**Extracting the Value**

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**Acknowledgements**

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## Availability

Copies of all reports associated with the project have been provided to the XX.

## Project Reports

- Extracting the Value
- Others???

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**Extracting the Value**

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## 1.0 Introduction

Much has been written about the transformation of the North American economy and the rise of the Service Industry sector. As knowledge and information become increasingly valued commodities, the need for workers in all components of the Service Industry sector will be crucial to extracting increased value and GDP from the traditional basic sectors of the economy.

The current economic upswing in resource industry development has exposed a critical lack of Service Industry sector employees across the north. Firms are unable to find employees across almost all of the industry and service sector components, and this limits our ability to respond to opportunities and reduces the benefits our communities and regions are able to derive from such development activity. This has emerged as a critical labour market issue in northern BC. The Community Development Institute seeks to delineate this labour market issue and identify practical responses to addressing the gaps in both the short and long term. The Extracting More Value Report will highlight the role of the Service Industry sector in the development of the natural resource sector and in the future diversification of northern BC's economy.

## 2.0 Change in resource economies

Following World War II, many resource communities in BC expanded rapidly (Barnes and Hayter 1992; Robson 1991). However, during the post-Fordist era, there has been considerable consolidation and restructuring across different resource sectors, resulting in the decline of many small communities (Barnes and Hayter 1992; Clemenson 1992; Stauffer 2001). Industrial restructuring was driven by many factors. The recession of the early 1980s resulted in high interest rates, high oil costs, and low product prices (Clemensen 1992; Humphrey 1990; Sinclair 1992). Industrial restructuring was also marked by investments in substituting labour for technology that reduced manufacturing employment across resource sectors (Barnes and Hayter 1992; Williamson and Annamraju 1996). Depleting resource stocks, demand for new products in new markets, and the introduction of new activities, such as aquaculture or tourism have also impacted the way industry and resource communities do business (Humphrey 1990; Luloff 1990; Williamson and Annamraju 1996; Barnes and Hayter 1992; Marshall 2001). More recent challenges for industry have included changes in commodity prices, the Softwood Lumber Dispute, and the rising Canadian dollar.

Not all rural and small town places are declining. Places experiencing rapid growth, such as Fort St. John, BC and Fort McMurray, Alberta, are confronting a number of service challenges (Kroetsch 1993; Robinson 1989). Problems with isolation are exacerbated with staffing shortages in trades, health care, social services, and education.

With the adoption of labour saving technologies and the rapidly changing demand for new products and services, it will be increasingly important to understand how to obtain more value out of resource development by optimizing opportunities in supporting service sectors. It is critical that communities are ready to take advantage of these opportunities.

## 3.0 Reciprocal relationships between services and industry

Although the development of resource industries can lead to the creation of many indirect jobs in the service sector, services can also support the development and on-going industrial operations. Services can reduce labour turnover (Bergen 1977; Gill and Smith 1985; Riffel 1975) and provide a foundation to attract and retain residents and businesses. For example, businesses and industries have selected town locations due to quality of life attributes such as recreational opportunities (Johnson and Rasker 1995). To improve resident satisifaction in growing oil and gas communities, there have also been calls for more shopping options (Bone and Mahnic 1984; Government of Alberta 2006; Howery 2006; McPhee 1982).

During transition periods, services help residents to cope with job restructuring through the provision of employment services, social welfare, education and re-training; and health care for coping with stress, anxiety, and depression (Bluestone and Harrison 1982; Dale 2005). The presence of health care professionals and emergency services is also important to meet diagnostic and minor treatment needs, and to be ready to respond to an industrial accident (Government of Alberta 2006). Due to high rates of drug and alcohol use, traffic accidents, and family violence, some oil and gas towns also have an increasing need for shelters, counseling programs, more police officers, victims' services, and even detox centres (Bone and Mahnic 1984; Government of Alberta 2006; Hipwell *et al.* 2002). Extended day care programs are needed to support shift workers and their families, as well as to enhance opportunities for women to participate in the labour force (England 1996). Unfortunately, these services are often not provided due to staffing shortages (Government of Alberta 2006).

