FINAL REPORT

Summary Socio-Economic Monitoring Report

Arrow Lakes Generating Station Project

Prepared for Columbia Power Corporation

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We would like to acknowledge the help provided by our research assistant Owen Morris throughout the entire socio-economic monitoring project and the cooperation of regional residents, Columbia Power Corporation and Peter Kiewit Sons Ltd.

1.0 Overview

This is the final report for the socio-economic monitoring process that was initiated in 1999 for the Arrow Lakes Generation Project (formerly called the Keenleyside 170 MW Powerplant Project). The Arrow Lakes Generation Project (referred to hereafter as 'the project") was undertaken by Columbia Power Corporation, in conjunction with its joint venture partner, Columbia Basin Trust. The project consists of a two-turbine powerplant, constructed downstream of the existing Hugh Keenleyside Dam, an approach channel bypassing the dam, a tailrace conducting flow back to the river, and a 230 kV transmission line. The 48 kilometre transmission line, which will be operated by BC Hydro, is required to transmit power from the project to the BC Hydro Selkirk Substation, located just north of the Seven Mile Dam on the Pend d'Oreille River. Other components of the project included construction of a powerhouse access road, a new dam access road, a weather station, and a warehouse to replace former facilities removed by the construction of the tailrace channel. A third part of the project was the realignment of a short section of the Broadwater Road near the construction site.

Potential socio-economic impacts associated with the project were identified in the project approval phase, as part of the environmental approval process. The major impacts, anticipated at the time the assessment was completed, included the creation of local employment and income, traffic and public safety concerns, and impacts on outdoor recreation. Population, housing and community services were not expected to be significantly affected due to the plan to hire workers, insofar as possible, from within the region, thereby reducing the number of in-migrating workers and their families.

In April 1998 Columbia Power Corporation (CPC) was issued a Project Approval Certificate for the project. As a condition of approval, the British Columbia Minister of Energy attached several requirements relevant to potential socio-

economic impacts. These included the three recommendations summarized below:

#22 CPC must submit a Socio-Economic Monitoring Program for review and written approval by the City of Castlegar, the Regional District of Central Kootenay and the Regional District of Kootenay Boundary prior to the start of project construction;

#23 CPC must establish prior to construction a Community Impact Monitoring Committee (CIMC) comprising representatives from the City of Castlegar, the Regional Districts of Central Kootenay and Kootenay Boundary and others, as agreed by these initial members, to resolve socio-economic issues arising from the project;

#24 CPC must retain a Socio-Economic Monitor to oversee the monitoring program and liaise with the CIMC and other community members.

In December 1998, CPC retained the services of McDaniels Research Ltd. (in association with Eberle Planning & Research) to prepare and implement a monitoring plan and Richard Coffey, a local area resident and consultant, to provide the services of a socio-economic monitor. A monitoring plan was prepared and subsequently approved by the City of Castlegar and the Regional Districts of Central Kootenay and Kootenay Boundary.

Three specific monitoring objectives were identified in the plan.[1] They included the following:

- to facilitate communication between community stakeholders, agencies, and Columbia Power Corporation concerning ongoing impact management issues;
- to conduct ongoing measurement of and reporting on the actual regional socio-economic impacts of the project's construction and operation in order to facilitate ongoing impact management;

[1] McDaniels Research Ltd. and Eberle Planning & Research. *Socio-Economic Monitoring Program Keenleyside 170 MW Powerplant Project*. February 1999.

- to document the effectiveness of the proponent's efforts to minimize adverse impacts and to maximize benefits to the region.

The monitoring plan was intended to provide a guide to the process of monitoring, emphasizing consistency and transparency. The plan not only included the practical steps involved in identifying and managing impacts, but was also designed to build trust among the project proponent, the contractor and the residents of the region who could be affected by the project. The plan also served to link the key players in the monitoring process, namely Columbia Power Corporation, the Community Impact Management Committee and the Socio-Economic Monitor.

