

Final Socio-Economic Monitoring Report Brilliant Expansion Project

April 1, 2003 to Sept 30, 2007



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Executive Summary

As required by the Project Approval Certificate (PAC) issued for the Brilliant Expansion Project (the Project), Columbia Power Corporation (CPC) hired an independent Socio-Economic Monitor to monitor, analyze and report on the social and economic impacts (both positive and negative) associated with the Project.

This report summarizes the socio-economic monitoring for the entire 4.5 years of the construction project. Both direct and indirect monitoring indicators were selected and reviewed with CPC's Community Impact Management Committee (CIMC) prior to initiating the monitoring program. The results of the monitoring have been compared to projected impacts and commitments outlined in the PAC, the Skanska-Chant Proposal and other relevant Project-related documents.

In terms of overall employment levels, the Project target of 400 person years has been exceeded by 146%. The indirect and induced employment impact from the Project can be estimated to be approximately 354 PYs, which exceeds the PAC target of 155 PYs by 128%. The local hire requirement of 85% fell short by 1%, when measured in terms of person years of employment. Equity employment has exceeded the defined target by 1% and the number of apprenticeships has more often than not well exceeded targets.

Employment income has reached \$51,183,112, which exceeds the estimated the PAC target of \$27 million by roughly 90%. Regional contractor expenditure projections have been exceeded by 425%.

As well, the Project has consistently reported lower lost day claims and lower days lost per claim (on average 50% and 78% lower respectively) than the WCB rates for heavy construction.

While the Brilliant Expansion Project is a significant project, it has been difficult to isolate its impact from other activities in the region. Hence, the indirect indicators monitored during the Project such as Castlegar apartment vacancy rates, mobile home occupancy and Kootenay unemployment rates, have shown rather ambiguous responses to the Project.

Questions and concerns raised by the public and discussed with the CIMC are noted, along with actions taken by CPC or the Brilliant Expansion Consortium.

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1. Introduction

In December 2002, Columbia Power Corporation (CPC) received a Project Approval Certificate (PAC) from the Provincial Environmental Assessment Office, which allowed the Brilliant Expansion Project to proceed. One of the commitments identified in the PAC was for CPC to retain a Socio-Economic Monitor to “monitor, analyze and report on project-related socio-economic impacts”. Additionally, CPC was directed to form a community-based committee to support effective management of the socio-economic impacts.

In April 2003, CPC hired consultants Cathy Scott-May and John Lerner to be the Socio-Economic Monitors and formed the Community Impact Management Committee (CIMC – see Appendix 1 for list of CIMC members).

This report is the final socio-economic monitoring report produced for the Brilliant Expansion Project (the Project) and covers the period of April 1, 2003 to September 30, 2007.

1.1 Purpose and Scope of the Socio-Economic Monitoring Program

The goal of the socio-economic monitoring program is to provide an independent assessment of the measurable socio-economic impacts (both positive and negative) that can be attributed to the Brilliant Expansion Project, along with professional interpretation of anecdotal indicators, in order to:

- measure and report on impacts to support management of the Project;
- facilitate communication between community stakeholders, government agencies and CPC concerning impact management issues, and;
- document the effectiveness of efforts to minimize negative impacts and maximize project benefits to the region.

The scope of the Socio-Economic Monitoring program is determined by the monitoring requirements outlined in the PAC. It is important to note that through the environmental assessment review process, potential impacts (both positive and negative) were identified and, based on the issuance of the PAC, such impacts were accepted. Hence, the socio-economic monitoring program seeks to ensure that real impacts are consistent with the projected impacts and whether or not strategies to mitigate negative impacts are effective in ensuring such impacts remain within the projected range. Unanticipated issues or impacts that are brought to the attention of the Socio-Economic Monitor are assessed to determine if they can reasonably be assumed to have a direct relationship with the Project. If so, they are included in the formal monitoring reports.

Finally, the Socio-Economic Monitor is not responsible for First Nations concerns as CPC deals directly with First Nations representatives. Neither is the Socio-Economic Monitor responsible for water quality or quantity issues related to the Ootischenia Aquifer, as CPC has engaged a separate consultant, Piteau Associates, to monitor the aquifer. Golder Associates is conducting a separate environmental monitoring program for the Project.

1.2 Geographic Scope

The geographic scope for measurement of most impact indicators has been a 100km radius from the Brilliant Expansion Project site. Therefore, the definition of the “primary” or “local” scope of the project includes Castlegar, Nelson, Trail and all smaller communities and rural areas in that general area. In some cases, data sets from statistical sources do not align with this geographic scope, in which case the Socio-Economic Monitoring team has drawn on information that best fits the preferred geographic scale. Where the study area differs from that which has been defined as the primary scale for monitoring, the associated reports highlight the variation and potential implications.

1.3 Roles and Responsibilities of the Socio-Economic Monitor

The Socio-Economic Monitor is responsible for designing the monitoring program, including defining what information needs to be collected and how, as well as how the information will be used to report on impacts of the Project. Following review of the proposed design with CPC and the CIMC, the Socio-Economic Monitor is responsible for implementing the monitoring program, including collecting and analyzing the necessary information, writing the reports and presenting the reports to CPC and the CIMC.

The Socio-Economic Monitor also responds to questions, incidents or concerns from the public as may be required.

To ensure the socio-economic monitoring process maintains the necessary credibility within the broader community, the Socio-Economic Monitor is independent of both CPC and its committees. However, through their position as elected officials and/or community representatives, the CIMC is accountable to the community, just as CPC has a corporate responsibility to, and relationship with, those same broader interests. As a result, the Socio-Economic Monitor works co-operatively with all parties to serve the interests of the region and its communities.

2. Methodology

2.1 Data Collection

A socio-economic measurement framework was developed for monitoring the impacts of construction activities. The framework includes direct and indirect indicators, which were reviewed with the CIMC prior to initiating the socio-economic monitoring program. The indicators include:

Direct Indicators

- Project Employment
- Equity Employment
- Project Occupations
- Project Employment Income
- Regional Project Expenditures
- Medical Aid/Lost Time Injuries

Indirect Indicators

- Indirect & Induced
- Residential
- Mobile Home Occupancy
- Traffic Safety
- Outdoor Recreation

The above framework was modified slightly from that used in the first and second annual socio-economic monitoring report. Hotel Occupancy rates, Daycare Wait list rates and Population were dropped due to lack of relevancy to Project impacts. First Aid injury data was also removed from the monitoring process, instead focusing on medical aid and lost time injuries. Mobile Home Occupancy was added on the advice of the CIMC as it was considered likely to be relevant to Project activities.

With respect to data collection for the direct indicators, the employment-related information is associated with all unionized workers who are employed on-site. Therefore, management, engineering and workers employed off-site by subcontractors are not included. The latter are included under project expenditures. Management and engineering are not included in the socio-economic monitoring program as many are located outside the local area, although 30+ are employed on site. Columbia Hydro Constructors (CHC) tracks information about on-site employees on behalf of the Brilliant Expansion Consortium (BEC) and all other contractors. CPC has contracted CHC to provide the Socio-Economic Monitor with the necessary data summaries to meet the monitoring requirements outlined in the PAC. The Socio-Economic Monitor may request additional information from BEC and CPC, which they may provide at their discretion.

Data collection for the indirect indicators relies on statistical information from various government sources, informal telephone interviews and direct contact with stakeholders as well as general observation and knowledge.

2.2 Comparison with the Base Case

The framework also forms the base case, or starting point, for the monitoring program. The base case reflects the anticipated impacts (both positive and negative) identified by CPC through the planning stages for the Project that are part of the required provincial environmental assessment process. The anticipated impacts are outlined in the PAC and Skaska-Chant proposal. Additionally, the base case draws on other relevant project-related documents that outline commitments by CPC and/or BEC regarding socio-economic issues.

The indicators are compared with base case information in order to determine if the Project is conforming to established targets and to make observations as to overall performance relative to socio-economic considerations. The base case information for each indicator is as follows:

¹ Indirect employment refers to jobs generated in the region by project procurement of goods and services. Induced employment results from jobs generated by the expenditure of wages and salaries earned from the Project.

² Residential vacancy rates are defined in this case as multi-family building rental vacancies. Single detached housing and trailer home rentals are not included.

Indicator	Base Case
Employment	Total employment 400 PYs ¹ (Skanska-Chant) 85% employment of local residents (within the Columbia Basin).
Equity Employment	15% of employees to be a self-defined members of a recognized equity group – women, First Nations, disabled, visible minorities)
Project Occupations	Year to Year Number of apprenticeships as per Brilliant Collective Agreement
Employment Income	\$27 million (PAC)
Regional Contractor Expenditures	\$5-10 Million (PAC)
Medical Aid and Lost Time Injuries	Workers' Compensation Board standards
Residential Vacancy	Year to Year
Mobile Home Occupancy	Year to Year
Indirect and Induced Employment	155 PYs (PAC) ²
Traffic Safety	Commitments in Traffic Safety Plan and Communications Plan
Outdoor Recreation	Commitments in PAC and Communications Plan

2.3 Reporting

The Socio-Economic Monitoring team produced three types of reports: monthly, quarterly and annual. The monthly reports provided a snapshot in time as to the direct and indirect impacts of the Project. The quarterly reports focused on the overall trends relative to the direct and indirect indicators for the respective three-month period. The annual reports summarized the data collected for each indicator for the respective 12-month period and compared the results to the base case projections and commitments. The annual report also summarized how CPC and/or BEC responded to information received over the course of the previous year, for example

¹ Originally, the base case was to reflect the PAC Employment Schedule in terms of projected person days of employment and schedule or 450 PYs over 30 months. However, this has proven to be an inaccurate base case. Hence, employment projections from the Skanska-Chant Proposal are being used instead.

² The PAC actually sites a dollar figure of \$3 million, which can be roughly converted to PYs by dividing the figure by the region's average full-time employment income or \$19,417 (in 2001 dollars).

incidents, questions or concerns reported by the public to CPC, BEC, CIMC members and/or the Socio-Economic Monitor.

3. Summary of Project Activities and Impacts

The following report covers the socio-economic impacts of the Brilliant Expansion Project (the Project) from the period of April 1, 2003 to September 30, 2007 and represents the final socio-economic monitoring report to be developed for the Project.

