea-to-Sky Highway upgrades	Regional	\$796 million	\$698 million <sup>2</sup>
Canada Line (new rapid transit)	Regional	\$2 billion	\$1.75 billion <sup>2</sup>
Vancouver Convention Centre expansion	City	\$883.2 million	\$774 million <sup>2</sup>
Land acquisition - Government of BC	-	\$31 million <sup>1</sup>	\$23.1 million <sup>2</sup>
Land acquisition - City of Vancouver	-	\$13.4 million <sup>1</sup>	\$10.0 million <sup>2</sup>

<sup>1</sup> Based on the Bank of Canada Inflation Calculator ([bankofcanada.ca/en/rates/inflation\\_calc.html](http://bankofcanada.ca/en/rates/inflation_calc.html)) for the year 2009 compared to the year 2003, which was when the land was acquired.

<sup>3</sup> Based on the Bank of Canada exchange rate of 1.1412 for the year 2009

### c) Commentary

While upgrades to the Sea-to-Sky Highway (between Vancouver and Whistler) and construction of the new Canada Line (between Vancouver and Richmond) benefited regional areas, the city of Vancouver also benefited from these two infrastructure projects, as well as benefiting from expansion of the Vancouver Convention Centre. The sum capital expenditure of all three projects was \$3.7 billion (Canadian dollars, 2009) or \$3.2 billion (US dollars, 2009). For the expansion of the Vancouver Convention Centre, land was acquired in 2003 by both the provincial and municipal governments at a total cost of \$39.7 (\$2003), which is equivalent to \$44.4 million in 2009.

Based on the available data, the city of Vancouver benefited from the three Olympic-induced infrastructure projects, while other parts of the province benefited from two of the projects (Sea-

to-Sky and Canada Line), at a total cost of over \$3 billion US dollars in 2009.

## Ec38: Total Wages Paid (Olympic Activities)

### a) Data Discussion

The purpose of this indicator is to determine the directly induced earnings by the expenditure associated with Olympic activities. These earnings are expected to have a multiplier effect in the host economy.

The required data are wages paid when Olympic activities are performed, broken down by activity sector and place of residence of the wage-earners (to show which economy benefits from the multiplier effect and the size of the outward flow from these economies). The relevant data are to be gathered from the public and private companies contracted at the time Olympic activities are performed (this indicator may pose problems of confidentiality with respect to employees' place of residence and the amounts paid in wages).

The required data and the breakdown of data by activity sector and by place of residence of wage-earners (as outlined in the OGI Technical Manual) were not available to VANOC. Alternative data from the final Consolidated Financial Statements of VANOC on staffing costs for six categories of operating expenses are presented instead.

### b) Data

#### Ec38 - Total Wages Paid (Olympic Activities)

VANOC Operating Expense	Staffing Costs (in millions)
<i>Revenue, marketing, and communications</i>	\$43.6
<i>Sport and games operations</i> (delivery of sporting competitions, venue management, medical and anti-doping services)	\$46.5
<i>Service and games operations</i> (overlay program, food and beverage services, Olympic and Paralympic Villages, accommodation services, transportation, logistics, snow removal, cleaning and waste services, ceremonies and the Cultural Olympiad, press and broadcast services, property rentals)	\$86.3
<i>Technology</i> (energy services, timing and scoring, Games management systems, internet services, broadcast integration services, telecommunications, ongoing network services)	\$31.0
<i>Workforce and sustainability</i>	\$51.4
<i>Finance</i> (administration, legal services, risk and assurance, financial services, dissolution of VANOC)	\$39.6
<b>Total</b>	<b>\$298.4</b>

Data source: Consolidated Financial Statements of the Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games For the cumulative period from September 30, 2003 (incorporation) to July 31, 2010

### c) Commentary

VANOC spent a total of \$298.4 million (Canadian dollars) on staffing costs from the time it was incorporated until a few months after the Games. The largest proportion of staffing costs (29 percent) was spent on Service and Games Operations (\$86.3 million). Due to the lack of data on the residence of wage-earners and where they spend their money, a multiplier effect can not be discerned with respect to which economy benefited (local, regional, national, foreign).

## Ec39: Catalyst Effects of the Games

### a) Data Discussion

The purpose of this indicator is to reveal the revitalizing effects that the organization and staging of the Games may have on the local economy. The indicator is represented by a ratio of total capital expenditure on context activities (Ec37, see page 96) to the total capital expenditure on Olympic activities (Ec36, see page 94). A higher ratio suggests a greater catalytic effect of the Games on the local economy.

The required data for Ec39 are the same data as for Ec37 and for Ec36 (no new data are required). The catalyst effect of the Games can only be measured after the Games, although ratios may be calculated on an annual basis.

### b) Data

Ec39 - Catalyst Effects of the Games

	Context Activities <sup>1</sup>	Olympic Activities <sup>2</sup>	Ratio of the capital expenditure <sup>3</sup>
City (Vancouver)	\$2,883,200,000	\$242,746,000	11.9:1
Region (Whistler and rest of BC)	\$796,000,000	\$357,016,000	2.2:1

<sup>1</sup> Data from Ec37 Total Capital Expenditure (Context Activities). The Canada Line, although listed as regional in Ec37, is mostly within the boundaries of the city of Vancouver.

<sup>2</sup> Data from Ec36 Total Capital Expenditure (Olympic Activities).

<sup>3</sup> Ratio of Ec37/Ec36

### c) Commentary

The ratio of capital expenditure on context activities (e.g., expansion of convention centre, etc.) to capital expenditure on Olympic activities (venues) was 11.9:1 for the city of Vancouver and 2.2:1 for the rest of BC. All capital investments were for projects located in BC (none in the rest of Canada). While the ratios suggest some catalytic effects of the 2010 Winter Games on the BC economy outside of the city of Vancouver, the catalytic effect was more than five times greater in the city of Vancouver.

## Ec40: Ratios specific to Olympic Activities

### a) Data Discussion

The purpose of this indicator (which is represented by several ratios) is to show the essential aspects of Olympic activities, particularly regarding the building of Olympic venues. The ratios show the total expenditure connected with the successful running of the Games compared with the investment made, the effort to renovate existing facilities and the desire to provide new facilities, and the importance of temporary structures in the total building programme.

The required five ratios are: 1) the ratio of operating expenditure to the sum of operating and capital expenditure; 2) the ratio of capital expenditure on renovation to total capital expenditure on construction and renovation; 3) the ratio of expenditure on the construction of temporary facilities to total capital expenditure of permanent and temporary facilities; 4) the ratio of capital expenditure on renovation of existing facilities to the “past” construction costs of the existing facilities; and 5) the ratio of the land acquisition costs to the total capital expenditure of the new permanent facilities. All ratios are derived from Ec35 Total Operating Expenditure (Olympic Activities) (see page 93) and Ec36 Total Capital Expenditure (Olympic Activities) (see page 94) (some ratios may require a breakdown of the indicators Ec35 and Ec36 for aspects such as whether facilities were temporary or permanent, were renovated or previously constructed, and land acquisition).

Data were available for all ratios, except ratio 4.

### b) Data

See attachments.

### c) Commentary

*Ratio 1.* The ratio of operating costs to total costs (operating and capital) was 0.76:1, which suggests that the cost of running the 2010 Winter Games (operating costs) was considerably larger (over three times more) than the capital invested in venue development.

*Ratio 2.* The ratio of capital expenditure on renovation to total capital expenditure was 0.06:1, which suggests that capital expenditures were largely spent on major venue construction projects (new venues or significant upgrades of existing venues). Only three venues were renovated at a total cost of \$34,014,000.

*Ratio 3.* None of the venues were constructed for temporary use. All new and renovated facilities were planned to become permanent legacies (although not necessarily as a sport event venue, e.g., Richmond Olympic Oval, Vancouver Olympic/Paralympic Centre).

*Ratio 5.* There were no land acquisition costs for venue development.

In summary, the cost of operating the 2010 Winter Games was over three times the cost of capital investment on venue development for the Games. In terms of share of total capital costs, significantly more was spent on major venue construction projects than on renovations; however, all venues are planned as permanent legacies.

Ec40 - Ratios Specific to Olympic Activities (Ratio 1: Operating Expenditure to Total Expenditure)

Costs			Ratio of Operating to Total Cost
Operating (Ec35)	Capital (Ec36)	Total (Ec35+Ec36)	
\$1,884,129,000	\$603,271,000	\$2,487,400,000	0.76:1

Ec40 - Ratios Specific to Olympic Activities (Ratio 2: Renovation Expenditures to Total Capital Expenditures)

Pacific Coliseum	Whistler Media Centre	BC Place	Renovation Total	Total Capital Expenditures	Ratio of Renovation to Total Capital
\$18,920,000	\$3,000,000	\$12,094,000	\$34,014,000	\$603,271,000	0.06:1



## Ec41: Public Share of Expenditure (Olympic Activities)

### a) Data Discussion

The purpose of this indicator is to determine the participation of public authorities in carrying out Olympic activities (the level of public authority should be distinguished where relevant).

The required data are the public share of operating and capital expenditure spent on Olympic activities, according to the level of the public authority (national, regional, local and/or city). For capital expenditure, a detailed list of Olympic facilities specific to the Games (sports areas, Olympic Villages, villages, media centres) is given and the capital costs are added. For the operating expenditure, the costs of all Olympic services provided by the public authorities are estimated (administrative premises, reception, health care, security, customs, catering services, etc.). To measure the proportion of public expenditure in Olympic expenditure, these amounts are compared with total (public and private) expenditure.

Data were available in Olympic-related budget reports from the relevant public authorities (Vancouver, Richmond, Whistler, B.C., and Canada) for capital investments and operating expenditures overall (no breakdown by venue, etc.).

### b) Data

Ec41 - Public Share of Expenditure (Olympic Activities) (CAD)

	Public Authority					Total Public Share	Public Share of Total	Total (includes VANOC)
	Vancouver <sup>1</sup>	Richmond <sup>2</sup>	Whistler <sup>3</sup>	B.C. <sup>4</sup>	Canada <sup>5</sup>			
Capital expenditures	\$139,400,000	\$9,647,000	DNAA	\$290,000,000	\$290,000,000	\$729,047,000	96.9%	\$752,318,000
Operating expenditures	\$30,300,000	\$6,300,000	\$6,026,966	\$635,200,000	\$956,700,000	\$1,634,526,966	46.5%	\$3,518,655,966
<b>Totals</b>	<b>\$169,700,000</b>	<b>\$15,947,000</b>	<b>\$6,026,966</b>	<b>\$925,200,000</b>	<b>\$1,246,700,000</b>	<b>\$2,363,573,966</b>	<b>55.3%</b>	<b>\$4,270,973,966</b>

<sup>1</sup> City of Vancouver Administrative Report of March 31, 2010. The amount of \$139,400,000 is for Olympic venues only, although the City report lists other Olympic-related capital investments.

<sup>2</sup> Capital expenditures from the 2008 and 2009 Annual Reports from the City of Richmond (the 2010 Annual Report was not available as of January 21, 2011). Operating expenditures from <http://www.richmond.ca/discover/2010-Olympics/ozone.htm> (Richmond O Zone Celebration Site).

<sup>3</sup> Operating expenditures from the report titled Living the Dream (2010) from the Resort Municipality of Whistler.

<sup>4</sup> From the report titled British Columbia's Investment in the 2010 Olympic and Paralympic Games and Related Activities (2010) from the BC Olympic and Paralympic Winter Games Secretariat.

<sup>5</sup> From "Canada's Investments for the 2010 Winter Games" at <http://www.canada2010.gc.ca/invsts/index-eng.cfm> (accessed February 2011).

### c) Commentary

Capital expenditures for Olympic activities were almost exclusively funded by public authorities (96.9 percent), while operating expenditures for Olympic activities were funded approximately 50/50 by public authorities and VANOC. Overall, the public share of total expenditures was over one half (55.3 percent). In absolute amounts, the public authorities that spent the most overall were the Governments of Canada (29.2 percent of total expenditures) and B.C. (21.7 percent of total expenditures).

## Ec42: Public Share of Expenditure (Context Activities)

### a) Data Discussion

The purpose of this indicator is to monitor the participation of the public economy in adapting and developing the context in which the Games will take place.

The required data are expenditures by public authorities (city, regional, national) on Olympic-induced infrastructure projects. The public share of investment costs for each project is calculated for each public authority.

Data were obtained from the March 31, 2010 Administrative Report of the City of Vancouver, the March 27, 2009 news release from Transport Canada titled "Canada, B.C. Celebrate Near Completion of Canada Line," the Service Plan Update 2009/10 – 2010/2011 of the B.C. Ministry of Tourism, Culture and the Arts, and the Annual Service Plan Report 2009/10 of the B.C. Ministry of Transportation and Infrastructure.

### b) Data

Ec42 - Public Share of Expenditure (Context Activities) - 2009 (millions of dollars)<sup>1</sup>

Project	Total Costs		Total Public Share	Level of Public Authority (Government)					
	CAD	USD		Vancouver		BC		Canada	
				CAD	USD	CAD	USD	CAD	USD
Sea-to-Sky Highway upgrades	\$796	\$698	100%	\$0	\$0	\$796	\$698	\$0	\$0
Canada Line (new rapid transit)	\$2,000	\$1,750	46%	\$29	\$25	\$435	\$381	\$450	\$394
Vancouver Convention Centre expansion	\$883	\$774	86%	\$0	\$0	\$541	\$474	\$223	\$195

<sup>1</sup> All USD are based on the Bank of Canada exchange rate of 1.1412 for the year 2009, which was when all the projects were completed.

### c) Commentary

The public share of expenditure for Olympic-induced infrastructure projects was generally large (100 percent in one case). While it may appear that governments only contributed 46 percent towards the cost of the Canada Line, local governments also contributed indirectly (e.g., the local transportation authority TransLink also helped fund the Canada Line and TransLink, as reported in its 2009 Annual Report, received 22 percent of its revenues from property taxes collected from local governments). The provincial government contributed the most to these Olympic-induced infrastructure projects, followed by the federal government. The Vancouver government contributed the least.

### **Ec43: Tax Revenue from Olympic Activities**

#### **a) Data Discussion**

The purpose of this indicator is to monitor the evolution of tax revenue associated with the increase in economic activity due to Olympic activities.

The required data are a breakdown of the direct and indirect taxes levied by public authorities on the economic activities generated by Olympic activities, according to the level at which they are levied. This includes the tax and duty included in the operating and capital expenditure associated with Olympic expenditure, the tax levied on visitor spending (see Ec39), and the tax levied on directly induced earnings (see Ec38). The amounts are given in absolute terms (in the currency of the country and in USD at constant prices) and in relative terms. Given that it is impossible in accounting terms to isolate specific data on the tax revenue specific to Olympic activities, this revenue has to be determined by means of an estimate of the amount of trade in goods and services on which direct taxes are levied, and the variation in tax base on which indirect taxes are determined.

No data were available on the specific amounts generated by taxes (direct or indirect) and duty levied by different levels of public authorities for Olympic activities. Due to different tax rates for varied products/services, income and geographical locations in Canada (e.g., provinces), estimates are provided based on lower- and upper-end tax rates; the 'actual' amount of tax revenues most likely falls somewhere in between these lower and upper limits.

#### **b) Data**

See attachments.

#### **c) Commentary**

No data were available from VANOC on taxes and duties paid for goods and services and on employment earnings (tax revenue from employment earnings is estimated below). Due to a lack of detailed budget information, the types of taxes or duties paid for goods and services (rates vary depending on the type of expenditure) can not be determined; therefore, no estimate of taxes and duties paid by VANOC for goods and services can be calculated with an adequate level of accuracy (although the estimate would be no small amount, based on VANOC's total expenditures of almost \$1.9 billion CAD).

There are no data on visitor spending (Ec32, see page 87) that are specific to visitors who traveled to/within Canada for the 2010 Winter Games. At most, the increases in visitor spending in Canada and in BC were attributed in part (i.e., not entirely) to the Games.

Due to the lack of data on the proportion of visitors who came to Canada specifically for the Games and how much they spent, the following two extreme-case scenarios were used to calculate a lower- and an upper limit between which the 'actual' tax revenue probably lies. The lower-limit is a scenario in which none of the increase in visitor spending between the first quarter of 2009 and 2010 was related to the Games (\$0). The upper-limit is a scenario in which all the increase in visitor spending was specific to the Games during the comparison periods. Because tax rates differ between provinces/territories and in some cases between goods and services, median/average tax rates were used. The estimates are that Canada benefited by less than \$101.4 million in tax revenue from visitor spending related to the Games (\$98.5 million

USD) while B.C., based only on international and US visitors, benefited by less than \$7.7 million (\$7.5 million USD); these estimates are to be interpreted as the upper-limits possible for tax revenue from Games-related visitor spending – they are not to be interpreted as ‘actual’ tax revenue. Should data on the proportion of visitor spending specific to the Games become available in the future, such a proportion can be used to calculate a more accurate estimate of the ‘actual’ value (vs. an upper-limit).

There are no data on tax revenues that are specific to earnings from Olympic-related employment, which includes both VANOC employees and the external workforce contracted by VANOC. The total cost of staffing from VANOC’s last financial statement (December 2010) (see Ec38, page 98) is used to estimate tax revenues from the VANOC internal workforce. The estimate of \$51.6 million CAD (or \$50.1 million USD) should be interpreted cautiously because it is based on tax paid as a proportion of income from the year 2008 (data for 2010 will not be available until 2012) for the Greater Vancouver Regional District (assuming that most of VANOC’s internal workforce is from this area and their earnings are representative of the earnings in this area) and because the tax paid as a proportion of income varies with income bracket (this specificity of data was not available).