The Community Impact Management Committee (CIMC) was established in December 1998. The committee's role was outlined in its Terms of Reference: "In accordance with Columbia Power Corporation's commitment to prevent, decrease and resolve anticipated and unanticipated community impact issues, the purpose of the committee is to act as " a sounding board" and as advisors to Columbia Power Corporation. The committee may be asked to provide advice, suggestions or recommendations to assist in the timely management and resolution of impacts." [2] The committee initially comprised twelve community members (including representation from the Regional Districts and City of Castlegar), a representative from the project contractor, Peter Kiewit Sons Co. Ltd. and from Columbia Power Corporation. There were some changes in membership as the project proceeded. The committee met monthly at first, though not in the summer months, but the frequency of meetings decreased as the project neared completion.

One of the members of the CIMC was the Socio-Economic Impact Monitor. The role of the monitor was to act as a liaison between the public and the proponent,

[2] Keenleyside Powerplant Project Community Impact Management Committee Terms of Reference, December 1998.

to follow up any concerns expressed by community members and to facilitate the resolution of such concerns. These were then reported to the CIMC in its regular meetings. The public was able to report project-related issues to the monitor by means of postal box, by email or by telephone.

2.0 Economic Impacts

2.1 Overall Impacts on the Local Economy

The powerplant project was built in an economic context of slowing growth following 1997, the base year. The year 2001 was a difficult year for forestry, one of the region's primary industries due to a poor lumber market, rising utility costs and the pine beetle infestation. More recently, the area has been affected by the anti-dumping tariffs on lumber operations imposed by the US. World events also affected local businesses, particularly in the tourism sector. Reduced employment in the health and government sectors due government policy changes, increased traffic at area foodbanks due to changes in BC Benefits, and school closures as school districts sought to reduce costs and balance budgets were other factors that affected the local economy.

Construction activity in the Central Kootenay was slow in 2002 compared to 2001, although building activity in Castlegar increased relative to 2001. Construction of the 4th generator at the Seven Mile Dam is well underway and scheduled to be complete early in 2003. The Brilliant Expansion has received approval under the Environmental Assessment Act.

The unemployment rate for the Kootenay Development Region has fluctuated since the base year (in 1997 it was 9.3%; in 1998, 11.8%; and, in 2000, 9.6%) but now remains fairly steady at just under 10%. Construction industry work-ready claims for employment insurance have increased since the base year, but have been fairly stable since 1998. Business incorporations were fairly constant

from 1997-2000, followed by a sharp decline of almost 25% in 2001 reflecting generally worsening economic conditions.

Although no statistics are available, local area service businesses such as restaurants and retail stores appear to have experienced an increase in volume due to the project, particularly in the early stages of the work. Representatives of the business community viewed the overall project as an asset to the area.[3]

2.2 Employment

Predicted Impacts

After the contract was awarded using a design-build approach, a revised economic impact analysis was completed to account for a new project configuration. The revised economic impact assessment of the project estimated that it would create about 690 worker-years of direct construction employment (local and non-local workers), with approximately 70% of the construction workforce or about 490 people hired from within 100 km of the site. An additional 65 worker-years or $2.3 million was expected to be generated due to indirect local expenditures by workers and procurement spending. The total local economic effect of the project was estimated at approximately 600 worker-years of employment generating an increase in local income of approximately $33 million.

Type of impact	Local employment (workeryears)	Local income	Share of local employment
Direct	483	$29.5m	70%
Indirect	65	$2.3m	100%
Induced	44	$1m	100%
Total	592	$32.8m	

Source: Eberle Planning and Research. 1999. Updated Economic Impact Assessment Proposed Keenleyside 170MW Powerplant Project.

[3] Personal communication Castlegar Chamber of Commerce, Oct 21, 2002.

Overall, the project was not anticipated to have a significant impact on the local economy, representing approximately a 1 to 1.5% increase in employment and income regionally.

Actual Impacts

According to Columbia Hydro Constructor (CHC) figures, to September 2002 the project created a total of 483.9 person-years of direct employment, including the road relocation work in 1998 and 1999. This matches the forecast in the updated project economic impact assessment that was completed as part of the baseline profile for the monitoring plan.[4] Non-CHC employment (Kiewit Sons staff and managers and other contractors) totalled 70 positions.