The availability of education facilities, such as elementary schools and high schools, is important to prevent the out-migration of young families. At the post-secondary level, colleges can respond to changing industry and community needs by designing relevant programs and services. For example, educational needs may also include a program coordinator for educational and recreational uses of the forest (Duinker *et al.* 1991). There have been calls for more culturally appropriate education and training programs to improve education and ease job transitions, particularly in aboriginal communities (Government of the Northwest Territories 2007). While workers have historically been able to obtain employment without a high school education, the Government of Alberta (2006: 47) reinforces the importance of educational services in the oil and gas sector as it predicts that "64 percent of new jobs will require post secondary credentials". Unfortunately, there is a shortage of administrators, teachers, and teacher aides to support new educational requirements within the oil and gas sector (Government of Alberta 2006).

As many oil and gas communities struggle with labour shortage issues, provincial programs to support immigration and integration, such as the Provincial Nominee Program and English as a Second Language programs, are required (Government of Alberta 2006).

The business sector can provide a range of supplies and services to support industry operations. For example, in agricultural communities, wholesale businesses and suppliers provide feed, seeds, and chemicals, while other businesses assist with crop dusting and spraying, soil preparation, planting, cultivating, harvesting, bailing, and threshing (Cummings *et al.* 1998).

Salt mining companies provide salt for feed to livestock owners. There is also a demand for farm machinery and farm equipment businesses. In terms of services, veterinarians and farm animal breeding specialists provide support for livestock farm operations (Cummings *et al.* 1998). Legal and accounting services provide assistance with farm operations, while insurance and real estate agencies provide assistance for selling, leasing, appraising, and brokering farm properties (Cummings *et al.* 1998). Even laundry and courier services will be important for supporting industrial operations (Petro Canada 2006).

In terms of infrastructure, the local availability of accommodations is important for workers, contractors, consultants, and investors. Communication infrastructure and services, such as the Internet, telephone services, and cell phone services, support the development of business networks (Henderson 2001). For example, through the Internet, the Woodnet Development Council in Orofino, Idaho developed a cooperative for woodworkers and a network of specialty plant growers in the Pacific Northwest. A variety of herb, plant, and wood products are available for purchase over the Internet. Furthermore, an on-line wood swap exists for woodworkers to buy, sell, and trade specialty wood, equipment, goods, and services (Henderson 2001). These communication services enable traditional resource sector businesses to extract more value out of their products and to develop new business opportunities.

Municipal services, notably garbage collection, water, and sewage, provide basic infrastructure needs (Michalos and Zumbo 1999). Water treatment and waste disposal plants may need upgrading (McPhee 1982). There are several recent regional initiatives to develop regional water treatment plants. For agricultural communities, water mains, sewers, and drains are needed for farm land. The agriculture sector supports businesses that drill water wells, and install and repair water well pumps and well piping systems. There is a demand for septic system installations, excavation and grading, concrete pouring and finishing. Furthermore, there is a need for tradesmen, such as plumbers, heating technicians, and electricians (Cummings *et al.* 1998).

Rapid growth associated with industry also requires additional municipal staff to fulfill comprehensive planning initiatives and prioritize development needs, assess land availability, and develop policies to encourage higher densities and infill development (Government of Alberta 2006; Howery 2006). Planning at the local, regional, and provincial level is also needed to assess traffic, road, and highway infrastructure. This is particularly important as traffic from industry can have a heavy toll on transportation infrastructure.