In summary, lack of data precludes accurate estimates of tax revenues from Olympic activities, although some estimates (e.g., upper and lower limits) are provided. Based on all the estimates and the caveats in interpreting these estimates, it is possible that total tax revenue may have been at least \$50 million CAD (approximate amount for estimated tax revenue from earnings).

Ec43 - Tax Revenue from Olympic Activities - Visitor Spending, Canada and B.C. (Estimates Based on Ec32: First Quarter Tourist Spending, Seasonally Adjusted, 2000 to 2010) (in millions of dollars)

	2009 <sup>1</sup>	2010 <sup>1</sup>	Increase 2009-2010	Median/average tax rate <sup>2</sup>	Estimated Tax Revenues <sup>3</sup>			
					CAD		USD <sup>4</sup>	
					Lower-end	Upper-end	Lower-end	Upper-end
Canada	\$17,344.0	\$18,189.0	\$845.0	12%	\$0	\$101.4	\$0	\$98.5
B.C. <sup>5</sup>								
<i>International visitors</i>	\$349.2	\$396.3	\$47.1	8.5%	\$0	\$4.0	\$0	\$3.9
<i>US visitors</i>	\$226.2	\$269.8	\$43.6	8.5%	\$0	\$3.7	\$0	\$3.6

<sup>1</sup> Numbers for Canada are from Statistics Canada reports on National Tourism Indicators Quarterly Estimates for 2009 and for 2010.

Numbers for BC are from Canada Tourism Commission reports on Travel Characteristics Q1 for 2009 and for 2010.

<sup>2</sup> The median tax rate across all provinces and territories was used for Canada. The average of the lowest and the highest tax rate (the Provincial Sales Tax was applicable only on selected goods and services) was used for BC.

<sup>3</sup> The lower end assumes that 0 percent of the increase in visitor spending was for the Games. The upper end assumes that 100 percent of the visitor spending was for the Games. The ‘actual’ number is probably somewhere between these two numbers.

<sup>4</sup> Based on the average of the exchange rates for January-March 2010 for the US from the Bank of Canada. All other amounts in this Table are in Canadian dollars.

<sup>5</sup> The numbers for B.C. do not include within-Canada travel, i.e., Canadians who traveled to Vancouver for the Games.

**Ec43 - Tax Revenue from Olympic Activities -  
 Earnings of VANOC Internal Workforce (Estimates  
 Based on Ec38) (in millions of dollars)**

VANOC Staffing Costs	Tax Rate for Greater Vancouver <sup>1</sup>	Estimated Tax Revenues from Earnings <sup>2</sup>	
		CAD	USD
\$298.4	17.30%	\$51.6	\$50.1

<sup>1</sup> Calculated based on the tax paid as % of income for the Greater Vancouver Regional District (assuming that most of VANOC's internal workforce are from this region) from the report titled "British Columbia Taxation Statistics 2008" from BC Stats (based on data from the Canada Revenue Agency). The latest report is only available for personal tax returns filed two years earlier (hence, data are from 2008).

<sup>2</sup> Although staffing costs were reported in 2010, the tax paid as % of income is from 2008. Currency conversion to USD is based on the rate from the Bank of Canada for the year 2010 (1.02993904).

## 4.2. Context/Event Economic Indicators

<b>Ec10: Airport Traffic</b>
<b>a) Data Discussion</b>
<p>The purpose of this indicator is to describe the evolution of airport traffic during the periods most affected by the staging of the Games and reflects the origin and number of people and freight arriving by plane. The indicator also reveals the evolution of the host city as a travel destination for people with disabilities.</p> <p>The required data are total movements of commercial air transport (divided in scheduled airlines), charter airlines, and private air transport. The total terminal number of passengers for commercial air transport, broken down by transit passengers (passengers changing the airplane without going out of the airport) and terminal passengers (passengers going in or going out of the airport) and by scheduled airlines and chartered airlines, are also to be reported. All figures are to include passengers who have disabilities, according to the respective recording of the airlines operating in the airport(s). Total air freight in tons is also to be reported.</p> <p>Data were available only for the monthly number of passengers and tons of cargo by year (2001 to 2010) for the Vancouver International Airport (YVR). Disaggregation of passengers and freight into arrivals and departures was not possible, nor was it possible to isolate transferring passengers who took connecting flights or passengers with disabilities. Data for the year 2010 were available only up to October; thus, where applicable, ten-month (January-October) periods were used for comparison purposes.</p>
<b>b) Data</b>
See attachments.
<b>c) Commentary</b>
<p>For the period January-October for the years 2001 to 2010, the fourth largest absolute number of passengers at YVR was in 2010 (after 2008, 2007, and 2006, in descending order), which was 416,302 passengers (or 3 percent) more than the 2001-2010 average. After adjusting for the population increase in Metro Vancouver, however, the number of passengers in 2010 ranks eighth (or third from the bottom), which was about 270 passengers per 1,000 Metro Vancouver population (or about 4 percent) fewer than the ten-month 2001-2010 average.</p> <p>Considering the number of passengers by month, the data appear consistent with an impact that is to be expected and potentially attributable to the 2010 Winter Games. In absolute numbers, when the same month is compared across all years, a notable change is observed after November 2009 – December 2009 and January 2010 ranked fourth largest in their respective months, followed by February 2010 which had the second largest number of YVR passengers for any February in the ten-year period, followed by April, May and June 2010 being their respective third largest, July 2010 falling to fourth place, then August 2010 ranking sixth and September 2010 ranking eight. Thus it appears that the main contribution to the number of passengers in 2010 being in overall fourth place over the ten-year period is predominantly due to the months of the 2010 Winter Games (February-March 2010) and the months immediately after. Specifically, the second largest number of passengers for any February between 2001 and 2010 is February 2010. Considering the economic crisis in 2009/2010 which generally</p>

depressed numbers in those years, the data suggest the increase in the number of passengers during the Olympic months may potentially have been induced by the Games.

Air freight (tons of cargo) transported through YVR show a similar trend. In terms of total cargo, 2010 ranks as the fourth largest during the ten-year period (after 2002, 2004, and 2001), which as 5,373 tons (or 3 percent) more than the ten-year average. After adjusting for the population increase in Metro Vancouver, however, 2010 ranks only eighth, which as 3.9 tons per 1,000 Metro Vancouver residents (or 4.6 percent) less than the ten-year average.

Analysis of the tons of cargo by month also suggests an impact potentially induced by the Games. After November 2009 (which ranked eighth largest for any November during the ten-year period), the largest amount of cargo transported through YVR in December during the ten-year period was in December 2009; followed by January 2010 in third place (during the ten-year period for the month of January), February, March and April 2010 in second place (May to October 2010 cargo numbers range from fourth to eight place). This increased air freight during the Games period, and the months immediately before and after it, suggests an effect that is potentially attributable to the 2010 Winter Games.

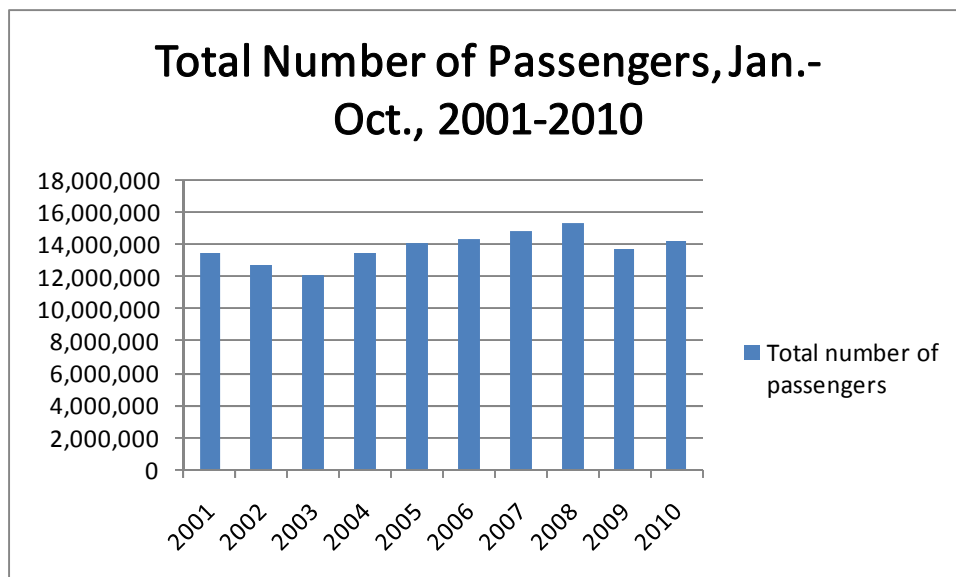
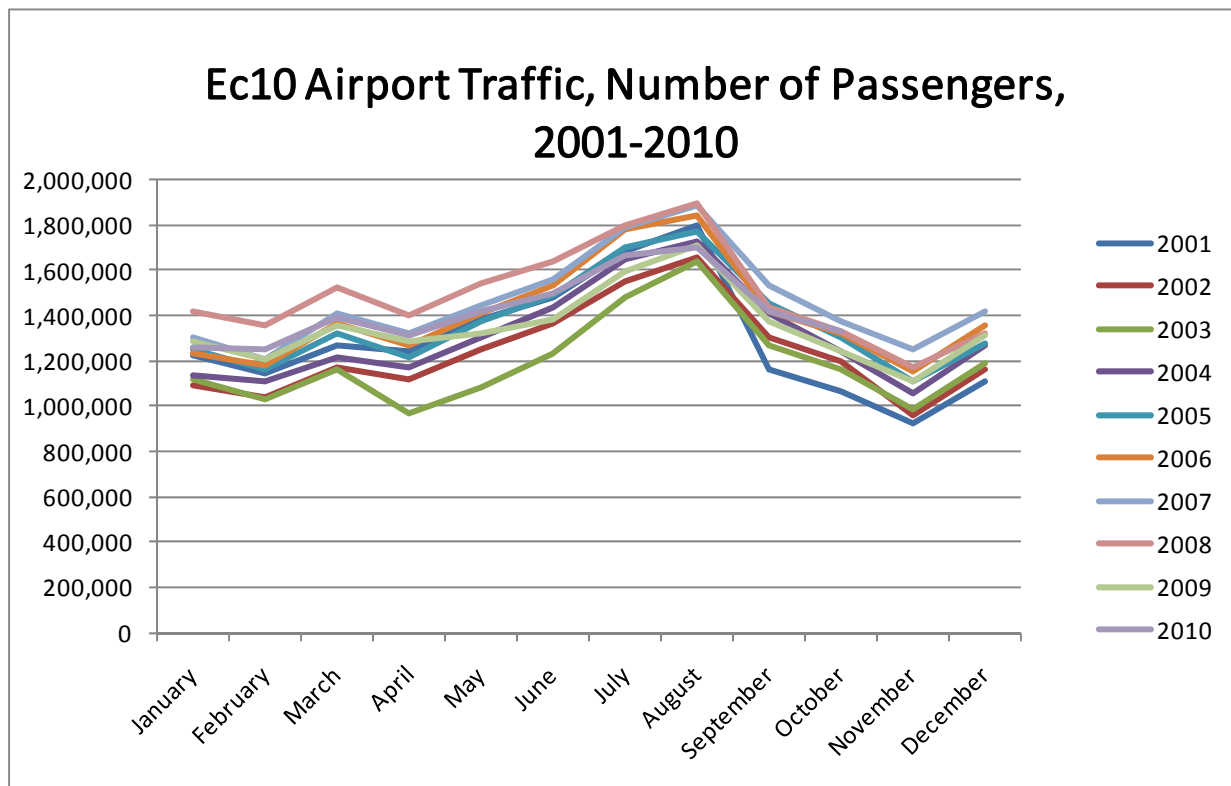
In summary, data on the number of passengers and the air freight at YVR for January-October for the years 2000 to 2010 suggest that the increases in both passengers and air freight are potentially attributable to the 2010 Winter Games, especially when the economic crisis of 2009/2010 is considered.

Ec10 Airport Traffic, Number of Passengers Arriving and Departing, 2001-2010

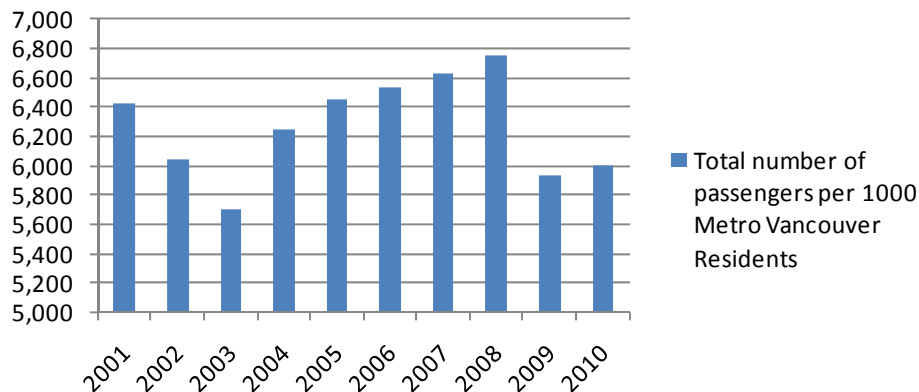
Month	Number of passengers arriving and departing									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
January	1,220,568	1,088,461	1,118,801	1,136,340	1,247,870	1,233,867	1,301,188	1,420,775	1,284,285	1,260,258
February	1,146,890	1,036,746	1,030,103	1,106,235	1,158,194	1,175,829	1,207,156	1,361,183	1,207,573	1,248,449
March	1,269,070	1,175,246	1,158,828	1,219,333	1,319,434	1,365,374	1,413,999	1,527,585	1,355,320	1,395,595
April	1,241,644	1,122,667	969,727	1,168,325	1,214,206	1,267,011	1,320,187	1,401,731	1,286,712	1,315,792
May	1,381,675	1,247,965	1,083,248	1,305,036	1,376,296	1,413,774	1,446,831	1,544,030	1,319,128	1,415,239
June	1,480,690	1,366,041	1,231,738	1,433,812	1,493,043	1,532,519	1,562,520	1,641,891	1,380,843	1,494,298
July	1,679,267	1,552,087	1,482,809	1,644,138	1,698,563	1,782,416	1,786,529	1,798,422	1,592,111	1,665,067
August	1,799,740	1,660,840	1,641,249	1,726,309	1,773,350	1,838,785	1,888,097	1,892,901	1,710,556	1,704,738
September	1,161,925	1,307,988	1,268,535	1,414,006	1,451,191	1,418,288	1,532,565	1,440,717	1,376,558	1,417,721
October	1,064,991	1,197,791	1,160,743	1,246,173	1,299,840	1,324,420	1,372,007	1,327,442	1,240,264	1,331,307
November	920,210	963,462	985,080	1,053,982	1,108,665	1,149,502	1,247,015	1,173,363	1,111,839	-
December	1,110,092	1,158,242	1,190,643	1,272,005	1,278,231	1,357,441	1,416,955	1,322,419	1,313,173	-
<b>Total</b>	<b>15,476,762</b>	<b>14,877,536</b>	<b>14,321,504</b>	<b>15,725,694</b>	<b>16,418,883</b>	<b>16,859,226</b>	<b>17,495,049</b>	<b>17,852,459</b>	<b>16,178,362</b>	<b>-</b>
<b>Total Jan. - Oct.</b>	<b>13,446,460</b>	<b>12,755,832</b>	<b>12,145,781</b>	<b>13,399,707</b>	<b>14,031,987</b>	<b>14,352,283</b>	<b>14,831,079</b>	<b>15,356,677</b>	<b>13,753,350</b>	<b>14,248,464</b>
<b>Total Jan. - Oct. per 1,000 Metro Vancouver population</b>	<b>6,425</b>	<b>6,037</b>	<b>5,700</b>	<b>6,240</b>	<b>6,456</b>	<b>6,526</b>	<b>6,629</b>	<b>6,755</b>	<b>5,932</b>	<b>6,000</b>

Source: YVR Vancouver International Airport.