The project was successful in generating work for local area residents. This was due to two factors: the Columbia Hydro Constructors agreement that gives hiring preference to both union and non-union workers living within a 100 km radius of a project site; and, the large number of Columbia Basin residents who had appropriate job skills and were available to work. On average, local Columbia Hydro Constructors workers represented 70% of the project workforce; however, in peak activity periods these local workers represented 80% to 85% of the total workforce. In general, there were few difficulties meeting project labour needs with local tradespeople; the only exceptions were trades with a very limited number of local members (for example, crane operators) and trades that were in very high demand due to major projects outside the region (SkyTrain project in the Lower Mainland). A number of training and apprenticeship positions were available during construction; some apprentices were able to become licensed as journeymen as a result of project employment.[5] First Nations apprentices were among those who benefitted. Construction at the Seven Mile Powerplant and

[4] McDaniels Research Ltd. and Eberle Planning & Research. *Phase I Summary Report. Keenleyside 170 MW Powerplant Project*. April 1999.

[5] Personal communication with Lee-Ann Van Horne, CHC. October 2002.

planned work at Brilliant will create more opportunities in the region for apprentices.

It was estimated that employment benefits would be distributed roughly evenly between the three largest communities and surrounding towns; however, Castlegar was the home of about 25% of project workers, roughly 10% were from Nelson, 6% from Trail and another 30% from other Columbia Basin communities. (Twenty seven percent of workers were residents of other BC communities and 3% were from elsewhere in Canada.)[6] Clearly, as it was intended to do, the project created significant employment benefits in the immediate region.

Equity Employment

Equity employment for under-represented groups including First Nations members, women, disabled or minority group individuals was a provision of the collective agreement for the project. In order to facilitate First Nations hiring, CPC included in its contract with Kiewit a requirement that the company hire a First Nations Coordinator. The Coordinator's responsibilities were later expanded to promote hiring of other equity group members and to develop an apprenticeship training program. An exact accounting of the number of equity hires is difficult for two reasons: 1) new hires were encouraged to indicate on a form whether they belonged to an equity group but there was no way of tracking this, and 2) double counting may have occurred as a result of an individual claiming membership in two groups (say a female from a visible minority group). The final figures available from CHC indicate that over the course of construction the following new equity hires were made: 78 members of First Nations; 40 women; 31 members of visible minorities; and, 4 disabled persons. Equity hires represented a maximum of 14% of total hires.

This total suggests that the equity hire program was successful. Most of the First Nations people hired to work on the project were from the Shuswap Nation and

[6] Figures derived from Columbia Hydro Construcotrs data, 2002.

the Lower Columbia River All First Nation and they live within the "local hire" area (within 100 km of the project site). The other First Nations groups who were identified as potential beneficiaries of the project (namely the Okanagan and the Ktunaxa/Kinbasket Tribal Council) had few members hired and there was some dissatisfaction about this situation. Some tradeswomen in the region likewise felt that they should have benefitted from equity hire. Certainly a number of fully qualified women did obtain work on the project. The responsibility for maintaining equity representation on the site was assumed by CHC after the First Nation Coordinator's contract expired in March 2001.

Transmission Line Employment

Another component of the project that created employment opportunities was the construction of a 48 km transmission line to link the powerplant project to BC Hydro's Selkirk Substation. Project design, construction and management were jointly handled by CPC and BC Hydro. Separate figures for transmission-related jobs are not available but were included in CHC totals. Several local companies obtained contracts, including First Nations clearing crews and a First Nations operated nursery that raises native plants.

2.3 Income

Predicted Impacts

The updated impact assessment estimated that a total of $29.5 million would be paid in wages and salaries to project workers under the "high local hire" scenario (i.e. local workers representing 70% of the total).