Good highway and railway connections can provide important opportunities for industry (Forest Ecosystem Solutions 2005; Robinson Consulting and Associates Ltd. and Timberline Forest Inventory Consultants Ltd. 2006). In oil and gas towns experiencing rapid growth, there is a demand for highway construction crews to complete interchanges, as well as grading, paving, and twinning of highways. Airport runways and infrastructure need upgrading. Depending on the size of the community and volume of air traffic, air traffic controllers may be needed. Railroad improvements may include tie replacements, rail replacements, and ballast and bridge repairs (Government of Alberta 2006). In some remote locations, there is a need for specially constructed ice roads (Bone and Mahnic 1984).

Transportation services are critical for moving forest products, such as wood chips, to pulp mills (BC Ministry of Forests 1999, 1997). The forest sector is also supported by business travel to and from these forest-based communities (BC Ministry of Forests 2002, 2001a, 2001b). In agriculture, freight and trucking services are important to transport bulk liquids and dry materials (livestock, manure, and agricultural products) (Cummings *et al.* 1998). Gas stations and motor vehicle repair shops are also important. Additional indirect employment is supported in construction (BC Ministry of Forests 2001c, 2001d).

Changes in economic growth patterns and information needs will add new pressures on service provision. This brief review demonstrates the important role services play to fulfill on-going operations of industry and to enhance a community's quality of life. It will be important for rural and small town places to aggressively prepare and pursue opportunities in the service sector in order to mitigate economic leakage and extract more value out of traditional resource sector activities.

## 4.0 Defining the service sector

A working definition of the Service Industry sector for this project is drawn from Statistics Canada's standard industrial classification system. In this case, we identify 5 support clusters, as well as 2 additional categories, that will comprise the Service Industry sector. These are:

Goods Support
- Wholesale Trade
- Transportation and Warehousing
- Retail Trade

Administrative Support
- Administrative and Support
- Public Administration
- Management of Companies and Enterprises

Social Support
- Educational Services
- Health Care and Social Assistance

Cultural Support
- Information and Cultural Industries
- Arts, Entertainment and Recreation

Finance Support
- Finance and Insurance
- Real Estate and Rental and Leasing
- Professional, Scientific and Technical Services

Accommodation and Food Services

Waste Management and Remediation

## 5.0 Understanding the multiplier effect

The purpose of this section is to define the multiplier effect and to understand the linkages between resource development and additional spin-off opportunities created through indirect jobs. The multiplier effect of resource development can present opportunities for the service sector in a number of ways. Resource companies purchase goods and services, such as construction services, fuel, and transportation services, to support their operations (Dale 2005). As resource companies build and expand their production, they hire more staff. These households then spend some of their income purchasing a wider range of goods and services. This outlines an important opportunity to pursue additional sources of revenue and employment across the service sector in many rural and small town places. However, Ecos Environmental Consulting (2004: 35) assert that "the number and types of jobs that communities can secure depends largely on the existing infrastructure, the population base industry can draw upon, and the skill sets that the area can provide".

The employment multiplier is an estimating measure that has been used to estimate "the total employment supported by each direct job" created by the resource sector (BC Ministry of Forests 2002: 3). A larger multiplier indicates that each job directly tied to the resource sector will support more economic activity at supply and service companies. For example, "a multiplier of 2.0 means that one direct job supports one additional indirect and induced job" (BC Ministry of Forests 2002: 3). Larger employment multipliers associated with direct jobs in the resource sector are largely due to higher company revenues, supply requirements, higher wages, and spending patterns (BC Ministry of Forests 2002). Furthermore, if services previously assumed by a company are contracted out, then the employment ratios will increase even if the total employment remains the same. In some cases, the industries may reduce their own labour force as they develop a greater reliance on purchasing external services (Horne 2004).

We begin by reviewing a series of reports across Canada that outline the employment and input-output multipliers across economic sectors. This is followed by a review of reports that explore the economic impacts of a specific sector or project.

## 6.0 Employment and input-output multipliers for various economic sectors

Jobs associated with resource sectors generate many indirect job spinoffs. These indirect jobs are an important source where rural and small town places can generate additional wealth locally. The key is to understand how you can recirculate wealth and plug economic leakages to distant urban centres. Unfortunately, many reports that examine the economic impacts of resource sectors focus on the wealth generated from direct jobs in resource industries, and fail to fully examine the potential economic growth that rural and small town economies can attain from the service sector.