3.1 Summary of Project Impacts

Direct Indicators

Total person years of employment over the course of the Project totalled 983 PYs³, which is approximately 146% above the Project target of 400 PYs. Workers from the Columbia Basin have been the primary beneficiary of the Brilliant Project, garnering 825 PYs or 84% of total employment. This figure is 1% short of the Project target of 85% for local hires.

Equity employment averaged 16% during the term of the Brilliant Project, exceeding the Project target of 15% by 1%.

Up to twenty-one different occupations participated in the Brilliant Expansion Project with the most significant occupations being Heavy Construction Labourers, Carpenters, Heavy Equipment Operators, Office and Technical Staff and Teamsters.

Employment income accrued to workers of the Brilliant Expansion Project totalled \$51,183,112, which exceeds the estimated PAC target of \$27 million by roughly 90%. Employment income among Basin workers totalled \$42,128,985, which represents approximately 82% of total Project employment income.

Total regional contractor expenditures for the Project were \$52,499,163, which is approximately 425% higher than the \$5-\$10 million target set for the Project.

The Project reported a total of 251 Medical Aid incidents over its term. Of those incidents, 51 involved lost day claims. The Project has consistently reported a lower number of claims (on average by 50%) and lower days lost per claim (on average 78% lower) than the WCB rates for heavy construction.

Indirect Indicators

The indirect and induced employment impact from the Project can be estimated to be approximately 354 PYs, which exceeds the PAC target of 155 PYs by 128%.

³ A Person Year is calculated based on a 240 day year.

The apartment vacancy rate in Castlegar appears to have shadowed the Brilliant employment cycle during the term of the Project but other economic factors in the city may have also played a role in the change of vacancy rates as well.

Mobile home occupancy by Brilliant employees or sub-contractors has been very modest and it is difficult to say if there is any correlation between employment and occupancy.

The Brilliant Expansion Project has had a positive impact on employment in the region, especially in the southwest Kootenays, but the specific influence of the Project on the unemployment rate in the Kootenay region is difficult to verify. The size of the Brilliant Expansion Project workforce is small relative to the total Kootenay workforce (on average 0.36%) and so its impact on the unemployment rate is likely small.

Throughout Year 4, CPC and BEC addressed traffic safety and outdoor recreation issues as they arose. The incidents and responses are discussed in detail in sections 4.11 through 4.13, along with other community questions and concerns identified by the public and brought to the attention of the Socio-Economic Monitor by CPC or members of the CIMC.

4. Detailed Project Impacts

4.1 Project Employment

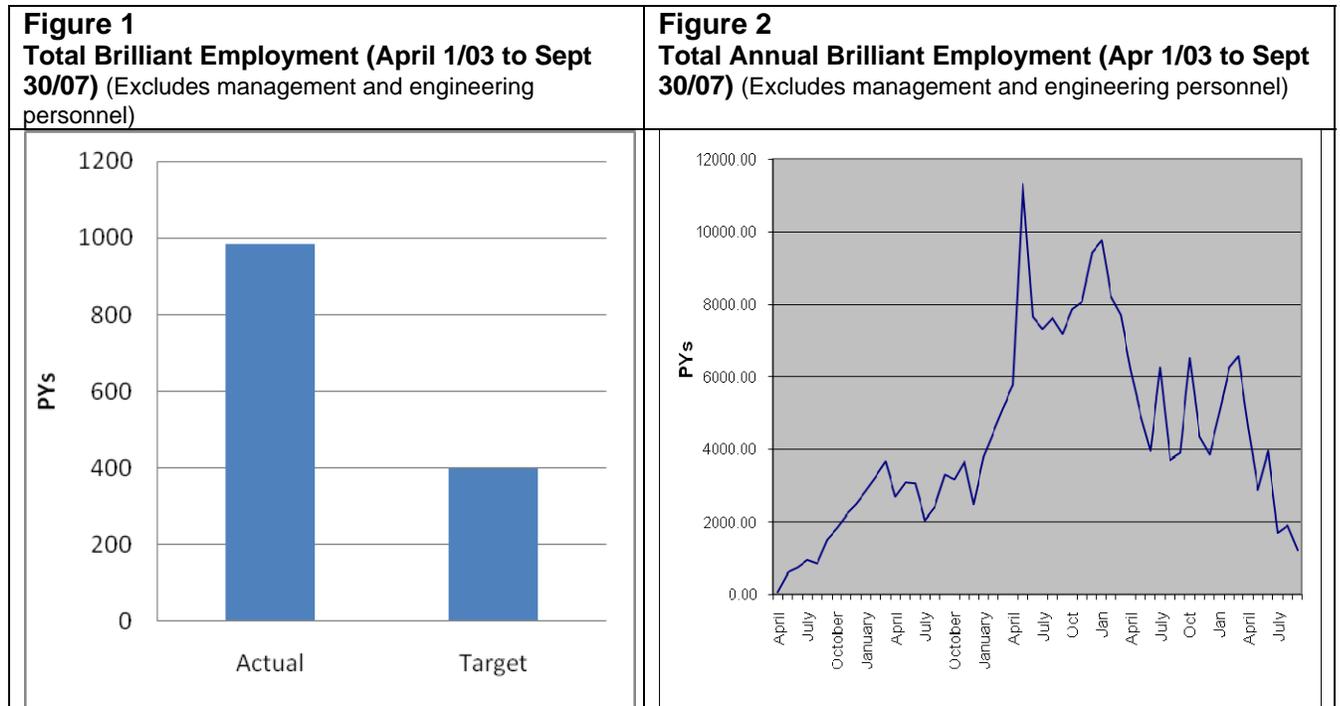
The employment and wage income projections contained in the PAC related to the initial design proposed by CPC when the first application for a PAC was submitted to the EAO. Having received the original PAC, CPC then accepted the proposal from Skanska-Chant, which involved a different design and included reduced employment targets from 450 person years of employment, as outlined in the original PAC, to 400 person years. The 11% reduction in projected employment was not reflected in the revised PAC that CPC applied for and received in December 2002. The overall project employment target of 400 person years was not broken out by months or years and so is only useful for comparing overall employment for the full term of the Project.

Actual employment over the course of 4.5 years of the Brilliant Expansion project totalled 983 person years⁴, which is 146% above the Project target (400 PYs) (Figure 1). During the Project employment grew steadily from 2003 to 2005, peaking in last two quarters of fiscal 2005, and declined gradually thereafter (Figure 2)⁵.

The Brilliant Expansion Project represents only a small portion of the employment in the region, with its share of the region's total employment ranging from 0.244% in 2003 to 0.449% in 2005 and then 0.383% in 2006.

⁴ This does not include the employment of management and engineering staff or employees of sub-contractors. A Person Year is calculated based on a 240 day year.

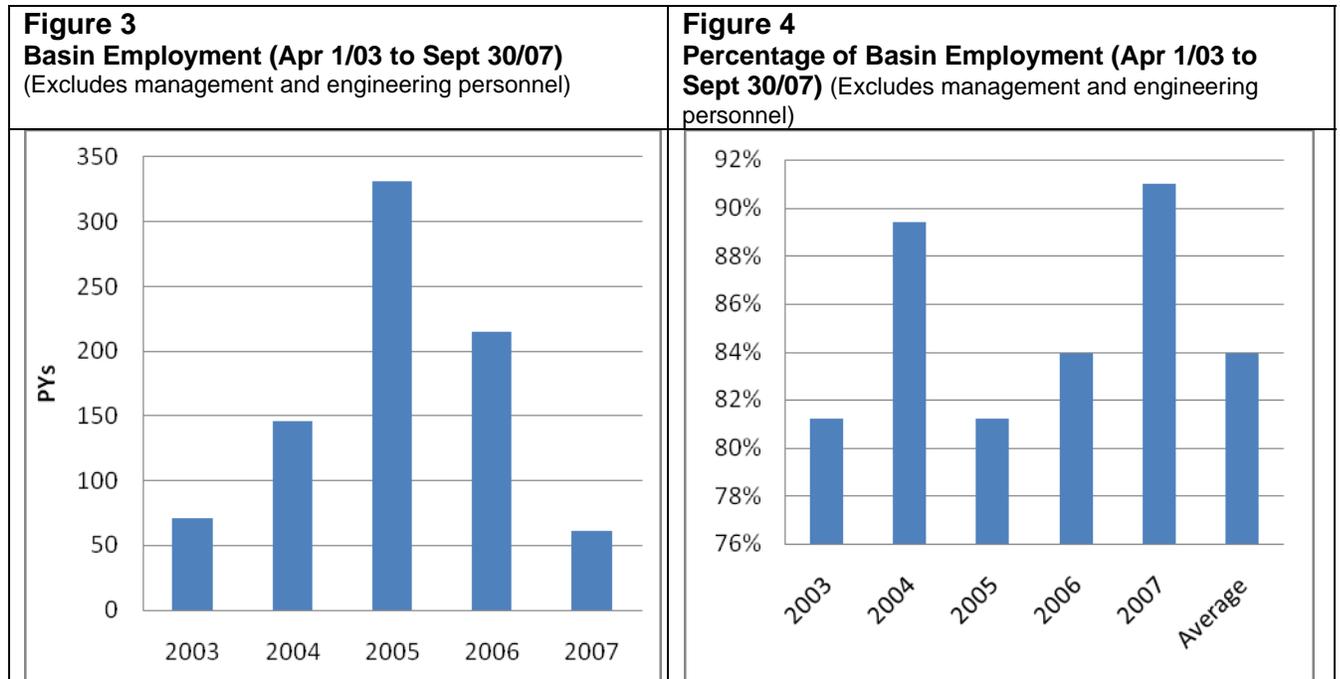
⁵ May and December 2005 and January 2006 show dramatic spiking, which due to these months having three pay periods rather than 2 pay periods.