The purchase of local supplies and materials for a major construction project such as this one results in additional employment income effects called indirect impacts. Local impacts are a function of the amount of project purchasing that occurs within the regional economy and regional value added (the extent to which the region captures economic benefits). The contract between CPC and Kiewit specified that the latter would agree to meet a target of $15 million worth

of expenditures in the Columbia Basin region. It was estimated that roughly $2.3 million of this total would remain in the local economy in the form of wages and salaries.

Actual Impacts

The latest available report on wages (March 2002) indicates that a total of $29.3 million was spent on wages of CHC workers; the total for salaries paid to non-CHC workers is not available. (One can assume that these salaries also made a contribution to regional income because most of the salaried workers (i.e. Kiewit staff and managers) lived in the community for the duration of the construction period.)

The local expenditures target was achieved by December 2000; the latest figures available from Kiewit in March 2002 indicated that when the project was 98.9% complete, a total of $25.6 million had been spent in the Columbia Basin. Some 65% of this total was spent in Castlegar, 12% in Trail, 9% in Nelson and 12% in other Columbia Basin communities. The remaining 2% of "local" expenditures occurred in Kelowna, Cranbrook and Revelstoke. Over half of the purchases made by Kiewit within the region were for supplies and subcontractors. Other large expenditure categories included equipment repairs, food and lodging and fuel and oil. Local area suppliers and contractors were direct beneficiaries of the project.

3.0 Traffic

Predicted Impacts

The main traffic impacts associated with the project were expected to be noise, dust, congestion and possible safety hazards along the Robson-Broadwater Road; increased traffic congestion on Columbia Avenue; and, the inconvenience of closing the public access road over the dam. In response to these concerns and others, Peter Kiewit Sons Co. Ltd. completed a Traffic Management Plan for

the project early in 1999. [7] This plan included several strategies to manage traffic, such as special signage and speed zones, the installation of an on-site concrete plant, limited traffic disruptions and others. The plan also specified that worker traffic would travel along Arrow Lakes Drive, not the Robson/Broadwater Road. Commercial truck traffic was allowed to use the Broadwater route, under certain stipulations. The road across the dam was to be closed during construction.

Actual Impacts

It is difficult to evaluate project-related traffic impacts other than those issues raised by members of the public. There were no baseline traffic surveys available for the area. The Ministry of Transportation and Highways (MoTH) did conduct two surveys in the summer of 1999 at different points on Broadwater Road. Although these surveys represented a snapshot of traffic patterns at a given time, not for a range of time periods, it was interesting to note that cars and pickups represented over 95% of the traffic. The increased volumes of truck traffic that were anticipated as a result of project construction did not make a significant impact. Additional data from MoTH showed that there was a steady increase in volumes of traffic on Broadwater Road between 1997 and 2000; this increase cannot be attributed to the project.

A number of projects were implemented to address traffic safety concerns. MoTH made some changes in the vicinity of the construction zone, reducing speed limits and creating no passing zones. A turnaround was created for the school bus, to reduce dangers for young children along Broadwater Road. Although records of traffic incidents could not be tracked in the vicinity of the project site, no increase in violations or accidents were associated with the project, according to the local RCMP.

[7] Peter Kiewit Sons Co. Ltd. *Traffic Management Plan Keenleyside Powerplant Project.* January 1999.

During the construction period, there were some complaints about project-related traffic registered by Broadwater Road residents. About five of these complaints concerned project sub-contractors' speeding and loose loads. Kiewit and CPC responded promptly to these problems. Unauthorized use of Broadwater Road by project workers was an ongoing issue. This was largely solved when the Community Impact Management Committee recommended that workers resident along this route be allowed to travel directly to the site, instead of backtracking to the Robson-Castlegar Bridge and along Arrow Lakes Drive.