In 2004, BC Stats released employment multipliers representing various economic sectors for the province (Table A1). The indirect employment per direct job is higher for resource sectors, such as logging, mining, oil and gas, and manufacturing. As suggested earlier, higher revenues,

supply needs, and wages is a likely explanation for higher employment multipliers in these sectors. Yet, the person years of direct employment per $ million of output is greater amongst various service sectors where the labour needs are more intensive. When considering both the indirect jobs created in the service sector through resource activities and the more intense labour needs associated with services, there are considerable opportunities to extract more value from the service sector in northern BC.

In British Columbia's Heartland at the Dawn of the 21st Century, Horne (2004) presents data depicting employment multipliers (indirect and induced) across nine basic economic sectors for a range of communities in northern BC (Table A2). Employment impact ratios are used instead of income measures as many small communities are more concerned with changes in employment. Data in Table A2 are for a 'migration' scenario with no safety net in place. The no-safety net assumes that workers will move out of the community to search for employment in the event of layoffs or closure. Overall, employment multipliers were greatest for the pulp and paper sector, followed by wood manufacturing and mining. Employment multipliers ranged from 1.62 - 2.50 for pulp and paper, 1.22 – 1.86 for wood manufacturing, and 1.15 – 1.57 for logging. In mining, employment multipliers ranged from 1.34 – 1.73. Employment multipliers for the agricultural sector were somewhat low (1.17 – 1.34) compared to other studies, although this is likely due to the smaller scale of agricultural operations in northern BC.

Employment multipliers for tourism are low compared to other sectors (1.09 – 1.29). Horne (2004) offers a number of explanations for this. First, it can be difficult to estimate the number of jobs directly associated with tourism. Businesses, such as resorts or guided tours, are easily identifiable as tourism jobs. Other businesses, such as retail stores or restaurants, are closely associated with resident services. Second, comprehensive resorts not only provide accommodations, but they are also equipped with their own transportation services, gift shops, and restaurants, thereby limiting the impact that tourists have on the rest of the community.

These figures also demonstrate that employment multipliers are strongest in regional centres, such as Prince George and Dawson Creek, and smallest in rural and small town places, such as Stewart. Several industries and services have consolidated over time into regional centres, which likely explain this trend. However, it is also important to note that a number of businesses and suppliers, such as Rona, Canadian Tire, Home Depot, and Wal-Mart, have been expanding throughout northern BC.

The Northwest Territories Bureau of Statistics (2007) also provides an overview of the direct and indirect economic multipliers for various economic sectors (Table A3). These economic multipliers are expressed in the form of intensity ratios that include GDP at basic prices per dollar of output, labour income per dollar of output, and jobs per million dollars of output. Intensity ratios are determined by "dividing the total (direct and indirect) economic impact due to some change in consumption or output, by the change in consumption or output" (NWT Bureau of Statistics 2007: 2). If an industry's output is increased by $2 million, resulting in an increase of $1.5 million in total territorial GDP, the GDP intensity ratio for that sector would be 0.75. Intensity ratios are usually less than one due to economic leakages from the economy (NWT Bureau of Statistics 2007). Furthermore, intensity ratios for labour income are usually lower for industries that exhibit a high use of technology.

Resource sectors, such as mining, oil and gas, manufacturing, and crop and animal production have lower intensity ratios for labour income (0.08, 0.15, and 0.15 respectively) and jobs (1.0, 2.6, and 3.6 respectively), likely due to the labour saving technology that is involved with production. However, services, such as education, health care, retail, accommodation and food, transportation and warehousing, administration, and even support activities for mining, oil and gas, exhibit higher intensity ratios for labour income and jobs per million dollars of output. There are wide variations with intensity ratios for GDP across both resource and service sectors.