Source: Columbia Hydro Constructors, 2007

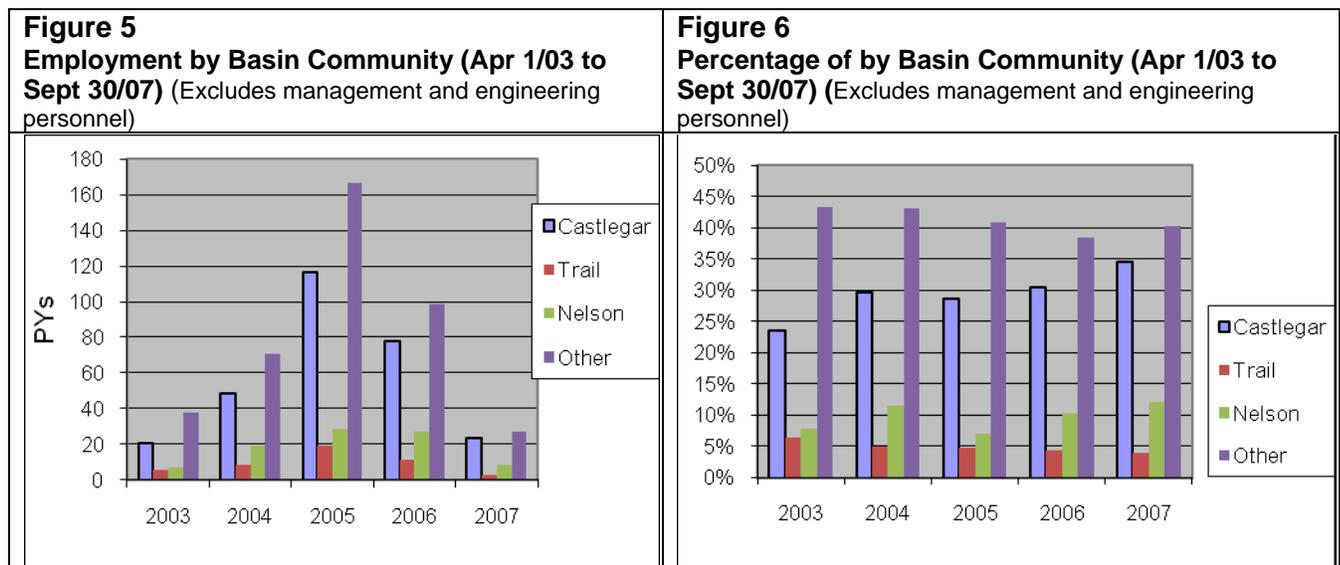
Workers from the Columbia Basin have been the primary beneficiaries of the Brilliant Project, garnering 825 PYs of employment from 2003 to 2007, peaking at 331 PYs in 2005 (Figure 3). Over the course of the Project the percentage of Basin workers employed has varied but on average has represented approximately 84% of the total Project employment. This figure is 1% short of the Project target of 85%, although the target was met or exceeded in 2004, 2006 and 2007 (Figure 4)⁶.

⁶ It might be noted that this number does not include management or engineering PYs of the Project. It also excludes any employees hired by sub-contractors. If PYs for these workers were included into the local hire statistics, the percentage of Basin PYs would likely have been much higher.



Source: Columbia Hydro Constructors, 2007

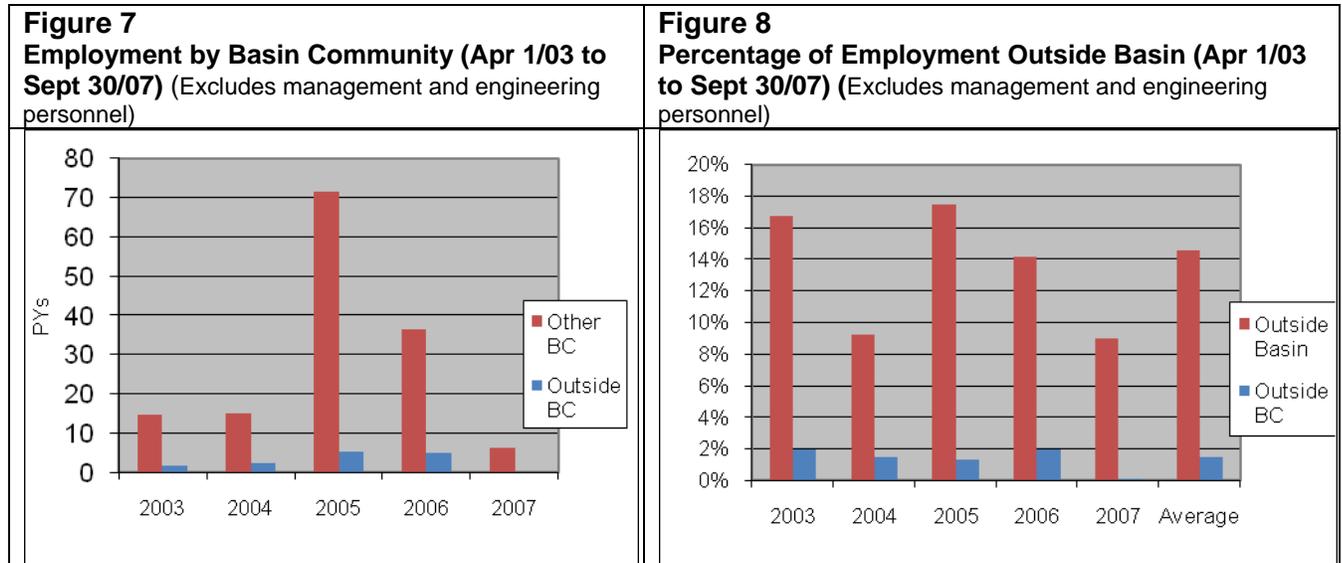
Within the Basin, workers from rural communities in the southwest Kootenays (Other Communities) garnered the highest amount of employment (400 PYs or 41%), followed by Castlegar (287 PYs or 29%), Nelson (90 PYs or 9%) and Trail (48 PYs or 5%). These total employment levels were distributed fairly consistently over the Project term. Person years rose steadily to 2005 and then declined gradually thereafter (Figures 5) with the proportions of employment among the communities remaining fairly stable (Figure 6).



Source: Columbia Hydro Constructors, 2007

Workers from outside the Basin have also benefited from the Project but to a lesser degree. Those from outside the Basin but within BC have worked a total of 143 PYs or 15% of total

employment, peaking and declining annually in tandem with workers from the Basin (Figure 7). Workers from outside BC garnered a total of 14 PYs, averaging approximately 1% of the total employment (Figure 8).



Source: Columbia Hydro Constructors, 2007

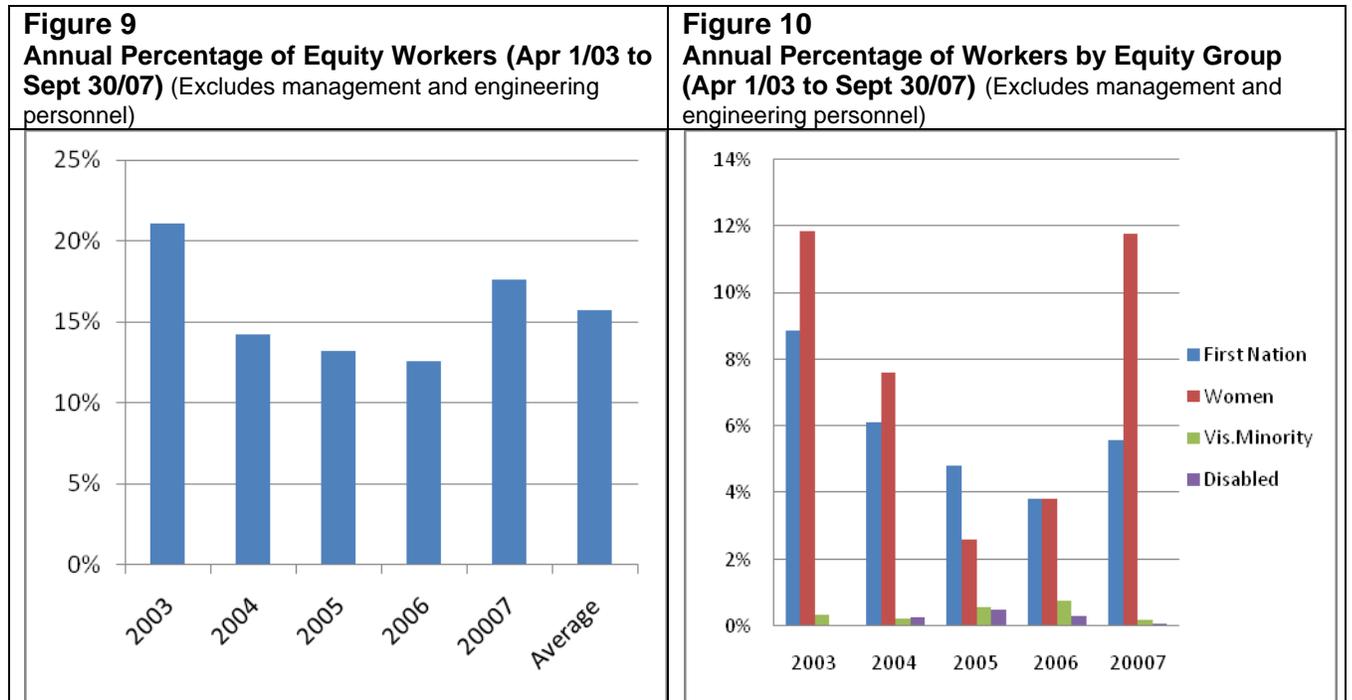
4.2 Equity Employment

Equity employment has averaged 16% during the term of the Brilliant Project, which exceeds the Project target of 15%⁷ (Figure 9). The highest rate of equity employment occurred in 2003 at 21% and the lowest rate in 2006 at 12.6%.

There were no targets established for the equity sub-groups but they were tracked nonetheless during the monitoring process. Female employment averaged 8%, peaking at 12% in 2003 and 2007 and dropping to a low of 3% in 2005 (Figure 10). First Nations employment averaged 6% during the Project, again peaking at 9% in 2003 and bottoming at 4% in 2006.⁸ The rate of employment of self-designated Visible Minorities and Disabled workers has averaged 0.4% and 0.2% of the workforce respectively.

⁷ Equity employment is calculated based on actual number of employees, not person days of employment, because of how CHC produces the employment data summaries. Because these figures are employees and not PYs, it should be noted that these figures are approximations.