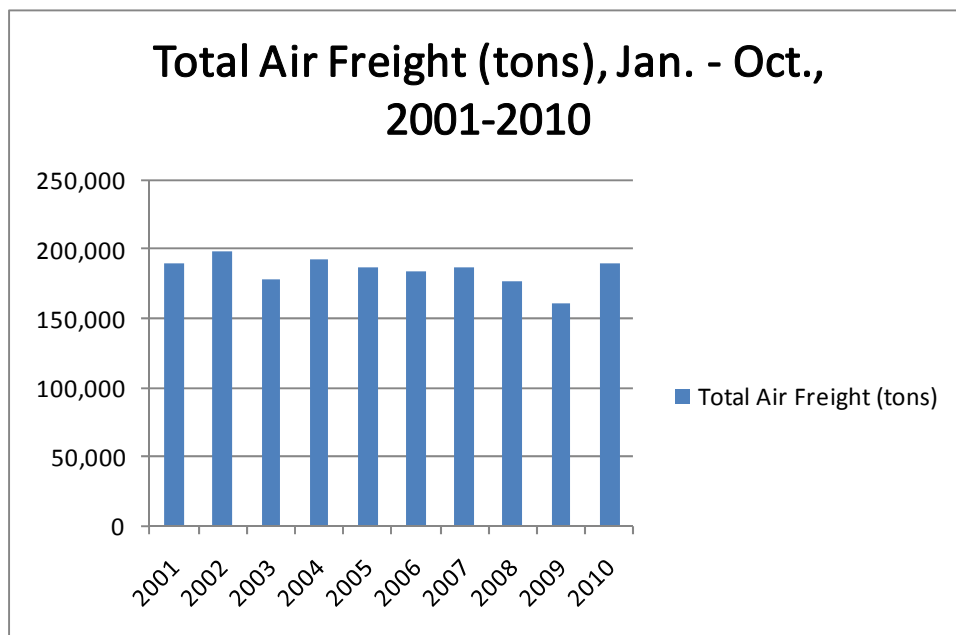
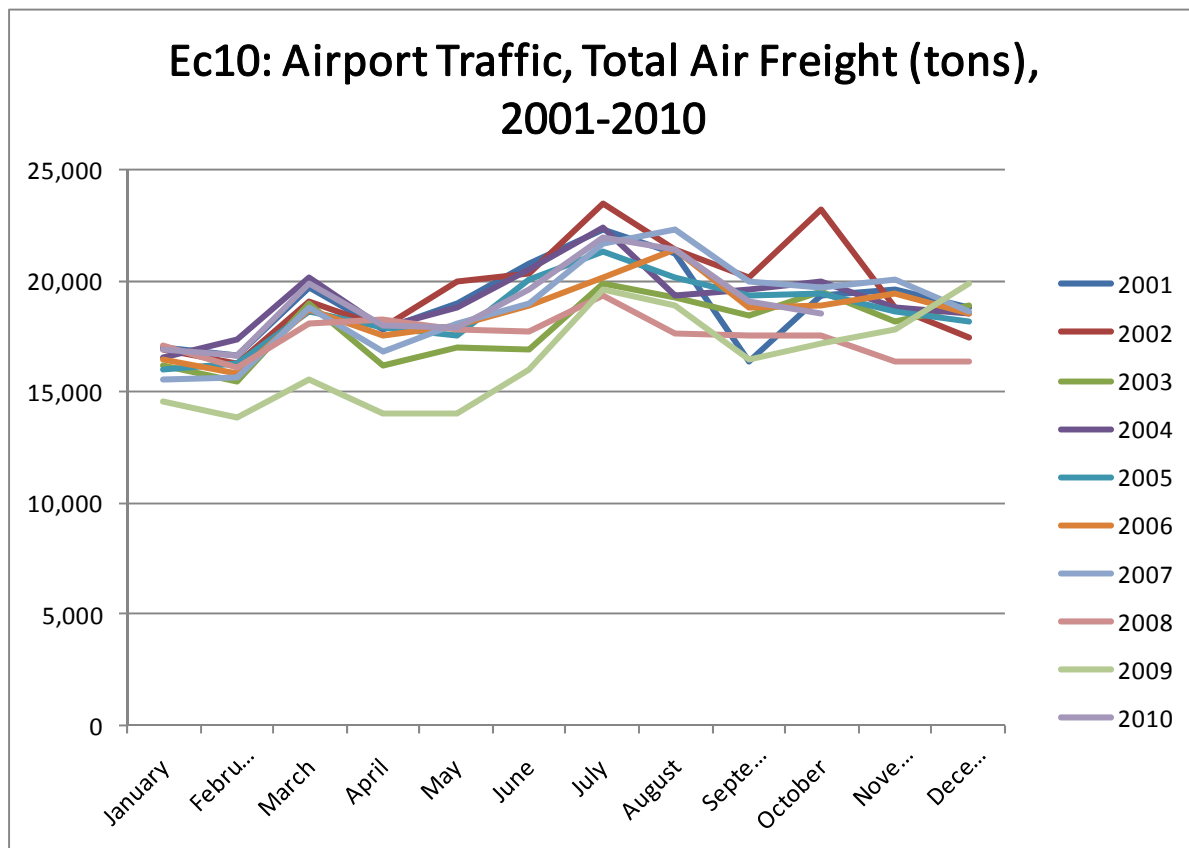
### Total number of passengers per 1000 Metro Vancouver Residents, Jan.- Oct., 2001-2010



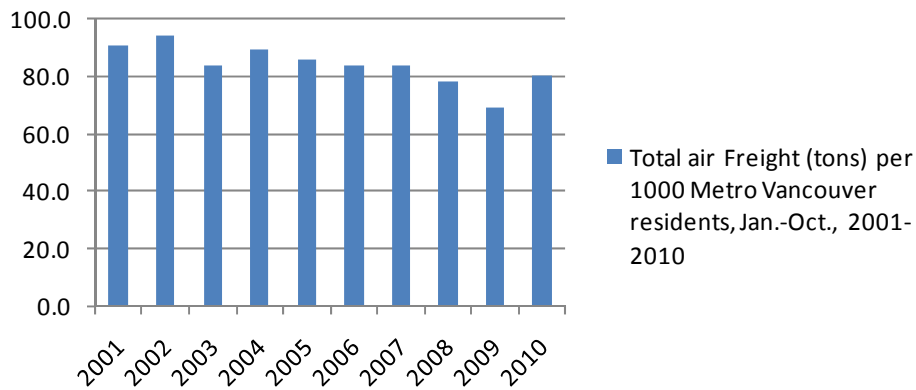
### Ec10 Airport Traffic, Total Air Freight (tons), 2001-2010

Month	Total air freight (tons)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
January	17,019	16,919	16,227	16,548	16,061	16,514	15,569	17,113	14,596	16,951
February	16,625	16,279	15,481	17,365	16,321	15,825	15,691	16,104	13,851	16,681
March	19,695	19,041	18,992	20,141	18,594	18,711	18,800	18,131	15,533	19,860
April	17,840	17,911	16,196	17,906	17,948	17,546	16,801	18,237	14,080	17,971
May	19,015	19,986	16,979	18,774	17,571	18,005	18,098	17,806	14,077	17,909
June	20,781	20,314	16,925	20,529	20,107	18,859	19,015	17,686	15,978	19,651
July	22,302	23,466	19,857	22,369	21,286	20,163	21,673	19,337	19,602	21,985
August	21,274	21,464	19,217	19,347	20,198	21,433	22,322	17,666	18,888	21,386
September	16,401	20,139	18,472	19,580	19,374	18,777	19,953	17,506	16,501	19,042
October	19,338	23,249	19,499	19,997	19,396	18,890	19,689	17,506	17,191	18,538
November	19,594	18,842	18,147	18,798	18,652	19,444	20,035	16,375	17,863	-
December	18,790	17,429	18,890	18,559	18,170	18,562	18,587	16,356	19,855	-
<b>Total</b>	<b>228,674</b>	<b>235,039</b>	<b>214,882</b>	<b>229,913</b>	<b>223,678</b>	<b>222,729</b>	<b>226,233</b>	<b>211,693</b>	<b>198,015</b>	<b>-</b>
<b>Total Jan. - Oct.</b>	<b>190,290</b>	<b>198,768</b>	<b>177,845</b>	<b>192,556</b>	<b>186,856</b>	<b>184,723</b>	<b>187,611</b>	<b>177,092</b>	<b>160,297</b>	<b>189,974</b>
<i>Total Jan. - Oct. per 1,000 Metro Vancouver population</i>										
	90.9	94.1	83.5	89.7	86.0	84.0	83.9	77.9	69.1	80.0

Source: YVR Vancouver International Airport.



### Total air Freight (tons) per 1000 Metro Vancouver residents, Jan.-Oct., 2001-2010



## Ec17: Hotel Price Index

### a) Data Discussion

The purpose of this indicator is to show the evolution of the price of visitor accommodation. It highlights the capacity of the city to control the hotel room rate and keep it reasonable during and after the Games period. It also helps to illustrate the attractiveness of the city for national and international tourism.

The required data are the room rates for hotels in the city and in the region, broken down by the type of room and classification of the hotels (one to five stars).

Data from "Tourism B.C. Year in Review" for the years 2001, 2006 and 2010 give the average monthly price for all hotel classes and room sizes in Canadian dollars. At the time of writing for this OGI report, data for the year 2010 for Metro Vancouver were only available to May 2010, and for B.C. were only available to April 2010. Note that the yearly averages for the year 2010 were calculated only on the available months. Comparisons across years were done on averages adjusted to the lowest number of available months, i.e., special averages for January/May for Metro Vancouver and January/April for B.C. were computed for the purposes of comparing data from the year 2010 to the years 2006 and 2001.

### b) Data

See attachments.

### c) Commentary

As presented in the OGI Pre-Games Report, Metro Vancouver and B.C. seem to follow the same annual trend in 2001 and 2006: relatively low prices in the winter and early spring (January to April), followed by a rise in the late spring and to late summer (May-September), and a gradual decline in the final months of the year (October to December). It is interesting to note that hotel prices in B.C. tend to hike up in December compared to other winter to early spring months, unlike in Metro Vancouver where December marks the cheapest hotel prices of the year. In the winter months (approximately November to April), hotel prices in B.C. are higher than those in Metro Vancouver, while during the spring and summer (approximately April to November) the pattern is reversed, with higher hotel prices in Metro Vancouver than in B.C. In 2006, we reported that although the average annual price of hotel accommodation nominally increased between 2001 and 2006 (6.4 percent in Metro Vancouver and 5.5 percent in B.C.), adjusting for inflation showed that in 2001 prices hotel accommodation was actually cheaper in 2006 than in 2001 (by 4.6 percent in Metro Vancouver and by 5.4 percent in B.C.).

In comparison, the year of the 2010 Olympic Winter Games displays a distinctly different trend in prices of accommodation, at least for the available months (January/May for Metro Vancouver, and January/April for B.C.). Not only were monthly average prices higher in 2010 for all months than in both 2001 and 2006, there was a dramatic one-time price hike in February (the month the Games took place). Compared to the already relatively high average hotel prices in January 2010, average hotel prices in February 2010 had jumped in both Metro Vancouver (to \$233, an 81 percent increase) and in B.C. (to \$212, a 65 percent increase), with prices going back to their approximate January level in March. In addition, unlike in 2001 and 2006, in 2010 the monthly average accommodation prices in Metro Vancouver were the same as or higher

than those in B.C. as a whole (especially in February). In May 2010, the average price was still slightly higher than in 2006 although the trend appeared to be normalizing at this time.

Importantly, the higher accommodation prices are not an artificial effect of inflation. Unlike the change between 2001 and 2006 (when the prices in real dollars had actually fallen despite the nominal increase), the nominal price change in 2010 is supported by an actual change in real dollars. The January-to-May Metro Vancouver and the January-to-April B.C. average prices of accommodation in 2010 were 33% higher than the same averages in 2006; in 2001 dollars; the actual increase is still sizeable at 24%. Compared to 2001, real prices were high in 2010 in both Metro Vancouver (by 20 percent) and B.C. (by 10 percent).

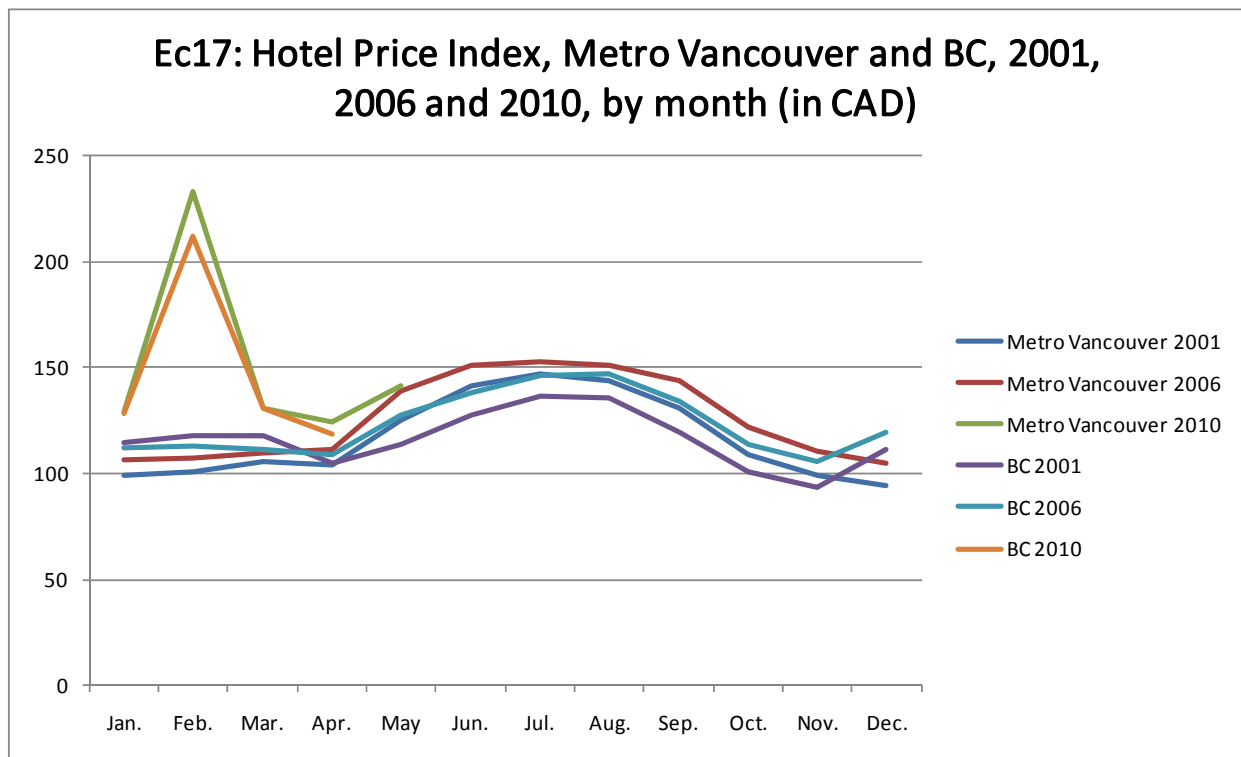
Overall, based on the available data and the 2001 and 2006 yearly trends, it is clear that the Olympic Games have affected (increased) the average hotel price in both Metro Vancouver and B.C. The real, inflation-adjusted price increase observed in 2010 during the available months is most certainly an impact of the Games. While one might anticipate increased hotel prices during the event, no comment is provided about whether this increase is “reasonable” (note: VANOC and partners did secure guaranteed accommodation in many hotels at prices that exceeded the ‘normal’ rate but were probably lower than what would have occurred if ‘market forces’ were at work). In addition, it is too early to comment on the attractiveness of the city for tourism, i.e., this is a longer-term effect that will be based on inflation-adjusted hotel prices in the future.

Ec17 Hotel Price Index, Metro Vancouver and B.C., 2001, 2006, and 2010, by month (in CAD)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year Average <sup>1</sup>
2001 Metro Van.	98.88	100.75	105.91	103.88	124.87	141.11	147.04	143.75	130.43	109.07	99.07	94.23	120.57
2006 Metro Van.	106.35	106.91	109.72	110.88	138.69	150.78	152.34	151.29	143.45	121.65	110.38	104.97	128.24
2010 Metro Van.	128.86	233.08	131.05	124.58	141.65	-	-	-	-	-	-	-	151.84
<b>Change 2001/2006</b>	<b>7.6%</b>	<b>6.1%</b>	<b>3.6%</b>	<b>6.7%</b>	<b>11.1%</b>	<b>6.9%</b>	<b>3.6%</b>	<b>5.2%</b>	<b>10.0%</b>	<b>11.5%</b>	<b>11.4%</b>	<b>11.4%</b>	<b>6.4%</b>
<b>Change 2006/2010</b>	<b>21.2%</b>	<b>118.0%</b>	<b>19.4%</b>	<b>12.4%</b>	<b>2.1%</b>	-	-	-	-	-	-	-	<b>32.6%</b>
2001 BC	114.69	117.83	117.45	104.88	113.99	127.75	136.62	135.94	119.6	100.31	93.25	111.13	118.22
2006 BC	111.88	112.61	111.3	108.72	127.64	138.27	145.86	146.56	133.67	113.46	105.33	119.16	124.73
2010 BC	128.25	211.54	130.39	118.54	-	-	-	-	-	-	-	-	147.18
<b>Change 2001/2006</b>	<b>-2.5%</b>	<b>-4.4%</b>	<b>-5.2%</b>	<b>3.7%</b>	<b>12.0%</b>	<b>8.2%</b>	<b>6.8%</b>	<b>7.8%</b>	<b>11.8%</b>	<b>13.1%</b>	<b>13.0%</b>	<b>7.2%</b>	<b>5.5%</b>
<b>Change 2006/2010</b>	<b>14.6%</b>	<b>87.9%</b>	<b>17.2%</b>	<b>9.0%</b>	-	-	-	-	-	-	-	-	<b>32.4%</b>

<sup>1</sup> Based on available months to date. Change calculated only over average of the lowest number of months available.

Source: Tourism B.C. Year in Review (2001, 2006, 2010).



## Ec18: Real Estate Market

### a) Data Discussion

The purpose of this indicator is to follow the impact of urban transformation and the urban district's fluctuating changes in the real estate market.

The required data are median price of new real estate and average real estate for sale and for rental, broken down by the city's urban districts.