The impact of the project on the condition of the Robson-Broadwater Road was also an issue of concern. Peter Kiewit Sons conducted a survey of the road at the outset of project construction. The company also agreed to conduct a post-project evaluation; however, all parties realized that it would be very difficult, if not impossible, to assess wear and tear specifically attributable to the project. Kiewit therefore suggested that dollars that would have been spent on a consultant's report instead be spent on road improvements. The Ministry of Transportation and Highways and CPC agreed to this arrangement. [8]

4.0 Recreation

Predicted Impacts

The 1997 impact assessment noted that the most significant recreation impact of the proposed project would be caused by the permanent closure of the area known as "Driftwood Beach," an unofficial recreation area located upstream of the dam and used mainly by locals. It was anticipated that the Driftwood Beach closure could displace recreational use to Syringa Creek Provincial Park for the duration of the project, potentially exacerbating crowded conditions there on summer holiday weekends. Other local facilities such as Pass Creek Park could also experience overcrowding. The study also noted that shore angling at the rock promontory 400 metres downstream of the dam could be affected by the construction phase of the project but would continue unaffected during

powerhouse operation. The study also noted that users of the Castlegar Rifle Range could be affected by minor traffic-related impacts during the construction phase of the project.

Actual Impacts

Overall, impacts on local recreation resources or activities were not significant. Visitation at Syringa Creek Provincial Park decreased considerably from the baseline year in 1997. Low water levels in the reservoir and cold and wet weather have had a far greater effect on park usage than any activities related to the project. The number of camper nights at the local Pass Creek Park almost doubled between 1997 and 1999, due to improved facilities; CPC and Kiewit made major contributions to these changes. However, visitation fell again by 2001, likely due to poor summer weather.

Two recreational user groups could have been affected by the project: fishers and members of the local rod and gun club. Project construction forced a small number of local fishers to move downstream from their usual sites. However every effort was made to accommodate their needs during the course of the project and few complaints were voiced. The Castlegar Rifle Range is located close to the project site so activities there could have been disrupted by construction. However, members stated that there was no inconvenience and that they were grateful to Kiewit for the improvements completed at the site.

5.0 Other Impacts

5.1 Population

Predicted Impacts

The population impacts of the project on the study area were predicted to be small due to the relatively small project size, the availability of a skilled local workforce, and the local hire provisions of the Columbia Hydro Constructors agreement. While all local workers would not necessarily be from the Castlegar

[8] Personal communication with Dwayne Neufeld, MoTH, Grand Forks. October 2002.

area, it was expected that they would be hired from within 100 kms of the site and commute to the site on a daily basis. Most of the population increase would be temporary and attributable to the in-migration of managers and other site staff. Estimates of population increase due to the project prepared in 1997 were based on construction labour estimates. The report estimated that project related in-migration would result in an average population increase in the Castlegar area of between 10 to 120 (including family members.) persons over the course of construction.

Actual impacts

The project resulted in very few workers moving to the area permanently due to the high rate of local people hired on the project. Given the migration trends since the project began, there has been no net population effect in Castlegar attributable to the project. Population in the Castlegar Local Health Area in 2001 was 13,863, an increase of 204 persons since 1997 or 1.5% since 1997. Each year saw a small increase in population, with the exception of 2001 when population declined 0.1%. Out-migration has played a role in these population figures since 1997/8. Net migration to the region peaked in 1991/2 and has been declining since then. In 1999/00 the last year for which figures are available there was a net out-migration of 329 persons.

5.2 Housing

Predicted Impacts

It was predicted that the large majority of the construction workforce would live in the region and therefore not require temporary or permanent housing in the project area during the construction phase of the project. On an annual average basis, between 5 and 95 households were expected to move to the region and require housing. They would comprise both single person households and family households, with the majority being single person households. During quarterly peak periods (summer), more households would seek temporary

accommodation. It was anticipated that the fewer than 100 KPP 150 in-migrant households would experience no difficulty finding suitable housing accommodation. The predictive impact study anticipated no inflationary pressure on local house prices or rental rates due to the project.

Actual Impacts

Given the fact that the majority of the project workforce lived within the region, the project had little effect on the local rental or ownership housing market. Rental vacancy rates in Castlegar for apartment buildings with more than three units declined since the base year from almost 12% in 1997 to 6% in 2001. The lowest vacancy rate since 1997 occurred in 1999, when it stood at approximately 4%.[9] This may have been related to the housing needs of the project's in-migrating workers. Although the decline in vacancy rates may have been influenced by the project, this has not resulted in a tight rental market typical of a "boom" economy.