⁸ The rate of First Nation employment is actually higher than stated, since female First Nations are counted only as “female workers” so as not to double count workers. If female First Nations are counted as First Nations in general, the First Nations employment rate increases by 3 to 4 percent.



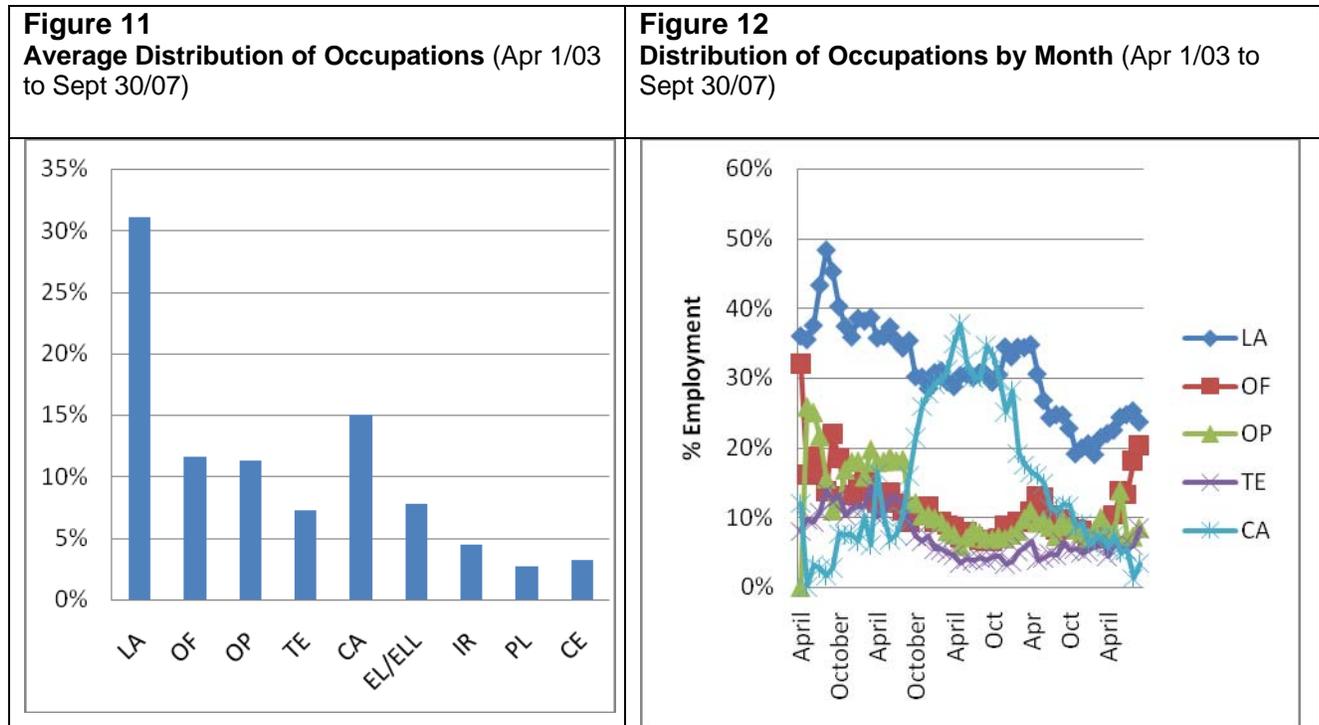
Source: Columbia Hydro Constructors, 2007

4.3 Occupations

Up to twenty-one different occupations participated in the Brilliant Expansion Project over 4.5 years. There were no targets for these occupations but key trades during the Project included Heavy Construction Labourers, Carpenters, Heavy Equipment Operators, Office and Technical Staff and Teamsters (Figure 11).

As can be viewed in Figure 12, Heavy Construction Labourers have occupied a large proportion of workforce throughout the Project (as high as 48%) but have slowly declined since August 2003. Carpenters have also represented a large proportion of the workforce (as high as 38%) but primarily during the mid-term of the Project. The proportion of Heavy Equipment Operators, Office and Technical Staff and Teamsters started at between 10% and 30% of the workforce, dropped below 10% at the mid-term and then began to increase during the Fall of 2006.

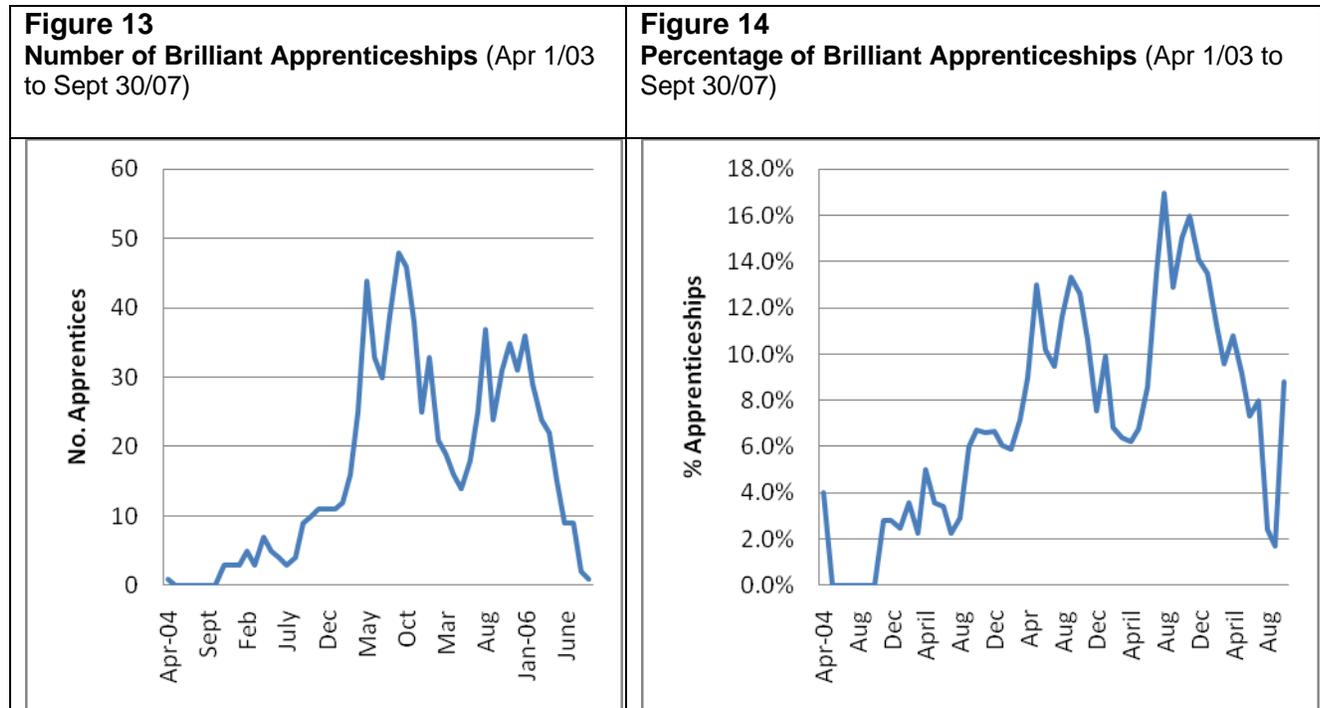
Other notable trades active in the Project included Ironworkers, Cement Masons, Pipefitters, Boilermakers and Carpenter-Millwrights.



LA – Heavy Construction Labourers, OF – Office and Technical Workers, OP – Heavy Equipment Operators, EL/ELL – Electrical Workers, CA – Carpenters, TE – Teamsters.
 Source: Columbia Hydro Constructors, 2007

The Brilliant Master Agreement outlined various formulas for guiding the hiring of apprentice tradespersons. For the most part, these guidelines were followed, if not exceeded, especially with regard to carpenters, cement masons and millwrights. One notable exception was with regard to Heavy Equipment Operator apprentices. No hiring of these apprentices was reported during the Project. Another exception has been with regard to Cement Masons, wherein more apprentices were hired than was mandated due a shortage of journeypersons.

In general, the Project hired an average of 16 apprentices per month. The number was relatively small at the beginning of the Project but ramped up quickly and peaked at 48 during the Fall of 2005 (Figure 13). The percentage of apprenticeships relative to the total workforce, peaked during the Fall of 2006 (Figure 14).



Source: Columbia Hydro Constructors 2007

4.4 Project Employment Income

Employment income during the Brilliant Expansion Project totalled \$51,183,112⁹, which exceeds the estimated PAC target of \$27 million by roughly 90%. The total Project wage bill constitutes about 0.36% of the total Basin employment income over the 4.5 years.

Year to year, employment income echoes the Project employment trend, beginning at \$500,000 in 2003, growing to \$21,572,587 in 2005 and then dropping to \$3,618,185 by the Fall of 2007 (Figure 13). Month to month, this trend looks similar, although marked increases in the Spring of 2005 and Winter of 2006 look slightly distorted due to pay period agglomeration differences (Figure 14).¹⁰

⁹ This does not include employment income for management and engineering staff or subcontractor staff.

¹⁰ May and December 2005 and January 2006 show dramatic spiking, which due to these months having three pay periods rather than 2 pay periods.