Data on the median price of new real estate were not available. In addition, it was not possible to disaggregate median price by new and old real estate, by square meter, or by residential neighbourhoods. Thus, the data presented in the analysis are averages for Metro Vancouver and for B.C. (note: the baseline prices presented here correct for errors in the Baseline Report). Data for the year 2009 for average owner's major payments also were not available.

### b) Data

See attachment.

### c) Commentary

*From the Pre-Games Report.* Taking inflation into account, the rates at which prices (in 2001-chained Canadian dollars) increased in 2006 were relatively low, with the exception of average residential unit price, which was 36 percent higher in 2006 than it was in 2001 in Metro Vancouver, and 58 percent higher in B.C. The average owner's major payments were only 5 percent higher in both Metro Vancouver and B.C., and the average rental unit prices for all unit types were less than 3 percent higher in both Metro Vancouver and B.C. Finally, despite higher average residential unit prices in 2006, nearly 30 percent more properties were sold in Metro Vancouver and more than 40 percent more properties were sold in B.C. than were sold in 2001.

Update: In 2009, fewer properties were sold both in Metro Vancouver (-0.6 percent) and B.C. (-12.1 percent) than in 2006. Again, taking inflation into account, the average residential prices (in 2001-chained dollars) were 11 percent higher in 2009 than in 2006 in Metro Vancouver and 13 percent higher in B.C. The average rental unit prices for all unit types were higher in 2010 than in 2006 in both regions, with one-bedroom rental prices increasing the most (by about 8 percent), followed by three-bedroom rental prices (increase by 5 percent in Metro Vancouver and 6 percent in B.C.), and trailed by bachelor and two-bedroom rental prices (increase by about 3 to 4 percent).

Considering the global financial crisis of 2009 and its negative impact on the real estate market, it is not surprising that fewer properties were sold in 2009 than in 2006. Nevertheless, the average residential prices still increased in 2009 from 2006 but at a much smaller rate than between 2001 and 2006. On the other hand, average rental prices increased by more in 2010 compared to 2006 than between 2001 and 2006.

The higher prices could reflect a growing attractiveness of Vancouver and the province. The greater public exposure of the region surrounding the Olympic Games could have contributed, at least partly, to that attractiveness, thus possibly maintaining a higher price real estate market than the majority of the rest of the country. Due to a lack of data, no comment can be provided on changes in the real estate market in districts within Vancouver (e.g., changes that may reflect the location of venues within the city of Vancouver).



Ec18 Real Estate Market, Average Owning and Rental Prices,  
 Metro Vancouver, 2001, 2006, and 2009/2010 (CAD and USD<sup>1</sup>)

	<u>2001</u>		<u>2006</u>		<u>2010<sup>2</sup></u>	
	CAD	USD	CAD	USD	CAD	USD
<i>Total Residential Properties Sold</i>	28,176		36,479		36,257	
Average Residential Price	\$284,806	\$190,340	\$509,876	\$440,650	\$592,441	\$561,930
Average Owner's Major Payments	\$1,057	\$706	\$1,241	\$1,073	-	-
Average Rental Price						
Bachelor	\$621	\$415	\$701	\$606	\$778	\$738
One-Bedroom	\$726	\$485	\$816	\$705	\$943	\$894
Two-Bedroom	\$919	\$614	\$1,045	\$903	\$1,156	\$1,097
Three-Bedroom	\$1,060	\$708	\$1,220	\$1,054	\$1,369	\$1,299

<sup>1</sup> Exchange rates used are from Jan. 2, 2001, Jan. 3, 2006, Sep. 2, 2009, and Sep. 2, 2010.

<sup>2</sup> Average Residential Prices and Total Properties Sold for the latest period are from 2009.

Source: BC Statistics (2001, 2007), Canada Mortgage and Housing Corporation (2001, 2006), Canadian Real Estate Association and BC Real Estate Association.

Ec18 Real Estate Market, Average Owning and Rental Prices,  
 BC, 2001, 2006, and 2009/2010 (CAD and USD<sup>1</sup>)

	<u>2001</u>		<u>2006</u>		<u>2010<sup>2</sup></u>	
	CAD	USD	CAD	USD	CAD	USD
<i>Total Residential Properties Sold</i>	68,105		96,696		85,028	
Average Residential Price	\$220,952	\$147,666	\$390,963	\$337,882	\$465,725	\$441,740
Average Owner's Major Payments	\$904	\$604	\$1,059	\$915	-	-
Average Rental Price						
Bachelor	\$573	\$383	\$650	\$562	\$715	\$678
One-Bedroom	\$665	\$444	\$754	\$652	\$875	\$830
Two-Bedroom	\$772	\$516	\$882	\$762	\$982	\$931
Three-Bedroom	\$874	\$584	\$1,001	\$865	\$1,132	\$1,074

<sup>1</sup> Exchange rates used are from Jan. 2, 2001, Jan. 3, 2006, Sep. 2, 2009, and Sep. 2, 2010.

<sup>2</sup> Average Residential Prices and Total Properties Sold for the latest period are from 2009.

Source: BC Statistics (2001, 2007), Canada Mortgage and Housing Corporation (2001, 2006), Canadian Real Estate Association and BC Real Estate Association.

Ec27: Jobs created in Olympic and Context Activities
<b>a) Data Discussion</b>
<p>The purpose of this indicator is to distinguish job creation associated with the Games vs. extra work done by workers already under contract.</p> <p>The required data are the number of jobs actually created in order to perform Olympic and context activities within private and public partner companies. Only new jobs with a legal work contract are taken into consideration. All jobs created are given as full-time equivalents. The sectors of the economy are split into 17 categories following the classification of economic activities defined by the ISIC (International Standard Industrial Classification of All Economic Activities). Data on the jobs effectively created should be collected from employers.</p> <p>The data presented are from the PriceWaterhouseCoopers report on “The Games Effect: Report 6: Preliminary Economic Impact of the 2010 Olympic and Paralympic Winter Games on British Columbia and Canada to March 31, 2010” conducted for the 2010 Winter Games Secretariats of the Governments of B.C. and Canada.</p>
<b>b) Data</b>
No attachments.
<b>c) Commentary</b>
<p>PriceWaterhouseCoopers estimated that from January 2003 and March 31, 2010 between 38,680 and 52,320 jobs (midpoint of 45,500 jobs) were created in B.C. as an economic impact of the 2010 Winter Games (the number of 45,500 jobs is typically what appears in media reports). These estimates include jobs in construction, operations, and tourism, and do not include projects like the Sea-to-Sky Highway, Canada Line, and expansion of the Vancouver Convention and Exhibition Centre (considered to be context activities).</p>

### 4.3. Summary of Economic Indicators

#### Financing the Games

##### *Olympic-specific Activities*

The OCOG actual revenues did not differ drastically from the forward revenues (Ec33), nor did OCOG actual expenditures (\$1.8 billion CAD) differ much from the forward expenditures (Ec34). The largest share of revenues was from local/national sponsorships and from IOC contributions (Ec33). The largest share of expenditures was for venue operations and informations systems (Ec34). The cost of operating the 2010 Winter Games was over three times the cost of capital investment on venue development (Ec40). In terms of share of total capital costs, significantly more was spent on major venue construction projects than on renovations; however, all venues are planned as permanent legacies (Ec40).

Venue development (capital expenditures) was funded almost exclusively by governments (96.9 percent). Total operational expenditures included expenditures by VANOC and by governments separately, and were approximately split in half between governments (46.5 percent) and VANOC (Ec41). Among governments, the higher levels – provincial and federal – spent the most overall (includes both capital and operational expenditures).

The number of Olympic vehicles was highest during the Games with a vehicle fleet of 4,667 vehicles and a motor coach fleet of over 1,000 vehicles (Ec31). Although the motor coach fleet was less than a quarter of the size of the vehicle fleet during Games-time, it cost more than twice as much to operate the motor coach fleet (\$92.6 million CAD) than it did to operate the vehicle fleet (\$43 million CAD).

#### *Supportive Context Activities*

The building or upgrading of local infrastructure to accommodate the Games is considered a context rather than an Olympic activity. Three projects (transportation and convention centre), all of which were already planned but spearheaded to accommodate the 2010 Winter Games, together cost over \$3.7 billion CAD, which is about twice as much as it cost the OCOG for Olympic activities (Ec37). The public share of expenditure on these projects was generally large (Ec42). Vancouver benefited the most from these projects, followed by specific regions in BC (Whistler and Richmond) (Ec37, Ec39).

### **Economic Impacts**

#### *Tourists and Cargo*

Increases in YVR airport traffic (passenger and freight) (Ec10) and in visitor spending (Ec32) around the time of the Games are both potentially due to the 2010 Winter Games.

#### *Prices*

Increases in the cost of hotel stays (Ec17) and in real estate prices (Ec18) in the year 2010 (when the Games were held) are both potentially due to the Games.

#### *Businesses and Employment*

The creation of new businesses (Ec29) and new jobs (Ec27) are potentially related to the Games, although not necessarily for Olympic-specific activities. The businesses contracted by the OCOG appeared to be carrying out sustainability practices (Ec30). Seventy-five percent of the OCOG operating expenditures were spent in BC (vs. the rest of the country or abroad) (Ec35), while all venue development (capital expenditures) benefited Vancouver and Whistler (Ec36). These expenditures on Olympic activities locally/regionally most likely benefited businesses and created employment. The OCOG paid a total of \$298 million CAD in wages for Olympic activities (Ec38).

#### *Public Sector*

The public sector is estimated to have benefited by at least \$50 million CAD in total tax revenue from Olympic activities (Ec43) (note: this is a very conservative estimate due to lack of detailed data).

The impact on the public sector may also be observed at the level of the composition of the OCOG by sector. The subsequent activities of members of the OCOG Board of Directors showed a decrease in activity in the public sector and in the private sector, and an increase in the share of individuals who participated in mixed public/private sector activities after leaving the OCOG (Ec28).

## 5. Environmental Indicators

The environmental impact sphere includes 12 event indicators and 4 context/event indicators.

### 5.1. Event Environmental Indicators

#### En20: Greenhouse Gas Emissions of the Olympic and Paralympic Games

##### a) Data Discussion

The purpose of this indicator is to monitor the negative impact of the Olympic and Paralympic Games on the environment, specifically due to man-made emissions of six greenhouse gases in the Kyoto Protocol: carbon dioxide; methane; nitrous oxide; hydrofluorocarbons; perfluorocarbon; and sulphur hexafluorides.

The required data are emissions of Olympic and Paralympic activities on a world-wide basis (no limitations to national borders) converted to carbon dioxide equivalents (CO<sub>2</sub>e) on the basis of their global warming potential (GWP), broken down by sector, e.g., Olympic venues, spectator, media and Olympic family transportation, air, train and car transport, etc.

Data from the VANOC Sustainability Report 2009-2010 (note that the VANOC reporting period for this report is August 2009 to April 2010) were only available for total CO<sub>2</sub> equivalent emissions (not by greenhouse gas).

##### b) Data

#### En20 - Greenhouse Gas Emissions of Olympic Games and Paralympic Games (tonnes of CO<sub>2</sub>e)

	2005 to 2009 <sup>1</sup>	2009 to 2010 <sup>2</sup>	Cumulative (2005 to 2010)	Proportion of Cumulative Total
Olympic venues	8,729	11,087	19,816	7.1%
Spectators and media transportation	0	141,129	141,129	50.8%
Olympic family transportation	0	21,688	21,688	7.8%
Air, train and car transport (OCOG operations)	17,729	61,308	79,037	28.5%
Other (e.g., villages, Torch Relay, etc.)	2,082	13,925	16,007	5.8%
<b>Totals</b>	<b>28,540</b>	<b>249,137</b>	<b>277,677</b>	<b>100.0%</b>

Source: VANOC Sustainability Report 2009/2010.

<sup>1</sup> The reporting period consists of four twelve-month August-to-July periods (e.g., Aug.2005-Jul.2006, etc.).

<sup>2</sup> The reporting period is Aug.2009-Apr.2010.

##### c) Commentary

The data show a predictably large increase in CO<sub>2</sub> emissions during the relevant period from August 2009 to April 2010. This period includes the staging of the Vancouver 2010 Olympic and Paralympic Winter Games in February-March 2010. The 2009/2010 greenhouse gas emissions were over eight times higher than the cumulative emissions for the previous four reporting periods (August 2005 to July 2009).

The largest share of the cumulative total of greenhouse gas emissions was from Spectators and Media Transportation (50.8 percent), which includes travelling to get to the Games (air) as well local travel. The second largest share of the cumulative total was from Air, Train and Car

Transport for OCOG operations (28.5 percent). The combined transportation by different parties using different modes accounted for 87.5 percent of the cumulative greenhouse gas emissions from 2005 to 2010. Although emissions for Olympic Venues and Other activities increased during Games-time (2009-2010), these accounted for only 12.9 percent of the cumulative greenhouse gas emissions.

In summary, the data on greenhouse gas emissions suggest that the negative impact of the Games on the environment was due mainly to transportation, a significant portion of which was travelling to get to the Games in Vancouver, Canada.

En21: Olympic-induced Land-Use Changes
<b>a) Data Discussion</b>
<p>The purpose of this indicator is to evaluate the temporary and final land-use changes induced by Olympic venues (competition, non-competition, and training) and related infrastructure (transport infrastructure mainly), and also take into account compensation measures. This indicator is directly related to the context indicators En6 Land Use Changes and En7 Protected Sites.</p> <p>The required data are initial, Games-time, and final inventory (two years after the Olympic Games) of different land uses of Olympic venues and related infrastructure expressed in ha (hectares). Land use can be considered on different levels, such as primary land use (e.g., forest, arable land, permanent crops, industrial, commercial, transport, natural grasslands, wetlands unproductive lands) and secondary land use (e.g., protected areas, wastelands, contaminated land, parks, demolished facilities). Compensation measures such as reforestation, new biotopes (like wetlands, ponds, etc.), and new parks and new protected natural areas should also be listed. Temporary land use changes should also be highlighted (land that will be returned to its initial situation before the Games).</p> <p>Data on the initial and post-Games use of venues, venue development impacts, and compensation measures were generally available in the VANOC Sustainability Reports (the size of the venue sites was not reported although the size where compensation measures were implemented was reported in some cases).</p>
<b>b) Data</b>
See attachment.
<b>c) Commentary</b>
<p>All venue sites are reported as being previously existing facilities/resorts, previously harvested timber areas, or former industrial sites. While renovations on pre-existing facilities generally created minor modifications to their geographical footprint, venue construction of previous harvested timber areas and industrial sites (and even in some cases for pre-existing facilities/resorts) affected riparian habitats and led to the removal of trees. Various compensation measures were implemented on over 50 hectares of land across several venue sites during the construction phase and planned for post-Games, e.g., relocation of plant and animal species to nearby unaffected areas and restoration/revegetation. All venues are anticipated to revert back to their initial situations with some modifications (e.g., ski resorts, sport facilities) or are part of a larger community/neighbourhood multi-use development plan (e.g., new housing units in the Villages).</p> <p>Data on temporary land-use changes, and on other aspects of venue development, such as transportation infrastructure surrounding the venues (e.g., changes to roads, parking, transit), were not available in the Sustainability Reports.</p> <p>In summary, changes in land-use due to the development of Olympic venues can be categorized as one of the following – no change (similar use before, during, and after the Games), from previously harvested timber area to sport and other facilities, or from industrial/brownfield sites to sport and other facilities/amenities. Although venue development required site clearing in</p>

many cases (e.g., removal of trees), some compensation measures were implemented to minimize the negative impact on environment.

#### En21 - Olympic-induced Land-use Changes<sup>1</sup>

	Initial (Pre-Games)	Venue Development Impacts	Compensation Measures	(Anticipated) Final Situation (Post-Games)
<i>Mountain venues</i>				
Whistler Olympic/Paralympic Park	Previously harvested forest area adjacent to a former mine	Affected approximately 1.8 hectares of in-stream and riparian habitat	<i>Construction phase:</i> For every hectare impacted, 16 hectares were protected through extended riparian setbacks; 155,835 m <sup>2</sup> (15.5 hectares) was restored via revegetation <i>Post-Games:</i> 10,000 m <sup>2</sup> (1 hectare) area of creek restoration, riparian tree and shrub replanting, slope stabilization and seeding revegetation	Cross-country ski trails
Whistler Sliding Centre	Previously harvested forest adjacent to alpine ski resort	Site clearing (e.g., wood waste)	<i>Construction phase:</i> 20,370 m <sup>2</sup> (2 hectares) was restored via revegetation and some tree planting <i>Post-Games:</i> 5,000 m <sup>2</sup> (0.5 hectare) of seeding revegetation	Sliding sports and tourism
Whistler Creekside	Existing ski trails within major ski area	Removal of riparian vegetation, clearing of old growth trees	<i>Construction phase:</i> Relocation of tadpoles and adult frogs; 400,000 m <sup>2</sup> (40 hectares) was restored, primarily in the form of seeding <i>Post-Games:</i> 10,000 m <sup>2</sup> (1 hectare) area of creek restoration, riparian tree and shrub planting and seeding revegetation	Training, racing and recreational ski trails
Cypress Mountain	Previously existing ski runs	Site clearing (e.g., wood waste)	<i>Construction phase:</i> Relocation of wetland plant species to nearby wetlands and seeding in a 36,000 m <sup>2</sup> area (3.6 hectares) <i>Post-Games:</i> 7,500 m <sup>2</sup> (0.75 hectare) area of slope stabilization and seeding revegetation	Same use as pre-Games
<i>City venues</i>				
Canada Hockey Place	Previously existing facility (sports and other events)	Limited modifications to pre-existing facility		Same use as pre-Games
Vancouver Olympic/Paralympic Centre	Gravel parking area, adjacent to an aging community complex	The venue replaced the aging complex (torn down), site clearing (e.g., trees)	Salvaged trees were relocated to other sites in the park, revegetation of demolished sites	Community facility (e.g., library, swimming pool, ice rink, community centre)

<sup>1</sup> All data are from the VANOC Sustainability Reports unless otherwise noted.