Based on an informal survey of hotels in the Castlegar area conducted for the socio-economic monitoring program, it appears that the temporary housing needs of project workers did not create a situation of overcrowding in area hotels. The concern was that construction workers might drive out tourist and business travelers. Summer vacancy rates in the past three years have been relatively consistent with typical summer vacancy rates.

Trailer and mobile home sites and sales were monitored as part of the Socio-economic Monitoring Program. Since the data was collected there have been very few vacant mobile home pads in the area. The availability of RV sites has fluctuated, usually in relation to the seasons. At any rate, although project workers did make use of this housing option, RV sites have usually been

[9] Note that a vacancy rate of less that 5% reflects a fairly tight rental market in a small regional center such as Castlegar.

available somewhere throughout the project area, within a short period of time, therefore not adversely affecting others.

5.3 Community Facilities and Services

Predicted Impacts

Impacts on community services such as schools, daycare, emergency services, health care, and community recreation facilities were expected to be insignificant. In particular, "school and daycare facilities have adequate capacity to accommodate the small increase in demand"[10] generated by the in-migrating construction workers and their families. It was expected that caseloads of social service agencies could increase modestly.

Actual Impacts

Local area schools have not been faced with increasing enrolment attributable to the project. In fact, school enrollment has declined every year since project construction commenced. In both 2001 and 2002, as in other years, actual enrolment was lower than that predicted by the School Board. Although population in the area has increased slightly, school enrollment in District 20 has been declining, suggesting that school enrolment has been responding to other societal trends or factors in the period since 1997.

The project may have affected the demand for childcare in the Castlegar area as more local residents gained employment on the project and required daycare. Local daycare agencies reported an increase in demand for daycare, which they attributed to the project. This was not anticipated in the predictive socio-economic impact assessment. Fortunately, new daycare spaces, mostly in home facilities, were developed over the past few years to meet these needs. For most of the period since the project commenced, there were no waiting lists for childcare with the exception of those families requiring special needs daycare

[10] Eberle Planning & Research. 1997. *Proposed Keenleyside 150MW Powerplant Project Socio-economic Impact Assessment.* Columbia Power Corporation

and daycare for shift work. There have been some recent closures of daycare facilities in Castlegar; these are attributed to provincial budget cuts.

Admissions to the public skating and swimming facilities operated by the Castlegar and District Recreation Commission were monitored throughout the project construction period. For the most part, these facilities experienced modest increases or a decline in attendance in each year since 1997 for an overall decline. The project did not result in any adverse impacts such as over-crowding of these facilities.

The share of the local population that is dependent on government transfer payments for their major source of income is sometimes used as an indicator of community well-being. The proportion of the adult population in Central Kootenay Regional District who were recipients of either BC Benefits or Employment Insurance has declined every year since 1997, the base year. This does not however suggest that the need for these benefits has declined; rather, that their availability is limited.

5.4 Land and Water Use Impacts and Impacts on Resource Users

The predictive impact assessment identified some issues with respect to the rifle range (discussed under Recreation) and possible water quality degradation issues on Walker and Balfour Creeks. Measures to protect the creeks were implemented. Construction-related noise impacts were assessed as "low to insignificant" in the noise impact study undertaken prior to the project.[11] None of these issues developed during project construction.

Forestry related impacts identified prior to the project commencing included potential logging truck traffic delays and increased commuting time for Pope and Talbot workers for those workers who normally commuted over the dam.

[11] Barron Kennedy Lyzun and Associates Ltd. *Keenleyside Powerplant Project Assessment of Noise and Vibration from Construction*. 1991.

Passage of logs through the navigational locks was expected to be unaffected. Again, these did not emerge as project-related issues.