Figure 15
Annual Employment Income (Apr 1/03 to Sep 30/07) (Excludes management and engineering salaries)

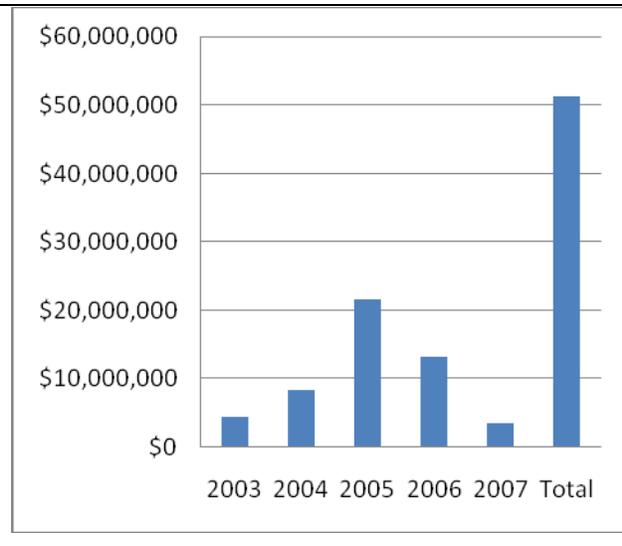
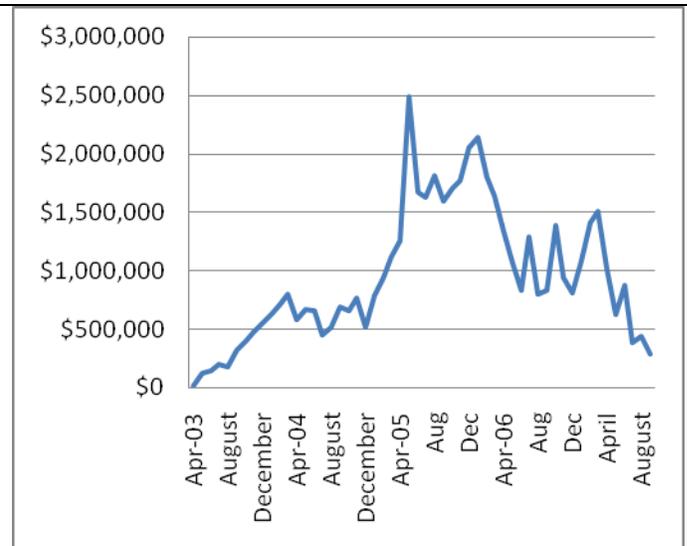


Figure 16
Employment Income by Month (Apr 1/03 to Sep 30/07) (Excludes management and engineering salaries)



Source: Columbia Hydro Constructors 2007

Employment income over the term of the Project from workers originating in the Columbia Basin region totaled \$42,128,985 (Figure 17), representing 82.3% of total employment income (Figure 18).

Figure 17
Basin Annual Employment Income (Apr 1/03 to Sep 30/07) (Excludes management and engineering salaries)

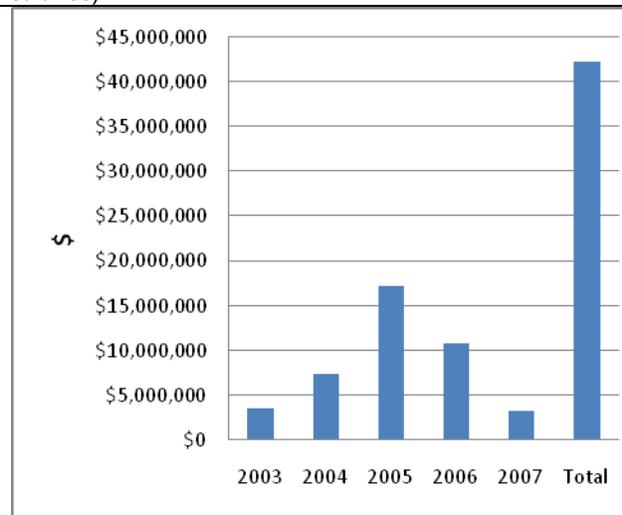
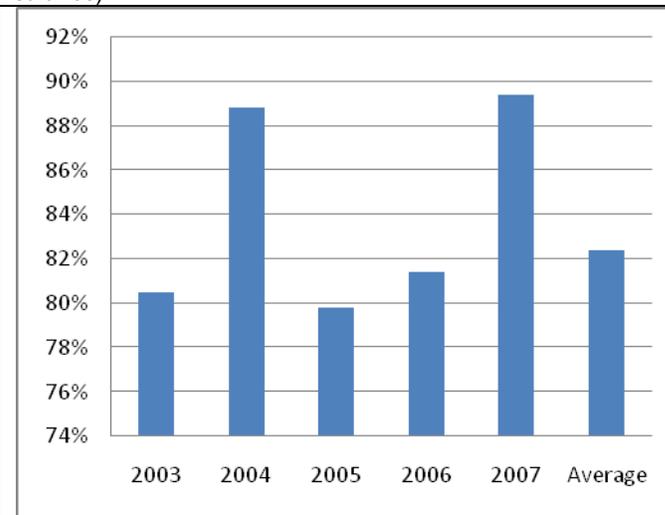


Figure 18
Percentage of Basin Employment Income (Apr 1/03 to Sep 30/07) (Excludes management and engineering salaries)

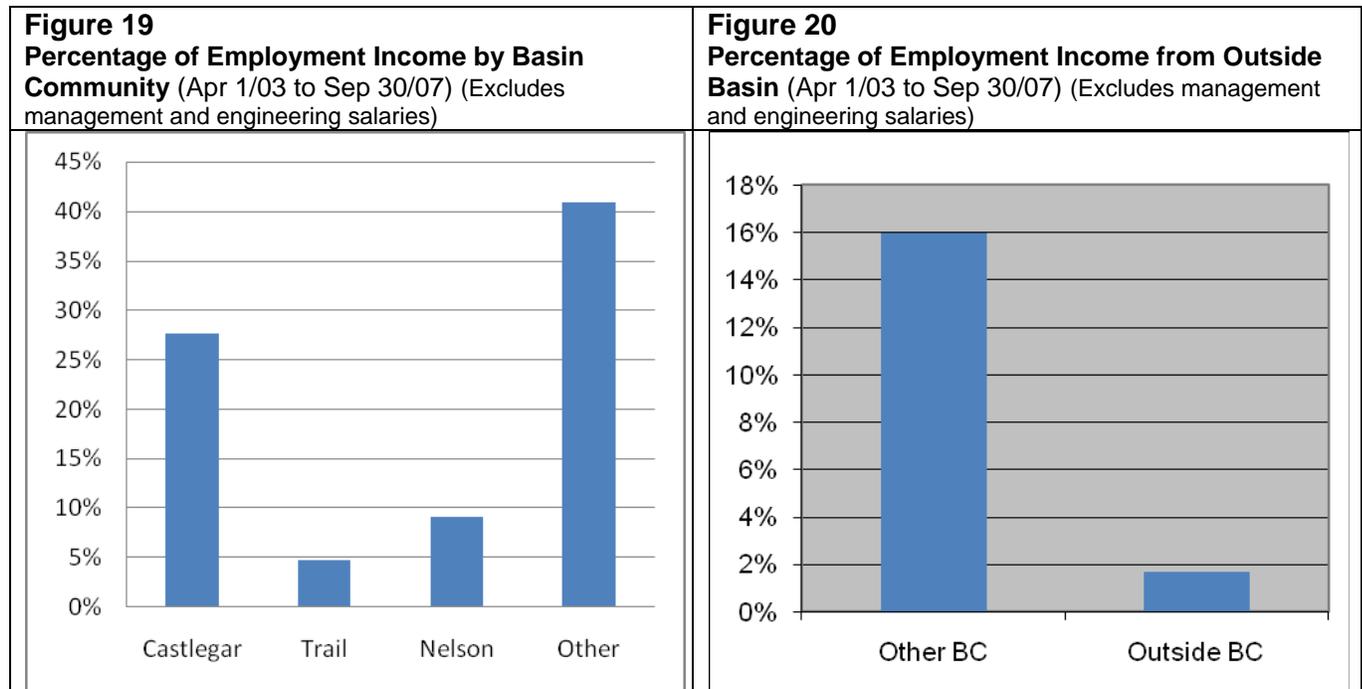


Source: Columbia Hydro Constructors, 2007 and 2001 Census

Within the Basin, workers from the rural communities in the southwest Kootenays (Other Communities) benefited most significantly over the Project term, averaging 41% of total Project employment income (Figure 19).

Castlegar workers represented the second highest wage group for the Project, averaging 28% of total employment income. Nelson employment income averaged 9% of total Project employment and Trail averaged 5% (Figure 19).

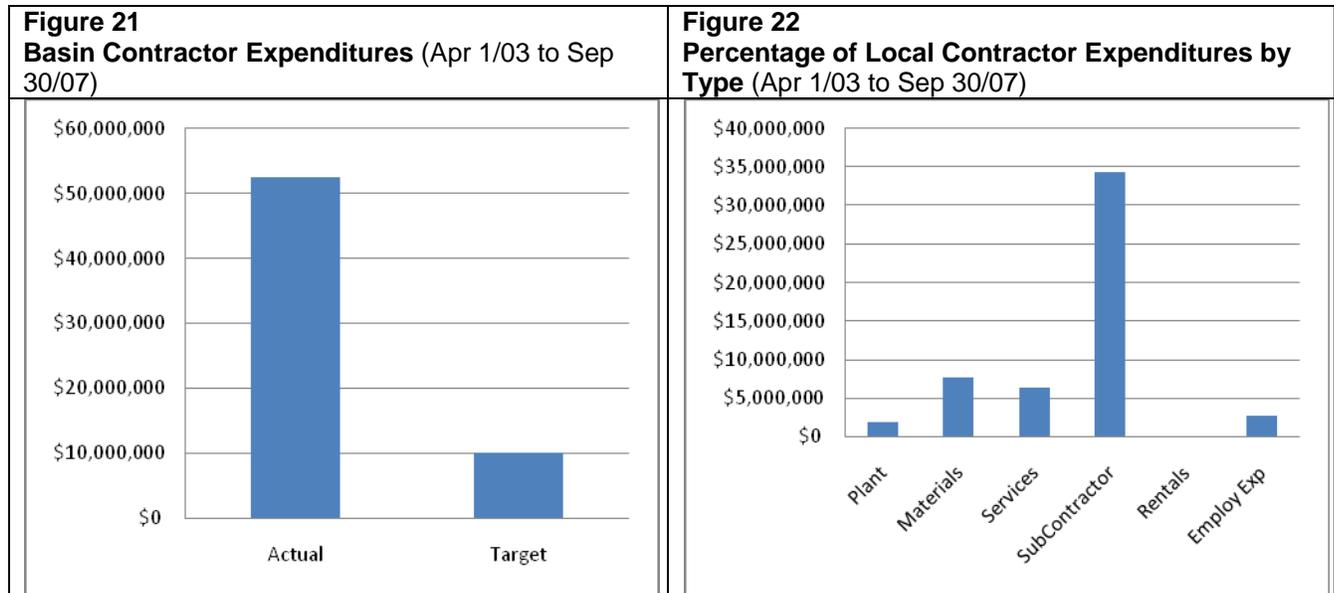
Employment income from other regions in BC averaged 16% of total employment income, with workers outside of the province averaging 2% (Figure 20).