En21 - Olympic-induced Land-use Changes<sup>1</sup> (continued)

	Initial (Pre-Games)	Venue Development Impacts	Compensation Measures	(Anticipated) Final Situation (Post-Games)
Pacific Coliseum	Previously existing facility (sports and other events)	Limited renovation to pre-existing facility, minimal increase in impervious land surface		Same use as pre-Games
Richmond Olympic Oval	Previously developed brownfield site, mainly a recreational vehicle park (the surrounding riverfront area will also be developed) <sup>2</sup>	Rezoned as a part of a Comprehensive Development District that includes the Oval, hardwood trees cut	For every tree removed, a minimum of two trees were planted in and around the venue and other local parks	Multi-sport and wellness facility
UBC Thunderbird Arena	Land of pre-existing ice rink facility	The venue replaced the pre-existing facility		Multi-sport facility
Britannia Centre (training venue)	Pre-existing ice rink	Renovations to the pre-existing facility		Same use as pre-Games
Trout Lake Centre (training venue)	Pre-existing public ice rink attached to a community centre	The venue replaced the pre-existing ice rink. Site clearance, e.g., removal of trees.	For every tree removed, a minimum of two trees were planted in and around the venue site	Same use as pre-Games
Killarney Centre (training venue)	Pre-existing public ice rink attached to a community centre and public aquatic centre	Redevelopment of the rink (aquatic centre remains)	For every tree removed, a minimum of two trees were planted in and around the venue site	Same use as pre-Games
<i>Villages</i>				
Vancouver Olympic/Paralympic Village	Former industrial site	The Village is part of a larger redevelopment plan for the area	Ecological restoration of the shoreline and contaminated lands, creation of a significant wildlife habitat through green space and foreshore rehabilitation	Market and non-market (affordable housing units)
Whistler Olympic/Paralympic Village	Development on previously harvested timber area, adjacent to former landfill <sup>3</sup>	Site clearing, e.g., trees	Creation of an on-site wetland complex	Sport training facility and affordable housing (part of a larger neighbourhood development plan)
Whistler Athletes' Centre	Development on previously harvested timber area, adjacent to former landfill <sup>3</sup>	Site clearing, e.g., trees		Sport training facility and accommodation
<i>Facilities</i>				
BC Place	Pre-existing facility (sports and other events)	Limited modifications to pre-existing facility		Same use as pre-Games
Main Media Centre	Pre-existing waterfront facility (convention centre) (expansion of the facility is not directly related to the Games)	Expansion of pre-existing facility		Same use as pre-Games prior to expansion

<sup>1</sup> All data are from the VANOC Sustainability Reports unless otherwise noted.

<sup>2</sup> Data from a City of Richmond news release about the rezoning ([http://www.richmond.ca/news/2005\\_city/1221\\_oval.htm](http://www.richmond.ca/news/2005_city/1221_oval.htm), accessed January 24, 2011).

<sup>3</sup> From the website of the Resort Municipality of Whistler ([http://www.whistler.ca/index.php?option=com\\_content&task=view&id=276&Itemid=98](http://www.whistler.ca/index.php?option=com_content&task=view&id=276&Itemid=98), accessed January 24, 2011).



En22: Olympic and Paralympic Venues in Protected sites
<b>a) Data Discussion</b>
<p>The purpose of this indicator is to measure the potential impact of Olympic venues or competitions on or near protected sites and the measures taken to compensate these impacts. A protected site is a natural, historical or cultural area protected on the international, national or regional level.</p> <p>The required data are the total surface area (in hectares) of Olympic activities in or near protected sites (at a distance of less than 1 km) for the initial and final situations and related compensation measures. The data are broken down by the total area where competitions are held (without destruction of the natural sites) and by the area that is destructed permanently or temporarily by the building of the venues. The total cumulated area of compensation measures is also given (e.g., new protected sites, new biotopes), broken down by type of measure and type of compensation.</p> <p>Data from the VANOC Sustainability Report 2009-2010 were for areas that were destructed permanently or temporarily by the building of venues, but not for the area where venues were built without destroying natural sites. No data were available on the compensation measures specifically implemented within or near protected areas (see En21 for compensation measures in general, page 122). It should be noted that although the OGI Technical Manual defines “near protected sites” as venues being at a distance of less than 1 km from the protected sites, VANOC defined “near protected sites” as venues being at a distance of less than 3 km from protected sites.</p>
<b>b) Data</b>
<p>VANOC reports that an area of 5.9 km<sup>2</sup> (590 hectares) across six sport venues (e.g., some mountain venues), one village and one facility were used within or near protected areas or areas of high biodiversity value (a distance of 3 km or less).</p>
<b>c) Commentary</b>
<p>In summary, less than one half of the venues (sport, village and facility) were within or near protected areas (a distance of less than 3 km) covering an area of 590 hectares. Compensation measures in general (no details with respect to protected areas) were implemented.</p>

## En23: Food Production Consumed During Olympic Games and Paralympic Games

### a) Data Discussion

The purpose of this indicator is to show the degree of involvement of local and national production in feeding the Games, and the existence or absence of established sustainability criteria for agriculture.

The required data are the total amount of food consumed, the origin of the food (regional and national agriculture), and compliance with sustainability criteria for agriculture.

Data were available for the amount of food sold or distributed (i.e., consumed) during the Olympic and Paralympic Games (number of items/hot meals served), the origin of the food and how much of the food was organically produced (sustainability criteria for agriculture). Note: Data were available only for selected venues (shown in the table below). The Whistler concession stands counted number of total hot meals served, while the rest of the available venue data counted the number of food items sold or distributed. Data about origin and organically-produced food were not available for the UBC Thunderbird Arena venue.

### b) Data

En 23: Amount of Food Sold or Distributed during the Olympic and Paralympic Games, Selected Venues

Venue\ Event	<u>Total amount of food sold or distributed</u>		<u>Originating in the region<sup>1</sup></u>		<u>Originating in the rest of the country</u>		<u>Total Certified Organic (A) (100% originating in the region)</u>	
	Olympic	Paralympic	Olympic	Paralympic	Olympic	Paralympic	Olympic	Paralympic
Whistler Olympic Park								
Obligatory/Volunteer Food (items)	75,157	17,504	45,094	10,502	22,547	5,251	902	210
Whistler Olympic Park Concession (total hot meals served)	55,878	3,290	10,789	1,034	40,559	1,943	8,811	870
Whistler Sliding Centre								
Obligatory/Volunteer Food (items)	27,880	n/a <sup>2</sup>	16,728	n/a <sup>2</sup>	8,364	n/a <sup>2</sup>	558	n/a <sup>2</sup>
Whistler Sliding Centre Concession (total hot meals served)	31,227	n/a <sup>2</sup>	5,810	n/a <sup>2</sup>	24,023	n/a <sup>2</sup>	4,310	n/a <sup>2</sup>
Whistler Celebration Plaza (items)	13,289	7,986	7,973	4,792	3,987	2,396	266	160
UBC Thunderbird Arena (items)	125,400	88,679	-	-	-	-	-	-

<sup>1</sup> Region refers to Metro Vancouver and Whistler (including Pemberton).

<sup>2</sup> No Paralympic events held at these venues.

### c) Commentary

Please note that the unit of measurement for the concessions is total meals served while the unit of measurement for all other venues were individual items; thus, percentage comparisons are not readily available.

For the Whistler Olympic Park and Sliding Centre, 60 percent of the Obligatory/Volunteer food items distributed came from the region (as it did for the Whistler Celebration Plaza); 30 percent came from the rest of the country, and the remaining 10 percent from out of the country.

Nineteen percent of the total meals served at the Whistler Olympic Park and Sliding Centre Concessions for the Olympic Games came from the region, while 73 percent of the Sliding Concession came from the rest of the country (for the Park Concession, 77 percent came from the rest of the country). Of the total meals served at the Whistler Olympic Park Concession for

the Paralympic Games, 31 percent came from the region, 59 percent came from the rest of the country and the remaining 10 percent from out of the country. Clearly, concession food originated predominantly in the rest of the country while the rest of the food (specifically volunteer food) was mainly from the region.

All of the certified organic food at the Games for the selected venues were from the region. However, the proportion of certified organic food at the various venues was about one-quarter or less of the total food originating in the region. Only about one to two percent of the food items distributed and sold at the Whistler Olympic Park, Sliding Centre and Celebration Plaza were organic. In contrast, 16 percent of the total meals served at the Whistler Olympic Park Concession and 14 percent of the Whistler Sliding Centre Concession during the Olympic Games were certified organic, while 26 percent of the total meals served at the Whistler Olympic Park Concession during the Paralympic Games were organic.

## En26: Capacity of Olympic and Paralympic Venues

### a) Data Discussion

The purpose of this indicator is to assess the total capacity of Olympic and Paralympic venues before (pre-existing), during (Olympic and Paralympic mode), and after the Games (redevelopment and reassignment). This indicator also investigates the accessibility capacity of the venues in terms of how they respond to accessibility standards and how suitable they are for post-Games usage as barrier-free venues available to the widest range of users.

The required data are total capacity in terms of spectator capacity (permanent and temporary seating, standing and sitting spaces) and floor area (e.g., temporary area). Data are broken down by venue, and subsequent use is categorized as socio-cultural, professional sport, sport for all (public use) and other. For each venue, the number of users with a disability that the venue can accommodate (ambulant, wheelchair, visual, hearing) and the type of user (athletes, spectators, and other – media and International Paralympic Committee and International Olympic Committee seating) are also required.

Data on spectator capacity were available for the initial situation and during the Games, but not for post-Games. Data were not available for the floor area of the venues. Data were available on the capacity to accommodate spectators with a wheelchair, but not for users with ambulant, visual, or hearing disabilities.

### b) Data

See Attachments A (Olympic venues) and B (Paralympic venues).

### c) Commentary

Note: Venue seating capacity refers to the total number of seats available, and not only the number of tickets (seats) that were available to the general public for purchase (So40, page 58).

Four pre-existing venues that already had spectator seating were used during the 2010 Winter Games – BC Place (both Olympic and Paralympic Games), Pacific Coliseum (Olympic Games only), UBC both Olympic and Paralympic Games) and Canada Hockey Place (Olympic Games only). Other venues either existed but did not have spectator seating, or were newly constructed.

All venues provided seating for spectators with wheelchairs, while accessible seating for athletes and others varied across venues. Wheelchair seating was generally located in platform areas; some new platform areas were also built to accommodate guests. Mobility impaired seating was located in special areas to avoid stairs (platforms and near gates). Visually impaired seating and hearing impaired seating areas were either arranged through ticketing ahead of time (area nearest to field of play) or was subject to available “hold seating” areas at time of event (the hold and release of accessible seating to persons other than those who need it when these seats are not first sold to people with disabilities). Improvements to pre-existing seating areas (line of sight) and new seating area expansions were created for additional seating (e.g. at BC Place, UBC, and Hillcrest).

The available data suggest that spectator seating capacity was greater during the 2010 Winter Games than prior to the Games, mostly due to spectator seating that was added to existing venues or to newly constructed venues. Accessible seating for spectators in wheelchairs was

available at all venues. The venues were designed in consideration of the ongoing need for community-based recreational sport opportunities for persons with and without a disability; while there are plans for the future of the venues, post-Games usage (with respect to spectator capacity and floor area) will be reported in the final OGI post-Games report (2013).

## En26-A Capacity of Olympic Venues

		Total spectator capacity			
		Initial Situation		Games period	
		permanent	temporary	permanent	temporary
BC Place - Opening, Closing & Victory Ceremonies	Total	60000	-	55000	-
	Wheelchair	spectators	-	132	104
		athletes	-	-	-
		others	-	22	-
Pacific Coliseum - Figure Skating & Short Track	Total	15713	2000	14200	-
	Wheelchair	spectators	-	68	142
		athletes	-	-	-
		others	-	-	-
UBC	Total	5054	1800	6800	-
	Wheelchair	spectators	-	59	110
		athletes	-	-	-
		others	-	-	-
Hilcrest (Vancouver Olympic Centre)	Total	-	-	5,600	-
	Wheelchair	spectators	-	-	130
		athletes	-	-	-
		others	-	-	10
Canada Hockey Place	Total	18630 (max: 20,000)	-	19300	-
	Wheelchair	spectators	-	94	-
		athletes	-	-	-
		others	-	20	-
Cypress - Snowboard	Total	-	-	-	12000
	Wheelchair	spectators	-	-	20
		athletes	-	-	-
		others	-	-	4
Cypress - Freestyle	Total	-	-	-	12000
	Wheelchair	spectators	-	-	20
		athletes	-	-	-
		others	-	-	4
WOP- Biathlon	Total	-	-	-	12000
	Wheelchair	spectators	-	-	42
		athletes	-	-	-
		others	-	-	4
WOP- Cross Country	Total	-	-	-	12000
	Wheelchair	spectators	-	-	88
		athletes	-	-	-
		others	-	-	4
WOP- Ski Jump	Total	-	-	-	12000
	Wheelchair	spectators	-	-	54
		athletes	-	-	-
		others	-	-	8
Whistler Creekside	Total	-	-	-	7700
	Wheelchair	spectators	-	-	132
		athletes	-	-	-
		others	-	-	4
Whistler Sliding Centre	Total	-	-	-	12000
	Wheelchair	spectators	-	-	38
		athletes	-	-	-
		others	-	-	4
Richmond Oval	Total	-	-	-	7600
	Wheelchair	spectators	-	-	94
		athletes	-	-	-
		others	-	-	-

## En26-B Capacity of Paralympic Venues

		Total spectator capacity			
		Initial Situation		Games period	
		permanent	temporary	permanent	temporary
BC Place - Opening	Total	60000	-	55000	-
	Wheelchair	spectators	-	132	172
		athletes	-	-	-
		others	-	22	20
UBC	Total	5054	1800	6800	-
	Wheelchair	spectators	-	123	122
		athletes	-	-	54
		others	-	-	46
Hilcrest (Vancouver Paralympic Centre)	Total	-	-	5600	-
	Wheelchair	spectators	-	-	130
		athletes	-	-	28
		others	-	-	30
WPP- Biathlon & Cross Country	Total	-	-	-	-
	Wheelchair	spectators	-	-	88
		athletes	-	-	-
		others	-	-	4
Whistler Creekside	Total	-	-	-	5000
	Wheelchair	spectators	-	-	132
		athletes	-	-	-
		others	-	-	4

## En27: Life-cycle Inventory of Olympic and Paralympic Venues

### a) Data Discussion

The purpose of this indicator is to provide an overall, synthetic view of the inputs (energy and raw materials) used for the life-cycle of an Olympic or Paralympic venue and the outputs (water effluents, airborne emissions, solid wastes, other) that are released into the environment. Specific measures can be taken to reduce the inputs and outputs of the venue.

The required data are the amount of material used, grey energy (energy needed in production and construction) required, CO<sub>2</sub> equivalent emissions, NO<sub>x</sub> and SO<sub>2</sub> equivalent emissions. The construction process of each venue is broken down into four mandatory phases (earthworks, foundations, carcass work and finishing work) and two optional phases (redevelopment and dismantling). A list of materials used is to be provided for each phase.

The data required for this indicator were not available and had to be developed from original research using life cycle assessment (LCA) methodology. The Olympics and Paralympics required the construction of nine buildings and upgrade/improvement of seven existing buildings. The current scope of buildings studied includes the construction of two buildings – the Richmond Olympic Oval and the Douglas Mitchell Thunderbird Sports Centre (DMTSC). The two optional phases (redevelopment and dismantling) were not included. In addition, the data for water effluents have been characterized in terms of Eutrophication Potential impacts.

The data were from obtained by students from an upper level undergraduate LCA course at the University of British Columbia (CIVL 498C: Whole Building Life Cycle Assessment) in collaboration with the University Sustainability Initiative (<http://www.sustain.ubc.ca/about-us/usi>). The students used the Athena Institute's Environmental Impact Estimator (IE) LCA software (<http://www.athenasmi.org/tools/impactEstimator/index.html>) to determine the cradle-to-gate impacts of the Richmond Olympic Oval and the DMTSC. This software references construction product life cycle inventory data from the Athena LCI Database and the US Environmental Protection Agency's impact assessment methodology, called the Tool for the Reduction and Assessment of Chemical and other environmental Impacts (TRACI).