6.0 Community Development Impacts

The Arrow Lakes Project created a number of community benefits, including several community and regional economic development initiatives. One of the most significant of these was First Nations development. Kiewit hired a First Nation Coordinator to help implement the First Nations program. As noted in section 2.0, the Coordinator was successful in encouraging First Nations hire on the project and in identifying several apprenticeship-training programs in various trades and in awarding scholarships to First Nations students. Funding was also available to Tribal Councils to undertake community economic development plans. Financial support of the First Nations economic benefits program enabled apprenticeship training for the Shuswap, Lower Columbia River All First Nation and Ktunaxa. Forty-five individuals completed short term and long term pre-apprenticeship programs

Early on in the project, CPC and Kiewit completed a number of community projects. These included:

- stabilizing the Zuckerberg Island causeway with materials from the project site (a cooperative project involving Kiewit, CPC and the City of Castlegar);
- trucking fill from the project site to Pass Creek Park for equestrian access and parking;
- trucking sand from the former Driftwood Beach area to Pass Creek Park to enhance a swimming area;
- in cooperation with B.C. Hydro and the City, providing riprap from the project site to protect the Waldie Historical trail and City lagoons from erosion;
- in cooperation with B.C. Hydro, trucking sand from the project site to Syringa Creek Provincial Park to expand the beach;
- completing a school bus turn-around (Kiewit's project); and,

- a series of other projects (also completed by Kiewit) for a diverse range of community groups such as the Castlegar & District Wildlife Association, the Robson Fire Department, the Castlegar Golf Club and others.

Other projects completed were:

- fisheries enhancement at Norns Creek (the Castlegar District Wildlife Association, $4,500);
- fisheries habitat enhancement on Sproule Creek (Nelson Rod & Gun Club, $5,000);
- spawning and rearing habitat enhancement (Trail Wildlife Association $2,500); and,
- fish weir on Murphy Creek (Ministry of Transport, Columbia Basin Fish and Wildlife Compensation Program, Peter Kiewit Sons and CPC, $3,000).

Another community benefit associated with the project was Kiewit's 'People for Parks' program. Over a two year period, this fund of $100,000 was allocated to 50 non-profit organizations within the Columbia Basin for park capital improvements. The program was intended to distribute benefits throughout the Columbia Basin; therefore, preference was given to applications outside the Castlegar area.

7.0 Public Perceptions of the Project

Predicted Impacts

The community had voiced some concerns with earlier proposed configurations of the Keenleyside project, namely a desire to avoid boom and bust type impacts, traffic issues, and concerns about possible transmission line impacts on watersheds, visual impacts, and property values. Overall, residents wished to maintain their quality of life while supporting the project due to its perceived economic benefits.

Actual Impacts

Public perceptions of the project were monitored in two ways: through issues raised with the Community Impact Management Committee, with CPC and with the Socio-Economic Monitor; and, through two surveys that were conducted with residents and local businesses.

A system was established at the outset of project construction to monitor public concerns or complaints. Residents were encouraged to contact the Socio-Economic Monitor by email, phone or postal box if they had project-related issues to resolve. The role of the monitor was to report these issues to CPC and Peter Kiewit Sons and to ensure that they were resolved satisfactorily. The Community Impact Management Committee, comprising local residents, politicians, business people and service providers, was another means for the public to raise project-related issues. During the course of construction, only 13 incidents were reported by the public, twelve of these in the first year. Most were related to blasting, excessive sand and dust and traffic.

The surveys were administered in April 1999 and December 2000. Both indicated a high degree of support for the project. Though people acknowledged the potential for some adverse impacts, such as traffic congestion or environmental effects, they seemed to feel that these potential problems would be outweighed by new jobs and increased economic activity. During the first survey, 60 local residents completed the one page questionnaire. At that time, there was a high degree of optimism about the project with half of the respondents believing that the project would positively affect their quality of life and 65% believing that the project would have a positive effect on the community. At the end of 2000, 64 residents completed the survey. Only 17% of respondents felt that the project was having a positive effect on their quality of life and about half felt that the community was benefitting. It is possible that residents had an inflated view of the project's potential to create benefits. Twenty local businesses completed surveys in 1999 and 2000. Survey results were similar in that business people

also had a somewhat optimistic perception that the project would create larger and more widespread benefits than it actually did.