Source: Columbia Hydro Constructors 2007

4.5 Regional Contractor Expenditures

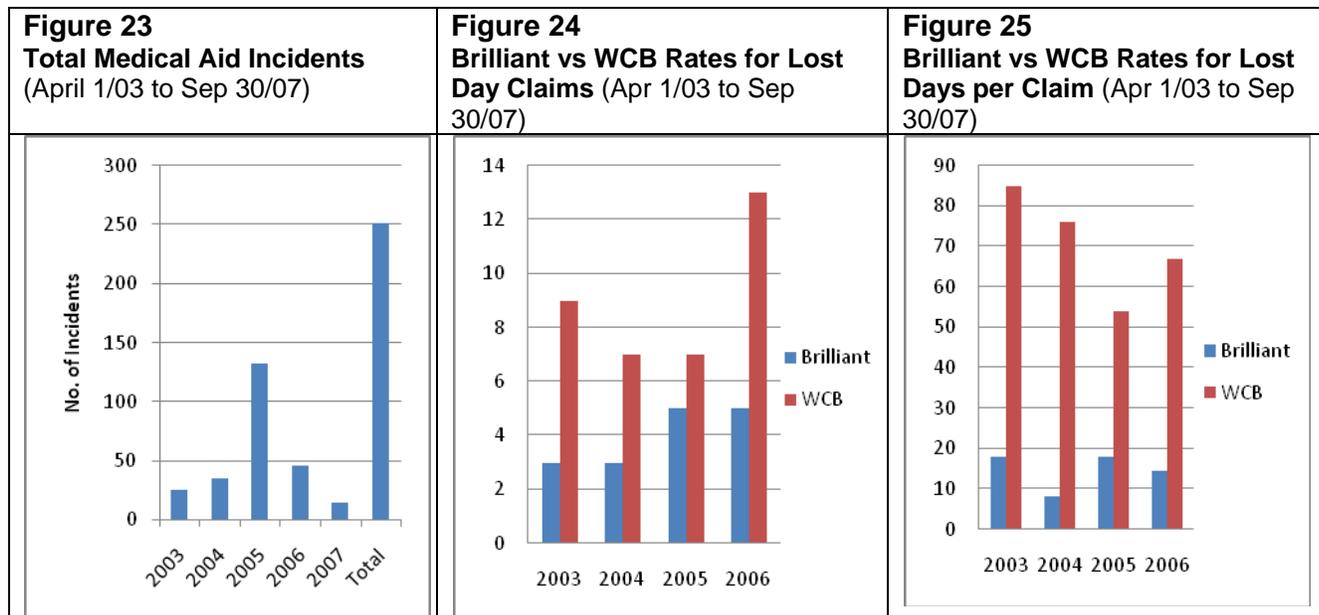
Total local contractor expenditures to date for the Project are \$52,499,163, which exceeds the target expenditures, which was \$5-10 million (Figure 21). The largest expenditure over the term of the Project was Sub-contractor Services at \$34,330,267 or 65% of the total regional expenditures. Materials expenditures ranked second at \$7,659,058 or 15% of total expenditures and general Services ranked third at 6,268,738 or 12%. Employment Expenditures ranked fourth at \$2,659,826 or 5% total expenditures, followed by Plant expenditures at 1,900,677 (4%) and lastly by rental expenditures at \$24,484 (0.05%) (Figure 22).



Source: Skanska International 2007

4.6 Medical Aid Reporting

The Project reported a total of 251 Medical Aid incidents over its term, of which 51 incidents resulted in Lost Time claims (Figure 23). As is evidenced in Figure 23, the heaviest year for incidents was 2005, which was also the year with the highest person years of employment.



Source: Skanska International, 2007 and WCB 2006

No targets were set for the maximum number of claims for the Project. Rather, the WCB benchmarks for lost day claims due to injury and number of lost days per claim have been used as the baseline. As is illustrated in Figure 24, the Brilliant Project reported annual lost day claims well below the WCB rates for heavy construction (on average 53% lower). The Project

rate for the annual number of lost days per claim was also consistently lower than the WCB rate (on average 78% lower) (Figure 25).

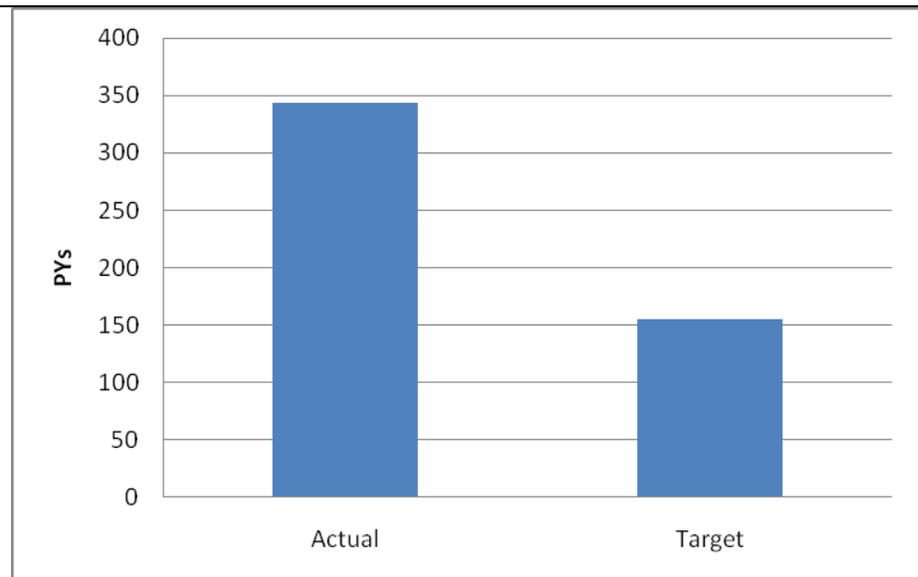
4.7 Induced and Indirect Employment

Indirect employment refers to jobs generated in the region by project procurement of goods and services. Induced employment results from jobs generated by the expenditure of wages and salaries earned from the Project.

There are no indirect and induced employment targets for the Project but there are direct employment targets (400 PYs), which imply indirect and induced employment or roughly 140 PYs.

Actual indirect employment derived from the Project in the region can be estimated at 253 additional PYs of employment (Figure 26). The induced employment generated from the Project can be estimated at 101 additional PYs. Together actual indirect and induced employment from the Brilliant Project constitute 354 PYs or roughly 153% greater than the implied target of 140 PYs (Figure 26).

Figure 26
Brilliant Indirect and Induced Employment (Apr 1/03 to Sep 30/07)



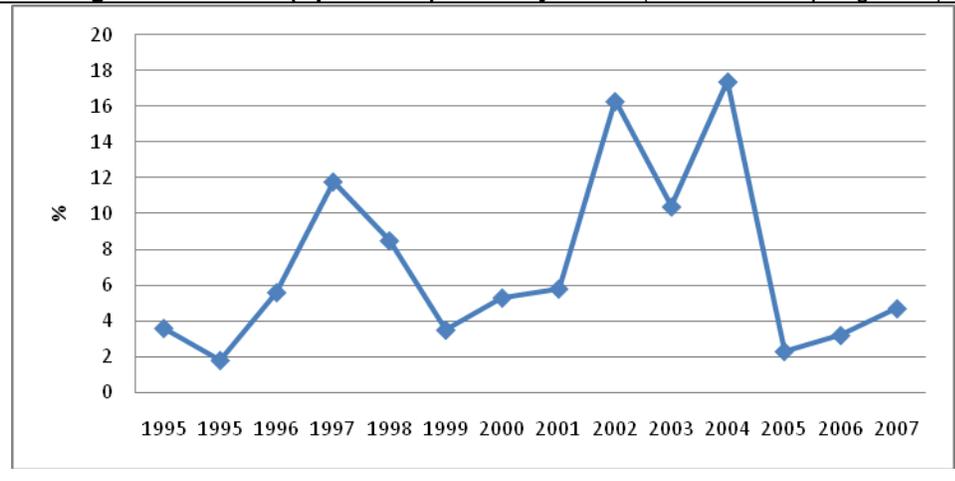
Source: Skanska International 2007 and BCStats 2006

Additionally, the socio-economic monitoring program does not include management or engineering positions or Project sub-contractors in its PY calculations. If these positions were included, they would indicate higher indirect and induced impacts in the local communities.

4.8 Residential Vacancy

The apartment vacancy rate in Castlegar may be said to have shadowed the Brilliant employment cycle to some extent with a dramatic drop in vacancy rates in 2004 coinciding with a surge of employment from 2004 and 2005 and then a slow increase in rates with gradual decline in employment beginning 2006 and 2007 (Figure 27). However, it must be kept in mind that Castlegar is susceptible to major shifts in the vacancy rates with only a decline of a dozen or so units, since there are relatively few rental units available. So other economic factors, in addition to the Brilliant Expansion Project, may also have played a role in the change in vacancy rates.

Figure 27
Castlegar Residential (Apartment) Vacancy Rates (Oct 1995 to Spring 2007)

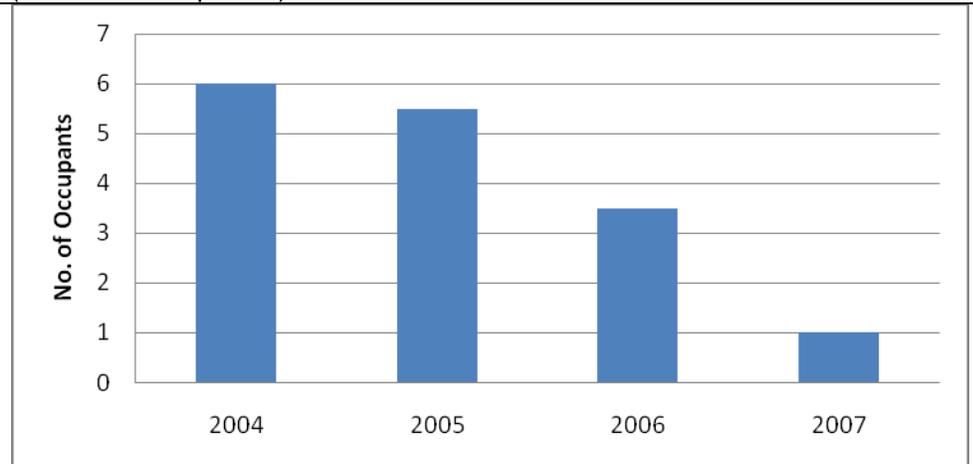


Source: CMHC 2007

4.9 Mobile Home Occupancy

Mobile home occupancy by Brilliant employees or contractors has been modest since this indicator has been monitored (April 2005). Average occupancy peaked at 6 employees in 2004 but has declined consistently since then to an average of 1 employee in 2007. Although this trend in occupancy to some extent reflects the Brilliant employment trend at the time, the numbers of are so small that it is difficult to say if there is any statistical significance (Figure 28).