For the complete reports go to <http://www.sustain.ubc.ca/seeds-library> and search:

- Life Cycle Analysis: The Richmond Olympic Oval Vancouver, British Columbia (<http://www.sustain.ubc.ca/sites/default/files/seedslibrary/Life%20Cycle%20Analysis%20-%20The%20Richmond%20Olympic%20Oval%20w%20cover.pdf>)
- Life Cycle Assessment (LCA) Report Thunderbird Old Arena (<http://www.sustain.ubc.ca/sites/default/files/seedslibrary/Life%20Cycle%20Assessment%20Report%20-%20Thunderbird%20Old%20Arena%20w%20cover%20.pdf>)
- Life Cycle Analysis (LCA) of Doug Mitchell Thunderbird Sports Centre (<http://www.sustain.ubc.ca/sites/default/files/seedslibrary/LCA%20of%20Doug%20Mitchell%20Thunderbird%20Sports%20Centre%20w%20cover.pdf>)

A presentation of these studies can be found at <http://www.youtube.com/user/LCADiscovery>. For the presentation slides go to <http://www.sustain.ubc.ca/seeds-library> and search: Whole Building Life Cycle Assessment: Three Olympic Venues Presentation Slides (<http://www.sustain.ubc.ca/sites/default/files/seedslibrary/LCA%20Presentation%20w%20cover.pdf>)



## b) Data

See attachments.

## c) Commentary

The Richmond Olympic Oval and DMTSC LCA studies were primarily developed from electronic copies of their architectural and structural drawings. Material takeoffs were developed from these drawings using OnScreen Take-Off (<http://www.oncenter.com/products/ost/>). To ensure accuracy, this takeoff process was complemented with site visits and communications with the venue architects. These takeoffs were input into the IE in order to assess their impacts. For complete documentation of each LCA study, please refer to links cited above in the Data Discussion.

The Richmond Olympic Oval was a new construction. The impacts of pre-loading the site of the Oval are captured under Earthworks. The Doug Mitchell Thunderbird Sports Complex was a partial demolition of the original Thunderbird Winter Sports Complex plus new construction. The impacts of partially demolishing the original Thunderbird Winter Sports Complex are also captured under Earthworks. The first two attached tables detail the resource use and environmental impact of each of the venues.

The inputs include renewable energy use, non-renewable energy use, and raw material use. Renewable energy was defined as that which was derived from hydropower operations, while non-renewable energy encompasses energy derived from all other sources (fossil fuels, etc.). For raw material use, conversion factors were used to derive mass measurements from the original volumetric measurements. Natural gas was assumed to be comprised of pure methane, CH<sub>4</sub>, and was converted using a molar mass of 16.0 g/mol; crude oil was assumed to be California crude oil with an average density of 915 kg/m<sup>3</sup>; and water was assumed to have a density of 1 kg/L.

The results of the studies estimate that the construction of the DMTSC required the consumption of 4-million MJ of renewable energy, 65.6-million MJ of non-renewable energy, and 21-million kg of raw materials. The construction of the Richmond Oval required 43.2-million MJ of renewable energy, 397.8-million MJ of non-renewable energy, and 458-million kg of raw materials (more of every type of input than for the DMTSC). By life-cycle phase, the Richmond Oval used 410.3-million kg of raw material in the *earthworks* phase alone, accounting for about 89.6% of all raw material used in construction. This is due to the immense amount of preload required to prepare the site, approximately 215.8 metric tons.

With respect to outputs, the DMTSC overall contributed about 4.7-million kg CO<sub>2</sub>-equivalents and the Richmond Oval imparted almost 25-million kg CO<sub>2</sub>-equivalents. Examining the data in terms of life-cycle phase reveals that, for both buildings, the greatest environmental impacts were created in the carcass work phase of development, in terms of its contribution to global warming potential (80.0% for DMTSC, 59.6% for the Oval), acidification potential (88.0% for DMTSC, 68.7% for the Oval), smog formation potential (81.0% for DMTSC, 57.9% for the Oval), and eutrophication potential (93.3% for DMTSC, 85.4% for the Oval).

From the bill of materials (BOM) for the construction of each building, material usage can be categorized by life-cycle phase (earthworks, foundation, carcass), including estimations of construction waste. In terms of mass, the top three BOM items for the DMTSC are: 30 MPa

Concrete with 35% flyash content (12.2-million kg, 70.57% of total BOM mass); concrete blocks (1.5-million kg, 8.49% of total BOM mass); and 20 MPa concrete with average flyash content (.87-million kg, 5.04% of total BOM mass). Similarly, the Richmond Oval's top three BOM entries are: 30 MPa concrete with average flyash content (64.3-million kg, 72.92% of total BOM mass); residential steel cladding (8.9-million kg, 10.07% of total BOM mass); and 60 MPa concrete with average flyash content (4.6-million kg, 5.23% of total BOM mass). The third and last attached table summarizes this data in terms of general product category (Wood, Wall Covering, Metal, etc.) and life-cycle phase. This table demonstrates the significant consumption of concrete relative to other materials, by weight, in the construction of the venues. For the DMTSC, concrete accounts for 99.5% (by mass) of material used in foundation work and 64.8% (by mass) of material used in carcass work. Likewise, for the Richmond Oval, concrete accounts for 99.8% (by mass) of material used in foundation work and 65.5% of material used in carcass work.

In summary, both inputs and outputs were larger for the Richmond Oval (which was a new building) than for the Dough Mitchell Thunderbird Sports Centre (which was partly demolished with new construction added). Except for raw materials used for the Oval, carcass work constituted the largest share of all life-cycle phases for both inputs and outputs for both venues. By weight, concrete constituted a significant share of materials used in construction of both venues.

Cradle to gate life cycle impacts of Doug Mitchell Thunderbird Sports Centre.

	Inputs				Outputs			
	Renewable energy Use	Non-renewable energy Use	Raw materials Use	Water Use	Global Warming Potential	Acid-ification Potential	Smog Formation Potential	Eutro-phication Potential
Variables	(MJ)	(MJ)	(kg)	(L)	(kg CO <sub>2</sub> eq)	(kg H <sup>+</sup> Mole eq)	(kg NO <sub>x</sub> eq)	(kg N eq)
<b>Earthworks</b>	3,878	852,451	215,809	-	611,042	86,454	1,715	76
<b>Foundations</b>	587,412	6,814,850	8,999,703	2,157,684	327,283	131,442	1,863	95
<b>Carcass work</b>	3,496,060	57,939,541	11,844,636	55,635,894	3,748,218	1,604,747	15,243	2,367
<b>TOTAL</b>	4,087,349	65,606,842	21,060,149	57,793,578	4,686,542	1,822,643	18,821	2,538

Cradle to gate life cycle impacts of Richmond Oval.

	Inputs				Outputs			
	Renewable energy Use	Non-renewable energy Use	Raw materials Use	Water Use	Global Warming Potential	Acid-ification Potential	Smog Formation Potential	Eutro-phication Potential
Variables	(MJ)	(MJ)	(kg)	(L)	(kg CO <sub>2</sub> eq)	(kg H <sup>+</sup> Mole eq)	(kg NO <sub>x</sub> eq)	(kg N eq)
<b>Earthworks</b>	4,404,703	67,443,152	410,305,924	-	4,964,357	1,461,971	29,991	1,357
<b>Foundations</b>	3,899,917	34,728,239	39,765,131	9,239,870	5,123,217	2,053,711	29,483	1,400
<b>Carcass work</b>	34,924,722	295,663,822	7,881,443	66,670,437	14,904,939	7,731,504	81,865	16,118
<b>TOTAL</b>	43,229,342	397,835,213	457,952,497	75,910,307	24,992,513	11,247,186	141,339	18,875

Construction material types consumed in construction of Doug Mitchell Thunderbird Sports Centre and Richmond Oval.

Material Category	Total (kg)	Doug Mitchell Thunderbird Sports Centre			Richmond Oval	
		Earthworks	Foundation	Carcass	Foundation	Carcass
		Demolition Wastes (kg)	Stocked (kg)	Stocked (kg)	Stocked (kg)	Stocked (kg)
Wood	2,386,330	159,420	0	756,934	0	1,469,977
Wall Coverings	624,189	230,683	0	169,135	0	224,372
Metal	15,377,949	1,599,722	30,045	799,116	65,726	12,883,340
Roof Materials	227,771,028	227,103,950	0	665,200	0	1,878
Masonry/Bricks	4,809,591	923,154	213	1,472,311	0	2,413,913
Concrete	86,999,088	3,345,774	6,289,139	7,119,548	36,229,124	34,015,503
Insulation	271,837	7,561	0	2,733	0	261,542
Glass	73,584	48,782	0	3,489	0	21,313
Plastics	15,175	12,862	555	1,666	0	93
Miscellaneous	619,098	9,450	0	1,083	0	608,564

## En28: Operating and Maintenance of Olympic and Paralympic Venues

### a) Data Discussion

The purpose of this indicator is to show the resources needed to operate and maintain venues, which are often not integrated in the planning of the venues. In addition, several resources are required for the transition of specific venues from Olympic to Paralympic mode (manpower, energy, water, finance).

The required data are permanent manpower needed to operate the venue (man-years per year) and operation costs (including as a proportion of the construction costs), temporary manpower needed to adapt venues from Olympic to Paralympic use (man-years, one-off) and the costs of transition (including as a proportion of the costs of the Olympic period), energy used per venue – electricity consumption and heating consumption for all maintenance and operational activities (kilowatt hours), waste production from these same activities by organic, mineral, hazardous and special waste (kg), wastewater produced (m<sup>3</sup>) and flows (per spectator and event).

Data were available in the VANOC Sustainability Report 2009-2010 only for energy (electricity and heating). (For waste production, see indicator En32, page 146.)

### b) Data

#### En28 Operating and Maintenance of Olympic and Paralympic Venues - Energy Used (Electricity kWh and Heating GJ, 2005-2009 and 2009-2010)

	Electricity Consumption (kWh)		Heating consumption (GJ)	
	2009-2010	2005-2009	2009-2010	2005-2009
Venues <sup>1</sup>	150,504	213	31,474	-
Olympic and Paralympic Cauldron	-	-	5,260	-
Villages	51,784	11	5,601	-
Other Facilities	228,934	584	73,081	963
<i>Total</i>	<i>431,222</i>	<i>808</i>	<i>115,416</i>	<i>963</i>
<b><i>Total 2005-2010</i></b>	<b><i>432,030</i></b>		<b><i>116,379</i></b>	

Source: VANOC Sustainability Report (2009-2010).

<sup>1</sup> VANOC did not have control of competition venues prior to the Games (other than Whistler Olympic Park and Whistler Sliding Centre) so there is no reporting from the majority of venues until VANOC took over exclusive control under the venue agreement. VANOC started reporting energy use once they had exclusive control from just prior to the Games in January until after the Games, and that date varied from facility to facility. The curling facility at Hillcrest Park was a Vancouver Park Board facility, but it was used for both Olympic curling and Paralympic curling so its reporting period is much longer (mid January to early April) than Canada Hockey Place (GM Place/Rogers Centre) which was under VANOC control for a very short period (early February to early March) given the Vancouver Canucks NHL schedule requirements.

### c) Commentary

As can be seen from the table above, the Olympic/Paralympic venues used a negligible amount of energy in the pre-Games period from 2005-2009, compared to the period during the Winter

Games, 2009-2010. While considerable energy was consumed during the Games, this limited data does not allow for any comments to be made about other resources (manpower) and outputs (waste and wastewater) that were needed to operate and maintain the venues.

En29: Olympic Induced Transport Infrastructure
a) Data Discussion
<p>The purpose of this indicator is to describe the transport infrastructure projects that were implemented in order to be able to organize the Games and absorb the peak transport demands on the Olympic venues.</p> <p>The required data are a list and the main characteristics of all transport infrastructure projects directly related to the Olympic and context activities – name of the project, localization of the project, authority or private organization owner of the project, new or already planned, Olympic or context activity, type of project, key dates of the project (planning, construction, completion), length of the project (in km), peak transport capacity (vehicle/hour, persons/hour), total investments and funding sources, and accessibility for people with disabilities. It separates the projects specifically needed for the Olympic Games from the general transport infrastructure already planned and accelerated before the Olympic Games.</p> <p>The required data were generally available from government websites and from TransLink (local transportation authority).</p>
b) Data
See attachment.
c) Commentary
<p>Three transport infrastructure projects (one Olympic, two context) were implemented in the city and in the region. The three projects together cost a total of over \$2.5 billion.</p> <p>One project – the Olympic Line streetcar in Vancouver – was a temporary demonstration project for a larger Vancouver Downtown Streetcar Project. The other two projects are intended to accommodate transport for a longer-term. Both the Olympic Line (which was free) and the Canada Line were popular during the Games, and the Canada Line remains popular post-Games (100,000 rides per day is a milestone that was reached sooner than originally projected).</p>

### En29 - Olympic-induced Transport Infrastructure

<i>Name of the project</i>	<b>Olympic Line<sup>1</sup></b>	<b>Canada Line<sup>2</sup></b>	<b>Sea-to-Sky Highway Improvement Project<sup>3</sup></b>
<i>Localisation of the project</i>	Vancouver - between the Olympic Village and Granville Island (a tourist attraction that also hosted some Olympic celebration events)	Vancouver-Richmond	Vancouver-Whistler
<i>Authority or private organisation owner of the project</i>	City of Vancouver	TransLink	Government of BC
<i>New or already planned project, Olympic or context activities</i>	New project, Olympic activity (although the project is considered a demonstration project of a larger plan for a Downtown Streetcar Project)	Already planned project, context activity	Already planned project, context activity
<i>Type of project and main characteristics</i>	Public transport - streetcar	Light rapid transit	Highway, 2-4 lanes
<i>Date of first planning</i>	2007 - planning 2008 - construction 2010 - opening	2001 - planning 2005 - construction 2009 - opening	1999 - planning 2003 - construction 2009 - completion
<i>Length of the project</i>	1.8km	19km	65km
<i>Peak transport capacity</i>	60 days of operation, 18 hours per day, every 6-10 minutes: 12,000 train runs 25,400 peak-day ridership	Capacity: 15,000 rides per hour	Peak: 16,000 cars/day (pre-construction)
<i>Total investments and funding sources</i>	>\$9 million: City of Vancouver - \$8.5 million Canada Mortgage and Housing Corporation - \$500,000 Bombardier - Streetcars and their operation	\$1.9 billion (\$2003): Government of Canada - \$450 million Government of BC - \$435 million Greater Vancouver Transportation Authority - \$321 million City of Vancouver - \$27 million Vancouver Airport Authority - \$245 million	\$600 million (\$2002) - Government of BC
<i>Does the project comply with accessibility criteria for people with disabilities</i>	Accessible - 2 locations for wheelchair (or bicycle or pram)	Accessible - 4 wheelchairs per train	n/a

<sup>1</sup> Data obtained from the City of Vancouver website (<http://vancouver.ca/engsvcs/transport/streetcar/index.htm>) and the Bombardier website (<http://www2.bombardier.com/vancouver/index.html>), accessed March 9, 2011.

<sup>2</sup> Data obtained from the TransLink website (<http://www.translink.ca>) and the City of Vancouver website (<http://vancouver.ca/engsvcs/transport/rto/canadalineline/faq.htm>), accessed March 9, 2011. The Canada Line website, which is no longer

<sup>3</sup> Data obtained from the Sea-to-Sky Highway Improvement Project website (<http://www.th.gov.bc.ca/seatosky/>), accessed March 9, 2011.

En30: Olympic Transport Impacts
<b>a) Data Discussion</b>
<p>The purpose of this indicator is to provide an assessment of the environmental impact of the Olympic transport system (train, buses, dedicated vehicles) linking the official Olympic and Paralympic sites. The use of Olympic transport has impacts on non-renewable resources (En14 and En15), greenhouse gas emissions (En4) and atmospheric pollutants emissions (En5).</p> <p>The required data are the number and type of vehicles, number of passengers transported, number of trips, total distance covered (km), average travel-time, and total fuel consumed. The data are broken down by each part of the Olympic transport system (Athletes and Team Officials, International Federations, IOC, Media, Marketing Partners, spectators, and workforce).</p> <p>The required data were generally not available. Data on the number of vehicles and total fuel consumed are presented for Ec31 Olympic Family Vehicles (see page 85). Alternative data from a research study and from TransLink (local transportation authority) on travel into and out of the downtown core, where many of the events and celebrations took place, are used.</p>
<b>b) Data</b>
See attachment.
<b>c) Commentary</b>
<p>Data for total Central Business District (CBD) and regional travel were obtained through a “screenline survey” that accounts for all person-trips crossing an imaginary cordon around the downtown core. The mode of travel, as well as passenger vehicle occupancy was recorded at all locations crossing into the downtown core over three 24-hour periods. Data for pre-Games were collected in autumn 2009.</p> <p>During the Games, total person-trips increased by 43.5 percent from a pre-Games daily total of 813,040 trips to 1,167,100 during the Games. The share of personal vehicular travel decreased from a majority share of 56.9 percent pre-Games to 38.9 percent during the Games. Concomitantly, the share of sustainable modes of travel increased from 43.1% pre-Games to 61.1% during the Games to become the dominant mode. The increase of 18 percentage points in the share of sustainable modes of travel for all person-trips entering/exiting the downtown core is the most significant increase ever recorded in this part of the region. The significant increases occurred over all modes, with the largest percent increases in the walking mode.</p> <p>Person-trips by mode of spectators attending Games-related events (sports, celebration, LiveCity) were compared to their typical mode of transportation for other sporting events. The share of trips taking transit, charter bus, walking or cycling doubled from 40 percent pre-Games (typical sporting event) to 80 percent during the Games, which is the highest-recorded share for sustainable modes of travel.</p> <p>Region-wide transit ridership revenue for the first quarter of 2010 up to March 31 (Games-time) was 24.1 percent more than for the same period in 2009. This increase in ridership supports the increase in sustainable mode shares observed through the screenline survey.</p> <p>In summary, travel into and out of the downtown core (where many Games-related events were held) increased during the Games. During the Games, the share of sustainable modes of travel</p>



also increased to become the dominant mode over personal vehicular travel.