8.0 Conclusion

The socio-economic monitoring program did fulfill its objectives, due in large part to the role played by the Community Impact Management Committee (CIMC). The stated objectives of the program were:

- to facilitate communication among stakeholders;
- to measure and report on the actual impacts; and,
- to document the proponents' efforts to minimize adverse impacts and maximize benefits.

There appeared to be excellent communication among the three key parties, namely local residents (as represented by the CIMC), Peter Kiewit Sons and CPC. Regular project meetings, tours of the project at various stages of construction and cooperative problem solving created an open and trusting relationship among the parties.

The measurement and reporting of impacts was relatively successful, though there were some challenges tracking particular indicators. Certain local agencies and organizations seemed to view the monitoring exercise as somewhat burdensome and were not prepared to report regularly. This is not surprising, given the fact that so many organizations are short of resources. A less frequent reporting schedule (say every four or six months, as compared to every three) may have helped to solve this problem.

The monitoring program seemed to be able to track how Kiewit and CPC managed impacts and dealt with issues. In fact, it must be acknowledged that the Arrow Lakes Generation Project was extremely well managed. Considerable efforts were made well in advance of project construction to deal with anticipated impacts (for example, the Traffic Management Plan was completed to identify

strategies for dealing with potential traffic issues) and to keep the public informed. When there was an issue (for example, workers using Broadwater Road to commute), it was resolved quickly and generally to the satisfaction of all involved. The very small number of issues or concerns reported by the public (13 in all and 10 relevant to the project) is a strong indicator of how well the project was managed by the contractor and the owner.

In sum, the Arrow Lakes Generation Project created considerable employment and income benefits for Columbia Basin communities, with few of the adverse effects associated with a major construction project. Both CPC and Kiewit were responsive and open in their dealings with the public. The Community Impact Management Committee played a meaningful role in project development and monitoring. Overall, the socio-economic monitoring process was successful because of positive communication between the owner and contractor and the region's residents.

APPENDIX I
Monitoring Indicators

Final Monitoring Report

This monitoring report is prepared as part of the Arrow Lakes Generating Station Socio-Economic Monitoring Program. The profile contains indicators describing the regional economy and social environment and includes project- related employment and expenditures. For a detailed explanation of the indicators contained herein, refer to the Socio-Economic Monitoring Program, Keenleyside 170 MW Powerplant Project, Final Report, Feb. 1999.

Where possible, data are presented for the past 5 years to identify trends. The baseline year for monitoring purposes (generally 1997) is highlighted in the tables. The most recent available data is included. Some variables are quite up to date, while others are available only with a substantial lag.

APPENDIX II
List of Contacts

Sue Adair, Human Resource Development Commission

Lydia Chernoff, Peter Kiewit Sons Co. Ltd.

Katrina Conroy, Kootenay/ Castlegar Child Care Society

Jim Davidson, Sandman Inn

Lorna Donaldson. School District #20

Dan and Lynn Hague, Managers, Pass Creek Park

Dwayne Hamilton, Castlegar Rod & Gun Club

David de Git, Columbia Power Corporation

Ann Johnson, Day Care Reception and Referral

Brent Johnston, Columbia River Homes

Pam Johnstone, Days Inn

Alex Kositsin, Ponderosa Trailer Park

Chase Law, Parkwood Court

Suzanne Lebhauer, Best Western Fireside

Lynnene Lewis, Kootenay/ Castlegar Child Care Society

Karen Markus, BC Parks Management

Pat Medge, Manager, Castlegar Recreation Commission

Scott Murie, Columbia Hydro Constructors

Dwayne Neufeld, Ministry of Transportation and Highways

Dianne Postnikoff, School District #20

Ed Readcher, Monte Carlo

Fred Salikin, local fisher

Bugs Stanley, Manager, Syringa Creek Park

Laura Strelaeff, Kootenay River Kampgrounds

John Traynor, Cozy Pines

Lee-Ann Van Horne, Columbia Hydro Constructors