Figure 28
Number of CHC Workers Renting Mobile Home Units in Castlegar
 (Jan 2004 to Sep 2007)



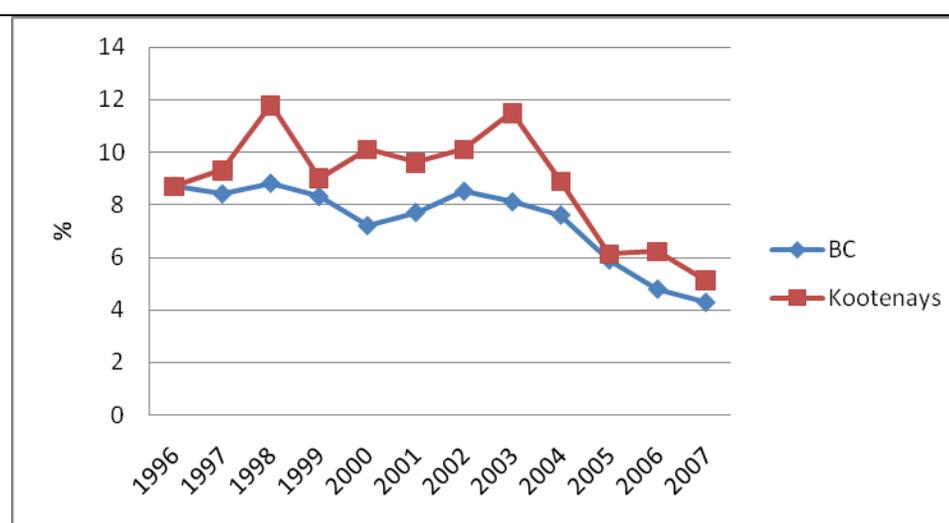
Source: Telephone survey, by JLerner + Associates 2007

4.10 Unemployment Rate

The unemployment rate of the Kootenay-Boundary region averaged 5.1% in the first two quarters of 2007, which continues the downward trend from previous years and echoes the same trend in the Province in general (Figure 29).

Although, the Brilliant Expansion Project has had a positive impact on employment in the region, especially in the southwest Kootenays, the specific influence of the Project on the unemployment rate in the Kootenay region is difficult to verify. The size of the Brilliant Expansion Project workforce is small relative to the total Kootenay workforce (0.36%), hence its impact is also likely small.

Figure 29
Unemployment Rates, BC and Kootenay-Boundary (April 1/04 to Sep 30/07)



Source: BCStats, 2007.

4.11 Traffic Safety

In accordance with requirements in the PAC, BEC developed a traffic safety management plan that outlined its commitments for addressing impacts of the Project on Highway #3. The plan was developed in consultation with the Ministry of Transportation and Highways (MOT). The socio-economic monitoring program is not involved in BEC commitments that relate to MOT standards or other aspects that MOT would define and monitor. Rather, the two main traffic safety commitments that have been at the focus of the socio-economic monitoring program include:

- the no-left turn policy from Highway #3 for accessing the site. Regular vehicle traffic seeking to enter the Project site was to use the newly created turn around by the Rosedale park-and-ride so they could re-enter Highway #3 going eastbound, thus making a right hand turn to enter the site. The turn around area was created by BEC to more easily facilitate this requirement of the Traffic Safety Management Plan. MOT required that the upgrade to the turn-around be permanent. Larger truck traffic was to use the weigh station beyond the airport as a turn around, and;
- all employees are to park on-site.

For the most part, the plan was effectively implemented. However, over the course of the Project construction there were periodic incidents where employees and/or suppliers did not comply with the traffic management plan. In response, BEC asked the First Aid Attendant, who was parked near the turn-in from the highway during the early part of the Project activities, to monitor the no-left turn policy. Additionally, the Socio-Economic Monitor contracted Selkirk College students on two occasions to monitor both the no-left turn policy as well as the requirement for employees to park on-site.

Information about infractions was brought to the attention of the CIMC and BEC's Site Safety Manager. BEC addressed the infractions through direct communication with its employees and suppliers to ensure the requirements outlined in the plan were both understood and complied with, as well as including written information along with employee's paycheques. BEC also posted a sign on Highway #3 to alert truck drivers of the requirements to use the weigh station as a turn around area. As the Project involved ongoing hiring and contracting, there was constant need for education and communication regarding the Traffic Safety Management Plan. Infractions of the traffic safety management plan continued to be reported over most of the course of Project construction, although there was a decrease in the number and significance of issues raised during the CIMC meetings towards the end of the Project activities.

An additional traffic safety concern was associated with the public stopping to view the construction from Highway #3. The existing pullout alongside the Highway was considered to be insufficient to deal with the potential public interest in viewing the construction of the Project. Therefore, CPC applied and received approval for development of a viewpoint beyond Verigin's Tomb, above the existing viewpoint. Signage was installed on the highway to direct the public to the upper viewing area. At the time of Project completion, CPC notified the CPC of its intention to remove the garbage cans and picnic tables from the upper viewing area. If following these actions any continued use of the area proved to be an issue, such as garbage being left at the site, then MOT indicated they would close access beyond Verigin's Tomb.

A second public viewing area was constructed alongside Highway #3, which involved an expansion of the then existing pull-out along the highway. Safety concerns were raised regarding vehicles entering and exiting from the viewing area adjacent to Highway 3. As a result, the RCMP used radar to assess the speed of drivers along the stretch of highway adjacent to the viewing

area. It was found that people are frequently exceeding the speed limit in that area. The RCMP recommended changes, such as better signage and again raised the issue of reducing the speed in the vicinity of the Project to improve safety. MOT continued to reject the idea of reducing the highway speed along that section.

CPC chose to construct a safer entrance to the Project offices located on the right bank, which was deemed to be of long-term benefit for those accessing the original Brilliant Dam. In order to increase overall safety, the CIMC supported BEC's request to MOT to designate an appropriate section of Highway #3 as a construction corridor with a reduced speed of 70 km/hour. However, MOT rejected the request. A near head-on collision was reported at the turn-off into the north end of the site. CIMC member Staff Sgt. Dave Fayle of the RCMP contacted the Nelson detachment to discuss the near collision. The Nelson RCMP had already identified the section of Highway #3 from Shoreacres to the Kootenay Bridge as a focus due to high traffic. The traffic volumes were reviewed. It was determined that the volume of traffic during the 6 AM shift changes was insufficient to warrant enhanced enforcement so they instead focused on the afternoon shift change. During the summer of 2006, 24 enforcement actions were taken between the rest stop and viewing area. The area continued to be identified as a target area for RCMP enhanced enforcement.

4.12 Outdoor Recreation

Skattebo Trail

A portion of the Skattebo Trail was temporarily closed due to the Brilliant Expansion Project construction activities, as was anticipated during the development of the project design. However, due to the increased amount of rock talus that had to be excavated for construction of the access road, unanticipated permanent impacts to the original location of the Skattebo Trail occurred. Additionally, a segment of the trail below the access road was impacted from slides, which was also not anticipated.

Responsibility for trail reconstruction lay with BEC. CPC held discussions with local stakeholders to evaluate options for addressing the unanticipated impacts. Additionally, questions were raised by the public regarding recreational facilities associated with the new start of the Skattebo Reach Trail. CPC worked with the local Friends of Parks and Trails to address the issues (e.g. although CPC had originally planned to install a garbage container, the Friends have advised against it preferring instead to encourage people to pack out what garbage they pack in).

Part way through the course of construction, BEC reported a need to expand the pile of rock in MOT's quarry, which resulted in the area being filled in with rock crossing the Skattebo Trail. BEC consulted Friends of Parks and Trails as well as the Ministry of Environment regarding a small spring in the fill area and also did a wildlife tree assessment to identify any concerns about trees that would need to be removed. As a result of the change to the rock quarry, BEC's site restoration plan was revised and presented to the CIMC for information.

CPC and BEC received a letter from the Friends of Parks and Trails stating that the Friends were pleased with the newly re-routed and constructed portion of the Skattebo Reach trail. In response to a question from a CIMC member regarding gating of the trail, CPC stated that a public safety plan for the Project site would be developed to address how to manage people and safety issues in the whole area (e.g. up above the Project, along the trail).

At the time of completion of the socio-economic monitoring program, the Skattebo Reach Trail had not yet been reopened as it depends on the level of activity in the MOT quarry, when BEC will be finished paving the road and when CPC's overall safety plan for the site as a whole will be finalized.

Fishing and Kayaking Downstream of the Brilliant Dam

Temporary impacts to recreational use of the Kootenay River were also anticipated during the design of the Project. There have been restrictions on access to the river for kayaking and fishing due to blasting and other construction activities. Signage at the site was used to communicate the fishing closures. In addition to signage, BEC stated they maintained communication with local kayakers to maintain safe opportunities for use of the river when appropriate and ensure closures as were necessary.

There is a particular feature called the "Brilliant hole" in the Kootenay River downstream of the Brilliant dam that kayakers would like to remain either unchanged or improved. At optimum water levels, this section of the Kootenay River contains features that are considered to be world class for white water paddling. As a result, local kayakers frequently use it and competitions are sometimes held there. During freshet when that section of the river is high, the Brilliant hole "disappears" and then "reappears" when water levels decrease. The local kayaking interests were concerned that the Brilliant Expansion Project might negatively impact the Brilliant hole or other features in that section of the Kootenay River. CPC conducted modelling to forecast the effects of the Expansion Project on water flows and features in the river. Based on the modelling, CPC was confident that the Brilliant hole and other white water paddling features will remain unaffected. Representatives of the local kayaking club were shown the model.