En 30: Olympic transport impacts								
City (1,2)								
		Pre-Games		During Games		Difference		Mode Share Change
		Person Trips	%	Person Trips	%	Person Trips	% Change in Volume	
All Person Trips & Mode Share - CBD	Auto/Veh. Drivers	367,018	45.1%	308,979	26.5%	-58,039	-15.8%	-18.7%
	Auto/Veh. Passengers	95,622	11.8%	144,970	12.4%	49,348	51.6%	0.7%
	Transit	310,255	38.2%	583,599	50.0%	273,344	88.1%	11.8%
	Walk	30,340	3.7%	117,598	10.1%	87,258	287.6%	6.3%
	Bike	9,805	1.2%	11,936	1.0%	2,131	21.7%	-0.2%
	Total	813,040	100.0%	1,167,083	100.0%	354,043	43.5%	0.0%

		Typical Sporting Event	Olympic Games Events	Difference
		Mode Share	Mode Share	Mode Share
Spectator Person Trips Mode Share (3 venues <sup>a</sup> )	Car+Taxi	59.9%	19.9%	-40.0%
	Transit + Charter Bus	28.5%	68.5%	40.0%
	Walk	11.6%	11.4%	-0.2%
	Bike + Other	0.0%	0.2%	0.2%
	Total	100.0%	100.0%	0.0%

Region (3)								
Region-Wide Transit Ridership	Service	March 2009 YTD	March 2010 YTD	% Change	Service	Mar-09	Mar-10	% Change
	Bus	33,391,391	33,581,535	0.6%	Bus	10,965,169	11,241,212	2.5%
	SkyTrain/Canada Line	11,020,502	21,479,832	94.9%	SkyTrain/Canada Line	3,660,561	6,243,160	70.6%
	SeaBus	674,739	1,049,614	55.6%	SeaBus	233,206	277,628	19.0%
	WCE	686,377	693,862	1.1%	WCE	213,632	226,628	6.1%
	Total	45,773,009	56,804,843	24.1%	Total	15,072,568	17,988,628	19.3%

Sources	1	Host City Downtown Monitoring Study - Analysis & Discussion - Final Report
	2	Host City Downtown Monitoring Study - Analysis & Discussion - Technical Appendix
	3	<a href="http://www.translink.ca/en/About-TransLink/Media/2010/May/Transit-ridership-post-Olympics.aspx">http://www.translink.ca/en/About-TransLink/Media/2010/May/Transit-ridership-post-Olympics.aspx</a>
	4	
	5	
	x	

<sup>a</sup> Venues include GM Place, BC Place, and Yaletown LiveCity

En31: Olympic Energy Consumption
<b>a) Data Discussion</b>
<p>The purpose of this indicator is to estimate the environmental impacts of the Olympic and Paralympic Games. The indicator also shows the efficiency of the organization in managing scarce energy resources and non-renewable energy sources.</p> <p>The required data are the energy consumption of Olympic activities, broken down by source (e.g., fossil fuel, etc.) and by sector (e.g., industry, etc.).</p> <p>The required data were not available. Event data are available in the VANOC Sustainability Reports as annual energy consumption overall (not broken down by sector). Alternative data were also available from BC Hydro (hydroelectric energy) – the total energy consumption (i.e., not specifically Olympic) in Vancouver (excluding University Endowment Land and First Nations Reserves), Richmond and Whistler between January 2009 and March 2010, broken down by sector (residential, commercial, industrial and other).</p>
<b>b) Data</b>
See attachments.
<b>c) Commentary</b>
<p>Event data on energy consumption show that two types of sources of energy were used – 53.1 percent fossil fuels (petroleum and natural gas) and 46.9 percent renewable energy (hydroelectric and biomass). The trend is an increase in annual energy consumption in every successive reporting period, with the largest increase in the final reporting period (during which the Games were held). Cumulatively, hydroelectric energy was consumed the most (46.9 percent), followed by petroleum (41.6 percent); these two types of energy accounted for the majority of energy consumed (87.5 percent).</p> <p>Although the data could not be broken down by sector as required, the data could be categorized as either transport or as venues and other facilities/activities. Energy consumed for transport was either from biomass (all biomass was used for transport) or from petroleum (in the form of gasoline or diesel). Of the cumulative total of 492,716 gigajoules of energy consumed from petroleum, over one half was for transport (52.9 percent, or 260,559 gigajoules). Overall, transport accounted for 22 percent of cumulative energy consumed from all sources (78 percent of energy consumed was for venues and other facilities/activities).</p> <p>Upon inspection of the alternative data on total energy consumption by sector between January 2009 and March 2010 in the selected Olympic municipalities, the most prominent change appears to be in the “Other/Unclassified” category (i.e., energy consumption not classified as residential, commercial, industrial or other/utility and irrigation, other/pumping, or other/streetlights). Specifically, while the energy consumption totals (overall and for each sector – data not shown) remained relatively stable for the period, energy consumption categorized as “Other/Unspecified” increased suddenly starting in September 2009 in Vancouver and Richmond and two months later in Whistler, followed by an even further increase in February 2010 in Richmond. While these are sizeable changes in monthly energy consumption for the “Other/Unclassified” category, the changes are not large enough to significantly affect the overall sum total of all sectors (in February 2010 when the Olympic</p>

events were held, energy consumption in the “Other/Unclassified” category constituted less than 0.5 percent of total energy consumption in the respective communities). Since the winter months of 2009 do not show similar energy consumption levels, and as the months of elevated energy consumption coincide with the time the Olympic Games took place and the period immediately prior, it is somewhat likely that the energy consumption related to Olympic activities was reflected in this category. For comparison, the January to March total unclassified energy consumption for Vancouver was more than three times higher in 2010 (1,134,086 kWh) than in 2009 (263,010 kWh). For Richmond, it was almost five times higher (1,285,517 kWh in 2010 compared to 219,630 kWh in 2009), and for Whistler it was a staggering 31 times higher (287,732 kWh in 2010 compared to 8,940 kWh in 2009). Future post-Games data can help confirm whether the changes observed during the Games are unusual. While the conjecture can not be formally substantiated by the data source (BC Hydro), the tentative conclusion that the staging of the Olympic Games might be at least partially responsible for the sudden uncharacteristic increase in unclassified energy consumption in Vancouver, Richmond and Whistler during the winter months 2010 seems to be supported by the data. No comment is provided on the management of scarce and non-renewable energy sources (due to a lack of data).

In summary, just over one half of energy consumed for Olympic activities was from fossil fuels, while the rest was from renewable sources. Energy for venues and other facilities/activities accounted for the majority of energy consumed (almost 80 percent). There appears to have been a dramatic increase in energy use related to the event of the Games, as recorded by VANOC and based on the alternative data (not specific to the Olympics) from BC Hydro. (For additional information on energy consumption, see En28: Operation of Olympic Venues.)

### En31 - Olympic Energy Consumption (gigajoules)

	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010 <sup>1</sup>	Total	Proportion of 2005- 2010 Total
<i>Fossil fuels</i>							
Petroleum	26,855	44,874	29,196	31,634	360,157	492,716	41.6%
Natural gas	0	0	3,511	17,767	115,416	136,694	11.5%
Coals	0	0	0	0	0	0	0%
<i>Nuclear energy</i>	0	0	0	0	0	0	0%
<i>Renewable energy</i>							
Hydroelectric	14,217	14,320	33,615	61,699	431,222	555,073	46.9%
Solar	0	0	0	0	0	0	0%
Geothermal	0	0	0	0	0	0	0%
Tidal	0	0	0	0	0	0	0%
Wind	0	0	0	0	0	0	0%
Biomass	0	0	0	0	113	113	0%
Waste	0	0	0	0	0	0	0%
<b>Totals</b>	<b>41,072</b>	<b>59,194</b>	<b>66,322</b>	<b>111,100</b>	<b>906,908</b>	<b>1,184,596</b>	<b>100.0%</b>

Source: VANOC Sustainability Reports 2005-2006, 2006-2007, 2008-2009 and 2009-2010. The reporting period for the 2009-2010 report is August to April, and for all previous reports is August to July.

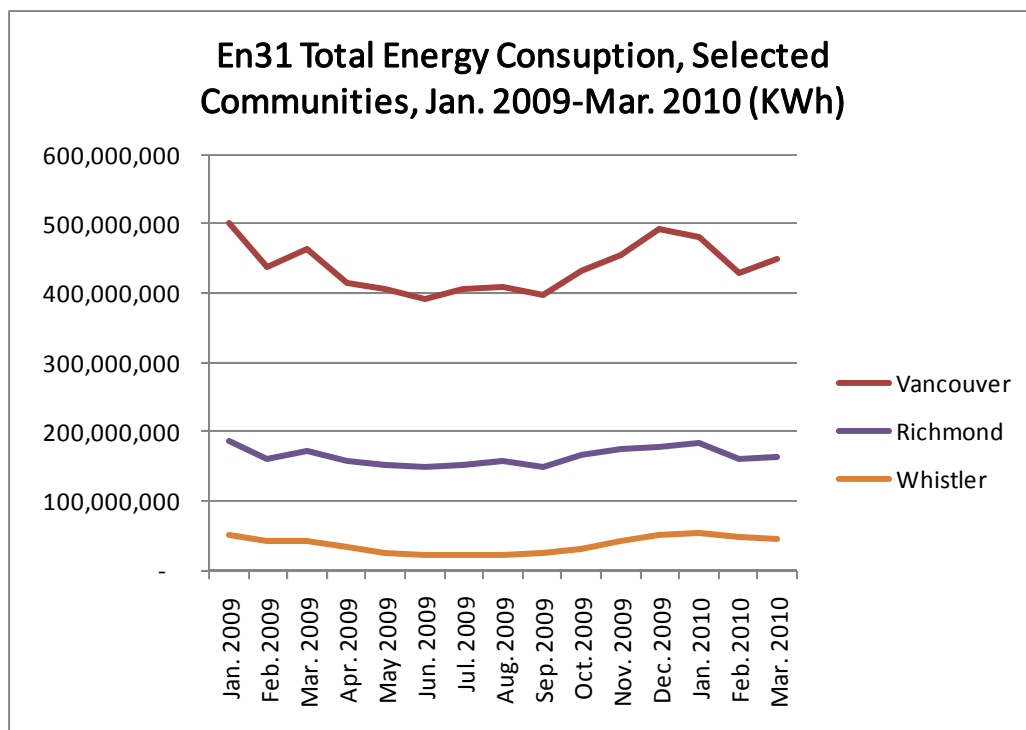
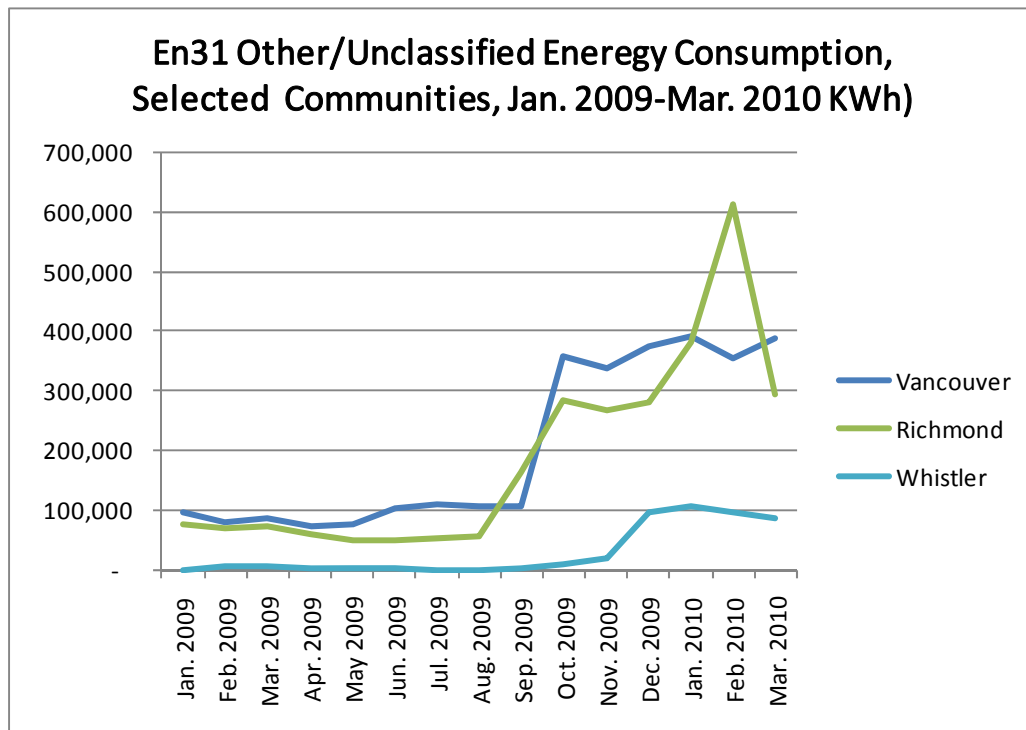
<sup>1</sup> The reporting period for the 2009-2010 report is August to April, and August to July for previous reports.

### En31 Energy Consumption, Selected Communities, Jan. 2009 -Mar. 2010, 'Other, Unclassified'<sup>1</sup> and Totals (KWh)

	Vancouver		Richmond		Whistler	
	Unclassified	Total	Unclassified	Total	Unclassified	Total
Jan. 2009	95,487	502,498,623	77,379	186,015,722	149	49,851,070
Feb. 2009	80,724	438,429,396	68,900	161,832,898	4,186	43,187,789
Mar. 2009	86,798	462,715,447	73,351	172,516,065	4,605	42,675,160
Apr. 2009	72,657	414,109,088	59,632	157,890,589	2,488	33,949,312
May 2009	76,675	406,906,573	49,882	153,289,991	1,566	25,929,214
Jun. 2009	103,139	391,300,881	48,085	149,834,029	1,191	21,416,830
Jul. 2009	107,710	406,837,684	53,265	151,407,020	34	21,565,181
Aug. 2009	106,328	409,552,066	54,433	156,694,589	232	22,047,868
Sep. 2009	107,229	398,238,580	161,405	149,870,633	2,633	23,813,651
Oct. 2009	358,726	433,152,274	284,977	166,526,799	7,435	31,485,709
Nov. 2009	338,630	454,654,418	266,306	174,084,457	19,520	42,089,143
Dec. 2009	374,151	491,535,052	280,802	176,902,745	96,785	51,717,046
Jan. 2010	391,327	481,458,920	379,660	182,397,659	106,891	54,138,161
Feb. 2010	354,295	428,046,859	610,844	162,023,679	95,531	48,357,109
Mar. 2010	388,465	449,974,318	295,012	163,556,517	85,310	46,529,484

Source: BC Hydro.

<sup>1</sup> Energy consumption not classified as residential, commercial, industrial, or other (utility & irrigation, pumping, or streetlights).



## En32: Solid Waste Production of the Olympic and Paralympic Games

### a) Data Discussion

The purpose of this indicator is to monitor the consumption of natural resources. Waste represents a loss of materials in the form of both materials and energy, while recycling reduces consumption and saves energy.

The required data are solid waste production and composition of all Olympic and Paralympic activities directly before, during, and after the Games, broken down by type of waste produced and by final disposal of the waste.

The required data were available in the VANOC Sustainability Reports 2008/2009 (August 2008 to July 2009) and 2009/2010 (August 2009 to April 2010), except for data on the type/composition of waste produced.

### b) Data

See attachment.

### c) Commentary

A comparison of the nine-month period around the Olympic and Paralympic Games, or “Games period” (August 2009 to July 2010) to the same period a year earlier reveals that while the absolute amount of waste increased during the Games period, the proportion of waste disposed decreased (by 12.3 percentage points, from 33.4 percent to 21.1 percent) while the proportion of waste reused, recycled or composted grew (also by 12.3 percentage points, from 66.6 percent to 78.9 percent). These changes were due to an increase in recycling (by 6.1 percentage points) and composting (by 6.2 percentage points) and a decrease in disposal at gas to energy landfill (-12.5 percentage points). The remaining categories of waste remained almost unchanged between the two periods.

Overall, the amount of total waste increased ten-fold. Composting increased the most (more than 40 times). Recycled waste, waste to energy, and waste disposed at standard landfill grew around ten times in the later Games period, while disposal at gas to energy landfill increased the least (only twice). The total waste reused, recycled and composted grew 11 times, while the total waste disposed grew 5.5 times.

The overall increase of solid waste is undoubtedly due to the staging of the 2010 Olympic and Paralympic Winter Games. It is possible that the proportionate increase of reused, recycled and composted waste and the proportionate decrease in disposed waste (as fractions of total waste) during the Games period are due to a commitment to pro-environmental/pro-sustainability practices adopted and promoted by the Olympic Games.

## En32 Solid Waste Production of the Olympic and Paralympic Games (tonnes)

	VANOC reported Olympic and Paralympic Activities					
	Aug. 2008-Apr. 2009		Aug. 2009-Apr. 2010		Change	
	tonnes	proportion of total	tonnes	proportion of total	tonnes	proportion of total
Reuse on site of materials for venue development <sup>1</sup>	0	0.0%	-	-	-	-
Recycling	712.2	64.6%	8011.7	70.7%	+7,299.5	+6.1
Composting	21.9	2.0%	931.1	8.2%	+909.2	+6.2
<b>Total Solid Waste Reused, Recycled or Composted</b>	<b>734.2</b>	<b>66.6%</b>	<b>8,942.8</b>	<b>78.9%</b>	<b>+8,208.6</b>	<b>+12.3</b>
Waste to Energy	62.4	5.7%	643.9	5.7%	+581.5	0.0
Disposal at Standard Landfill	114.9	10.4%	1,203.3	10.6%	+1,088.4	+0.2
Disposal at Gas to Energy Landfill	191.5	17.4%	545.6	4.8%	+354.1	-12.50
<b>Total Disposed Waste</b>	<b>368.8</b>	<b>33.4%</b>	<b>2394.2</b>	<b>21.1%</b>	<b>+2,025.4</b>	<b>-12.3</b>
<b>Total Waste</b>	<b>1,103.0</b>	<b>100.0%</b>	<b>11,337.0</b>	<b>100.0%</b>	<b>+10,234.0</b>	<b>0</b>

Source: VANOC Sustainability Reports (2008/2009; 2009/2010).

<sup>1</sup> In 2009/2010, certain Games-related products and materials have been reused, both internally and externally (for example, through donations). There are inherent difficulties, however, in quantifying the weight identified in this category, as the cost and time required to do so would be substantial and is beyond the scope of typical waste management data tracking.

## En34: Life-cycle Inventory of Olympic and Paralympic Games

### a) Data Discussion

The purpose of this indicator is to provide an overall, synthetic view of the inputs (energy and raw materials) used for the life-cycle of the Olympic and Paralympic Games and the outputs (e.g., water effluents, airborne emissions, solid wastes) that are released into the environment. The impact of environmental protection measures can be evaluated against this life-cycle inventory and priorities can be set.

Basic information is provided by other indicators (see individual indicators for details), such as En20 Greenhouse Gas Emissions of Olympic Games (page 120), En27 Life-cycle Inventory of Olympic Venues (page 132), En31 Olympic Energy Consumption (page 142), and En32 Solid Waste Production of Olympic Games (page 146). Not all the required data were available.

### b) Data

#### En34 - Life-cycle Inventory of Olympic and Paralympic Games<sup>1</sup>

<i>Inputs</i>	Energy <sup>2</sup>	Non-renewable	629,410 gigajoules
		Renewable	555,186 gigajoules
	Raw materials	-	DNAA
	Water	-	DNAA
<i>Outputs</i>	Water effluents	-	DNAA
	Atmospheric pollutants <sup>3</sup>	Greenhouse gas emissions	277,677 tCO <sub>2</sub> e
	Solid waste <sup>4</sup>		31,076 tonnes

<sup>1</sup> The reporting period is August 2005 to April 2010.

<sup>2</sup> Data from En31 Olympic Energy Consumption.

<sup>3</sup> Data from En20 Greenhouse Gas Emissions of the Olympic and Paralympic Games.

<sup>4</sup> Summed from data from the annual VANOC Sustainability Reports.

### c) Commentary

Due to lack of availability for some data, a synthetic view of the life-cycle of the Games (inputs and outputs) can not be provided, especially in relation to water consumption and effluents. However, it is noted that VANOC did have managements plans in place to reduce both the inputs required to host the Games and the outputs released into the environment.



## 5.2. Context/Event Environmental Indicators

En3: Water Quality
<b>a) Data Discussion</b> <p>The purpose of this indicator is to reveal the possible impact of recreational use of coastal and freshwater environments upon the health of users, and specifically on the health of the athletes competing in and on the aquatic environment.</p> <p>The required data are for three main pollution problems: 1) bathing water (concentration of intestinal enterococci and faecal coliforms); 2) eutrophication of lakes and ponds (total phosphorus and nitrate concentrations); and 3) eutrophication of rivers (orthophosphate and nitrate concentrations).</p> <p>No new data were available since the Pre-Games Report.</p>
<b>b) Data and Commentary</b> <p><i>From the Pre-Games Report.</i> Between 2003 and 2006, there was only a small change in the Fraser River's eutrophication (process whereby excessive plant nutrients are added to a body of water), which was mostly towards decreasing concentrations of ammonia and nitrite (with the exception of nitrite at McDonald Slough). It is unlikely that the upcoming 2010 Games have had an impact on water quality at local monitoring sites. (Source: B.C. Ministry of Environment)</p> <p><i>Games-time.</i> Due to the unavailability of more recent data, no conclusions can be made about water quality past 2006, and especially during Games-time.</p>

En5: Air Quality
<b>a) Data Discussion</b> <p>The purpose of this indicator is to monitor air quality in urban areas, especially the Olympic venues in the region. Exposure to outdoor pollutants has short-term and long-term impacts on human health and on athletes' performances.</p> <p>The required data are the concentrations of four atmospheric pollutants: 1) sulphur dioxide (SO<sub>2</sub>); 2) nitrogen dioxide (NO<sub>2</sub>); 3) ozone (O<sub>3</sub>); and 4) fine suspended particles with an aerodynamic diameter of 10 micrometers or less (PM<sub>10</sub>).</p> <p>No new data were available since the Pre-Games Report (data have been collected by Air Health BC but have not been processed yet).</p>
<b>b) Data and Commentary</b> <p><i>From the Pre-Games Report.</i> For Metro Vancouver (excluding Whistler and Squamish), there was no substantial Olympic Games impact yet. Whistler and Squamish (a municipality located on the road to Whistler) were experiencing increasingly higher AQHI (Air Quality Health Index) values after 2003, most likely attributable to increased construction and other activities oriented towards preparing the region for the 2010 Winter Games. Therefore, the Games may have had an indirect negative impact on air quality in Whistler/Squamish from 2003 to 2007.</p>

*Games-time.* Due to the unavailability of more recent data, no conclusions can be made about air quality past 2007, and especially during Games-time. This data will be available for the Post-Games Report.

## En24: Olympic Induced Housing

### a) Data Discussion

The purpose of this indicator is to show new housing areas, which is a major legacy of the Olympic and Paralympic Games. Housing used during the Games for athletes and media are very often transformed into residential housing after the Games.

The required data are total net floor area of residential housing built directly or indirectly for the Olympic and Paralympic Games. Direct residential housing includes the Olympic villages and the media villages. Indirect residential housing includes housing planned within urban regeneration or new developments linked to the Games.

Data were available only for the Vancouver Olympic Village and the Whistler Olympic Village (there were no media villages for the 2010 Winter Games, only media centres which did not provide housing). In addition, data were available only for newly built housing areas and not for housing areas destructured for Olympic venues and context activities. Therefore, the net floor area of residential housing could not be calculated.

### b) Data and Commentary

The total residential area of the Vancouver Olympic Village development (housing plus surroundings and auxiliary areas, such as shops, etc.) built directly for the Olympic Games measures 130,064.256 m<sup>2</sup>. According to the official website for the Vancouver 2010 Winter Games, the residential housing units of the Olympic Village showcase universal design elements, such as wider doorways, hallways and stairs that are easily adapted for complete accessibility, but no numbers are provided. The Village housed 350 Paralympic athletes during the 2010 Paralympic Winter Games. Housing area around the Village, which is part of a larger development that was already being planned before Vancouver became the Host City, is forecasted by the City of Vancouver (in charge of the development) to grow to 557,418.24 m<sup>2</sup> by 2020.

Although the floor area of housing destructured for Olympic venues and context activities was not available, zoning information from the City of Vancouver suggest that the area where the Vancouver Olympic Village now resides was mostly an industrial zone that contained a shipyard. This suggests that housing area destructured for the Vancouver Olympic Village specifically (and not necessarily of other Olympic activities) was probably small (if any).

The total residential housing floor area of the Whistler Olympic Village measures approximately 46,451.52 m<sup>2</sup>.

The available data, specifically for the Vancouver Olympic Village, suggest that a housing legacy (in terms of increased floor area) was established.

### En33: New Waste and Wastewater Treatment Facilities

#### a) Data Discussion

The purpose of this indicator is to show the effort of the host city in upgrading, renovating, or implementing new waste and wastewater treatment facilities to clean up the environment and to showcase new treatment and recycling facilities.

The required data are all new waste and wastewater treatment facilities and final disposal facilities that have been built in the period before the Olympic Games and directly after, and descriptions of the facilities (e.g., type of treatment, etc.).

Data were obtained for five waste and wastewater treatment facilities between 2001 and 2010.

#### b) Data

En33 - New Waste and Wastewater Treatment Facilities					
<i>Localisation of the project</i>	Vancouver	Vancouver	Metro Vancouver	Whistler	Whistler
<i>Name of the facility</i>	<b>Vancouver Landfill<sup>1</sup></b>	<b>Vancouver Landfill<sup>1</sup></b>	<b>Iona Sewage Treatment<sup>2</sup></b>	<b>Whistler Waste Transfer Station<sup>3</sup></b>	<b>Whistler Wastewater Treatment Plant<sup>3</sup></b>
<i>New project or already planned project</i>	Approved in 1999	Approved in 2001	2001	Planned	Planned
<i>Direct relation to Olympic activities or context activities</i>	No	No	No	Context activities	Context activities
<i>Type of treatment</i>	Solid waste	Wastewater	Wastewater	Solid waste	Wastewater
<i>Description of project</i>	Upgrade - landfill gas and flare	Upgrade - Leachate collection and containment system	Upgrade - enhanced primary treatment assessment	New - waste compacting (transported to landfill in Washington State, U.S.) to replace the old landfill which was closed in 2007	Upgrade - composting, use of microbes (instead of chemicals), UV disinfection, and use of heat from treated water to heat (95%) the Whistler Athletes' Village
<i>Start of construction</i>	2000	2001	-	2006	2007
<i>End of construction</i>	2001	2002	2001	2007	2009
<i>Average yearly treatment capacity</i>	1,225,932 tonnes (2009)		200 billion litres (2001)	17776 tonnes (2009)	3.9 million litres (2003)
<i>Total investment</i>	\$5,400,000	\$1,355,000	\$300,000	\$4,750,000	\$51,500,000

<sup>1</sup> City of Vancouver Annual Report, Solid Waste Division (2002) and City of Vancouver Landfill Annual Report (2009)

<sup>2</sup> Metro Vancouver Recycling and Waste and Sewerage Divisions

<sup>3</sup> Resort Municipality of Whistler website: <http://www.whistler.ca> (accessed March 17, 2011)

#### c) Commentary

Five waste and wastewater treatment facilities were built or upgraded between 2001 and 2010 – two in Vancouver, one in the Metro Vancouver area, and two in Whistler. While the facilities in Vancouver and Metro Vancouver were not upgraded in relation to the 2010 Winter Games, the facilities in Whistler had been identified as being needed and spurred on by the Games. Indeed, the heat from the treated water is used to help heat the Whistler Athletes' Village, which is now a neighbourhood after the Games. Therefore, the 2010 Winter Games do not appear to have affected the upgrading or constructing of waste and wastewater treatment facilities in the Vancouver area, but had spurred the construction of facilities in Whistler.

### **5.3. Summary of Environmental Indicators**

#### **Consumption**

##### *Land Use*

Olympic venues were either upgrades to pre-existing event venues or were constructed on previously harvested or industrial lands (En21). Less than half the venues were in or near protected sites (En22). Various compensation measures were implemented to minimize impact of venue construction on nature.

Venue construction and upgrades led to an increase in the seating capacity of venues during the Games (En26), while land use for the construction of the Olympic and Paralympic Villages increased the floor area of housing (En24).

##### *Transportation*

Three transport infrastructure projects (one Olympic, two context) were implemented in the city and in the region (En29). The three projects together cost a total of over \$2.5 billion. One project was temporary and the other two projects are intended to accommodate transport for a longer-term.

During the Games, travel into and out of the downtown core (where many Games-related events were held) increased (En30). During this period, the share of sustainable modes of travel into and out of the downtown core also increased to become the dominant mode over personal vehicular travel.

##### *Food*

Most of the food sold or distributed at the venues originated from within Canada, while all the organic food originated locally from Metro Vancouver and Whistler (En23).

##### *Energy*

Olympic-related energy consumption during the Games was almost an equal share between fossil fuels and renewable sources (En31). Most of the energy (80%) was used for venues and facilities, especially during the Games.

#### **Waste**

Due to the unavailability of data on air quality, no conclusions can be made past 2007, and especially during Games-time (up to 2007, construction and other Games-related activities may have increased Air Quality Health Index – a negative impact – in Whistler/Squamish but not for Metro Vancouver) (En5). Data from VANOC showed that Olympic-related greenhouse gas emissions increased every year since 2005, with an eight-fold increase during Games-time, mainly due to transportation to get to Vancouver/Canada (En20).

Due to the unavailability of data on water quality, no conclusions can be made past 2006, and especially during Games-time (the Games were unlikely to have affected water quality up to 2006) (En3).

Solid waste produced during the Games-time reporting period was ten times as much as the amount of solid waste produced during the previous period (En32). The share of waste that was re-used, recycled, or composted increased during the Games-time reporting period.

No new waste or wastewater facilities have been created since before 2003 (En33).

#### **Life-cycle (Inputs and Outputs)**

In terms of life-cycle of the venues (En27), both inputs and outputs were larger for the Richmond Oval (which was a new building) than for the Doug Mitchell Thunderbird Sports Centre (which was partly demolished with new construction added). Except for raw materials used for the Oval, carcass work constituted the largest share of all life-cycle phases for both inputs and outputs for both venues. By weight, concrete constituted a significant share of materials used in construction of both venues.

Data on the operation and maintenance of the venues (En28) and on the life-cycle of the Games overall (En34) were largely unavailable.

## 6. Inter-related Impacts Among Indicators

Although each indicator has been presented individually, they are not isolated from each other. The indicators generally reflect an input or an output that results from inputs. This section highlights some key inter-relations among indicators.

### *Venue Development and Post-Games Usage*

So far, the data suggest that the over \$600 million spent on venue development (Ec36) has led to venues that are accessible (So47) and that are still being used (or were being adapted for other uses) (En26).

### *Land Use and Affordable Housing*

The construction of the Olympic and Paralympic Villages increased housing area (En24). For example, industrial land in Vancouver was converted to mixed use land for the development of a neighbourhood that included the Village housing. However, the number of social housing units that was originally planned for the Village in Vancouver was reduced due to constraints associated with financing the construction of the Village (So31).

### *Energy Use and Greenhouse Gas Emissions*

Most of the Games-related energy consumption (80%) was for venues and facilities (En31). However, about one half of the Games-related pollution in terms of greenhouse gases (GHG) was for transportation, in large part due to Games-time transportation of spectators, athletes, etc. (En20). In other words, for the amount of energy consumed, transportation appeared to produce greater pollution than did venues and facilities. While new venues were built with LEED certification (En27), it remains unknown how much GHG was reduced due to these considerations.

### *Economic Stimulation and Cost of Living*

While the economy appeared to have gotten a boost in terms of new businesses (Ec29) and new jobs (Ec27) (either directly or indirectly related to the 2010 Winter Games), the cost of staying in a hotel during the Games increased (Ec17) as did the cost of real estate (Ec18).

### *External (to the OCOG) Support for the Games*

VANOC received a lot of external support to host the 2010 Winter Games, including government investment in Olympic activities (Ec36) and context activities (Ec37), volunteers (So38), and supports from other parties such as TransLink, etc. (So42).

### *Cultural and Educational Programs and Related Outcomes*

Cultural and educational programs were provided with a reach of different audiences (So34, So32), but outcomes in promoting cultures and sport remain largely unknown, although surveys showed that awareness of people with disabilities had increased after the 2010 Winter Games (So35).

## **7. Conclusion**

### **7.1. Overall Summary**

The most notable socio-cultural findings are the inclusion of minority groups (consultation, employment, cultural and education programs) as part of the planning and staging of the 2010 Winter Games, and support from governments and volunteers.

The most notable economic findings are the large government investments for both Olympic activities and context activities to support the 2010 Winter Games (benefiting mostly the Vancouver and Whistler regions), economic stimulation in terms of the creation of businesses and jobs, and a concomitant increase in the price of selected goods (hotels, real estate).

The most notable environmental findings are that Games-time consumption and waste often exceeded pre-Games numbers considerably (however, this is not surprising given the increased activity during event-time), that VANOC implemented strategies to minimize negative environmental impacts, and that more sustainable practices were observed during Games-time, such as a larger share of sustainable modes of travel into and out of the Vancouver downtown core and a larger share of waste being recycled, re-used and composted.

Some cross-sphere linkages between indicators were presented to highlight that hosting the Games requires inputs which then lead to outputs. These linkages are the basis of discussions that attempt to answer two questions. First, what value (e.g., legacies) was generated by the investment (e.g., money, time)? Second, how ‘sustainable’ were the 2010 Winter Games?

### **7.2. Looking Forward (Post-Games Report)**

This report shows through the use of event indicators that the Games-time period is different than the pre-Games period.

The final Post-Games Report in 2013 will report on impacts in the larger context of the host over the complete 12-year reporting period. The final analysis will be able to monitor potential time-limited or time-specific impacts or longer-time impacts (if any) of the 2010 Winter Games. The Post-Games Report will also further the discussion about value-for-investment and the sustainability of the 2010 Winter Games.