Additionally, the kayaking club pursued discussions with CPC to determine if additional features could be created by strategically placing large rocks into the river above the Brilliant hole in ways that would either be neutral or beneficial to the fisheries. A commitment in the PAC stated that the design of rock groin structures to be installed in the lower Kootenay River would incorporate considerations for use by anglers and kayakers. At the time of completion of the socio-economic monitoring program, no further information was available on the outcomes of this exploration.

Other Recreational Impacts

There have been no apparent impacts (positive or negative) on local recreation facilities from the Project. No noticeable impacts from the Project were reported with respect to public recreation facilities, for example the Castlegar swimming pool and Pass Creek campground.

4.13 Other Community Concerns

The following is an overview of public questions or concerns that were discussed with the CIMC and Socio-Economic Monitor.

Visual Impacts of the Road

While the visual impact of the road is larger than anticipated and has been commented on by a few local residents, the associated activities meet the requirements outlined in the PAC and

CPC is not required to compensate for visual impacts. The slopes were hydroseeded and replanted.

Ootischenia Aquifer

Although CPC has engaged a separate consultant to monitor water quality and quantity concerns associated with the Ootischenia Aquifer, some discussion on these issues took place during CIMC meetings.

A community member asked if the seepage coming out in the vicinity of the Project's access road is coming from the Ootischenia Aquifer. CPC had their consultants, Piteau Associates, investigate. That report indicated that the water seeping in the vicinity of the Project did not result from Project activities. CPC then contracted Piteau Associates to check the water chemistry of the water seeping from the banks and compare it to that found in the Ootischenia Aquifer. As a result, it has been confirmed that the water seeping out from the bank does not originate from the Aquifer. CPC sent a copy of the Piteau report to the Ootischenia Improvement District.

Consultation with the Public

The Area J Advisory Committee asked for a meeting to discuss the Project and what they felt to be inadequate consultation about the changes to the original proposed design of the Project. A representative of CPC met with the Committee and outlined the various consultation efforts that were pursued during both the initial phase (for the original Project design) as well as the follow-up consultation regarding the proposed changes. The Socio-Economic Monitor did not take any follow-up action as a perceived or real lack of public consultation is not considered an impact of the Project. However, the Socio-Economic Monitor sent the Committee a letter explaining that if the community identifies specific impacts that they feel resulted due to a lack of consultation, those impacts will be investigated.

Rock Crushing On-Site

Due to the associated noise and concerns about opportunities for local private businesses to provide rock for the Project, the issue of rock crushing or aggregate processing was discussed at CIMC meetings on a number of occasions. The PAC stipulated that there was to be no rock crushing on site. However, rock that was originally to be placed in the headpond upriver of the existing Brilliant Dam was instead placed in a former MOT quarry located on-site as this was deemed a better use of the rock. To make use of the rock, MOT brought in a rock crusher. Given MOT's use of a crusher on-site, CPC then applied for a change to the PAC to enable sub-contractors to crush rock on-site for use by the Project as well as for other uses. On December 4, 2003 the Environment Assessment Office gave approval for crushing rock on site.

Potential Damage to Private Property from Blasting

A local resident suggested that blasting had caused damage to their daughter's trailer at the Kootenay Campground. CPC and BEC visited the site. Although CPC did not feel that blasting was the cause of the issue, CPC agreed to pay for levelling the trailer but made it clear they did so without prejudice. A blasting monitor was placed on site, which recorded no seismic activity in the area. CPC engaged an independent building inspector to thoroughly assess the situation who determined that blasting from the Project was not the cause of the situation. Subsequently, other concerns have been raised by other tenants or trailer owners in the same facility. BEC

again placed a blasting monitor on site and engaged an independent building inspector to assess the situation. CPC undertook direct contact with the homeowners to explain the actions that were taken.

As complaints about noise from blasting were received from residents at the nearby trailer court, efforts were made to conduct the remaining loud surface blasts during daylight hours.

Sewage and Waste Disposal

A question was raised regarding sewage at the parking lot near Settlement Springs. Initially, porta-potties were used. It was noted that the long-term solution was for facilities to be installed for all kinds of garbage. All water was treated via an approved treatment plant. A secondary containment area was used to ensure nothing would go to the Settlement Springs area. Once treated, the water went into the river through a pipe so it would not in any way interfere with domestic water sources.

Road Closures

CPC received a complaint from students at Selkirk College who were inconvenienced by a road closure due to blasting. It was also noted that road closures had made it stressful for some passengers to make their flight on time. The CIMC discussed options for notifying Selkirk College, Celgar and Pope & Talbot about road closures, in addition to the existing notification list. Given that the blast schedule was not predictable and that future blasts were not anticipated to result in road closures, it was agreed that if a closure was required, Selkirk College, Celgar and Pope & Talbot would be notified as well.

New Viewing Area and Project Information Centre

The Brilliant Expansion Project Information Centre, which was located in the viewing area alongside Highway #3, operated during some of the summer months during Project construction. Traffic safety concerns were identified in association with the information centre (see section 4.11).

Another issue arose when a person standing in the new viewing area reported that rock came up into the viewing area following a blast at the project site. BEC investigated and found that the rock resulted from a small blast in the mouth of the tunnel. Insufficient care was taken and, as a result, the blast directed the rock out from the tunnel. This was an error by the people doing the blasting. A report was completed by BEC. As well, an independent blasting consultant did a report. A written warning was given to the blaster and different methods were then employed. Both BEC's Safety Manager and CPC staff contacted the complainant to discuss the situation.

Dust

A local resident felt that there had been an increase of dust as a result of trucks turning around at the Rosedale Park and Ride. While MOT owns the turn around area, CPC and BEC felt that the situation was a result of traffic associated with the Project and, therefore, BEC applied dust control substances to the shoulder. BEC eventually put down asphalt on the shoulder of the turn around.

A complaint was also received as a result of dust from the rock crushing operation. The dust was reduced when a larger tank of water was brought in to support dust suppression. The crushing has now been completed.

Concern Regarding Settlement Spring

Materials, including pipes, which had been located above Settlement Spring and were identified as a concern by the community were subsequently removed. There was also a vehicle parked in the spring's catchment area that was noted and immediately removed.

Use of Rock

A CIMC member asked why rock material from the Brilliant Expansion Project was not being used for the Arrow Lakes Generating Station (ALGS) channel repairs as the selected supply was felt to have increased traffic on Columbia Road. CPC responded that planning for the permanent repairs to the channel at ALGS had been ongoing for five months. When the final decision was made as to how to undertake the construction, CPC looked at the Brilliant material. However, the material could not be crushed on site at that point because BEC needed to store components for the Brilliant Project so there wasn't enough room to undertake the crushing. BEC looked at storing the components elsewhere but decided that it was not a realistic solution. Additionally, people expressed concerns regarding the resultant dust that crushing generates. It was noted that it is very expensive to move uncrushed rock off of the Brilliant site and to have it crushed at a different location. Therefore, it was decided that the best option was to purchase material from Kabatoffs with Selkirk Paving Ltd. doing the crushing. As insurance companies will be paying for the channel repairs, they require CPC to seek the best price, hence it was not a decision that only CPC and Kiewit's could make.

Slocan River Rainbow Trout Enhancement Projects

As part of its commitments regarding the Brilliant Expansion Project, CPC funded Slocan River Rainbow Trout enhancement projects. The Slocan River Rainbow Trout Enhancement program involved two components: riparian restoration with funding available to landowners and the installation of structures to provide shelter and protection for fish. The first phase structures were deemed to be a success so planning proceeded to identify locations for additional structures. Residents were consulted regarding potential locations for the additional structures. CPC met with landowners to determine if there was interest in moving forward with the second phase before going to the public and having meetings with government agency representatives. It was decided to delay the second phase of the project to allow for another year of study.

Brilliant Runner from the Original Dam

CPC constructed a pad to hold the runner from the original Brilliant dam for display at the Brilliant rest area off of Highway #3. Signage was installed that explains the history of the runner. A CIMC member noted that during the public consultations for the Brilliant Expansion Project, residents of Glade pointed out that a worker died during construction of the original dam. Glade residents expressed disappointment that there is no public commemoration of this. It was suggested that this could be included in the signage being created for the old runner. CPC responded that they would consider this.

Power Sales

CPC reported that 40% of the power to be produced from the Brilliant Expansion Project was sold to BC Hydro prior to commencement of the Project. Subsequently, an additional 50% of the power was sold to BC Hydro under a 20 year contract. The remaining 10% will be sold on the spot market, which likely involves a higher return although less security. CPC stated that it is

important to hold back this 10% because, at that point, CPC was not sure how much hydroelectric power will actually be produced through the Project.

Glade Boat Ramp

During consultations prior to initiation of the Brilliant Expansion Project, residents of Glade expressed concern about the impacts of fluctuating water levels and the impact to the use of existing boat ramp in the community. As a result, CPC met with residents from Glade to discuss their interest in construction of an improved boat ramp. The Socio-Economic Monitor raised a question about the possible need for archaeological work prior to the construction, which CPC took into consideration. At the time of completion of the socio-economic monitoring program, CPC was proceeding with its planning for the construction of an improved boat ramp in Glade.

Appendix 1 Members of the Community Impact Management Committee

Niklas Emilson, Brilliant Expansion Consortium, Administration Manager

Fred Bojey, Resident

Lawrence Chernoff, Mayor, City of Castlegar

Staff Sgt. Dave Fayle, RCMP

Dale Flodell, Resident

Paul Moorhouse, Resident Engineer, Klohn Crippen Acres

Barb Chapman, Alternate for Paul Moorhouse

Mike O'Connor, Resident

Wally Penner, Vic President, Community Partnerships, Columbia Basin Trust

Larry Reibin, Resident

Audrey Repin, Director, Communications & Community Relations, Columbia Power Corporation

Cathy Scott-May, Socio-Economic Monitor

John Voykin, Director for Area I, RDCK

Gordon Zaitsoff, Director for Area J, RDCK

Jim Zwick, Resident