Statistics Canada (2008) recently released its 2004 provincial input-output multipliers for British Columbia. Table A4 shows the direct and indirect economic multipliers for various industries and service sectors in BC. The data considers the effects implicated for all provinces. As demonstrated in data for the Northwest Territories, resource sectors, such as mining, oil and gas, show lower intensity ratios for wages and salaries. By comparison, there are higher intensity ratios for services, such as wholesale trade, retail trade, government, and administrative and support, waste management and remediation services. Of interest, the input-output multipliers are not as strong as expected for the mining, oil and gas sector. Instead, input-output multipliers are strongest for crop and animal production, construction, manufacturing, and transportation and warehousing.

***Ocean sector***

Gardner and Frost (2005) explore the direct and spinoff impacts of the ocean sector on the economy (GDP) in Nova Scotia. Of interest, while the oil and gas sectors produce the greatest proportion of direct economic activity, the fishing industry exerts the greatest proportion of spinoff activity impacting GDP (Table B2). This was attributed to the indirect effects of commercial fishing on fish processing.

In terms of employment impacts, very little fluctuation is evident in direct full-time equivalent jobs for the Nova Scotia ocean sector. Instead, as economic activity thrived or declined, larger fluctuations were experienced in spinoff employment. For example, spinoff employment peaked during the height of offshore oil and gas activity in 1999 with 36,435 jobs (Table B3). Government cut backs in the Department of National Defense and the Department of Fisheries and Oceans led to sharp declines in spinoff employment in 1996 (Gardner and Frost 2005).

When specific private sector industries within Nova Scotia's ocean sector were examined, the fishing industry and related support services accounted for 41% of the total employment (direct and spinoff), surpassing figures for offshore oil and gas, as well as shipping (Gardner and Frost 2005). Of particular interest, while the fishing industry supported 10,231 full-time equivalent positions, an additional 13,828 full-time equivalent jobs were generated from fishing activities (Table B4). In the public sector, the Department of National Defense accounted for the most significant proportion of total employment (31.0%). This included 10,840 in direct FTE jobs and 7,362 in spin-off positions.

Figures for household income from both direct and spinoff employment in Nova Scotia's ocean sector indicate a growth period between 1996 and 1999 (Table B5). These changes were largely

associated with the impacts of offshore oil and gas developments (Gardner and Frost 2005). Since 1999, the household income from spinoff employment has been more significantly impacted as offshore activity changed from construction to operation (Gardner and Frost 2005).

Across the different private industries in Nova Scotia's ocean sector, the fishing industry had the greatest impact on household incomes directly, and even more important, indirectly (Table B6). While the fishing industry generated $220.5 million in household incomes directly, an astonishing $452.1 million was generated in spinoff income, and thereby easily outperforming any other private industry (Gardner and Frost 2005). Small figures associated with the oil and gas sector are explained by lower levels of direct and indirect employment in the operation phase of this industry. In the public sector, the Department of National Defense accounted for the greatest percentage of total household income directly and indirectly in the ocean sector (Gardner and Frost 2005).

***Oil and gas***

Nicol *et al.* (2003) identify the direct, indirect, and induced employment impacts of oil and gas activities in Northeastern BC. When considering oil and gas activities and pipeline transportation, 16,635 direct jobs were created. This was complemented by an additional 16,625 indirect and 11,675 induced jobs (Table C1). However, Nicol *et al.* (2003) explains that much of this activity is dominated by Alberta-based companies. Instead, the bulk of BC employment is focused on services that support the exploration, drilling, production, and servicing of wells. In Table C2, the direct oil and gas labour force in the Northeastern region of BC totals 3,080. It is anticipated that there is a leakage of approximately 37,000 jobs and $1.6 billion in employment income from the region (Nicol *et al.* 2003). This exemplifies the need to respond to and develop the service sector to plug leakages from northern BC communities.

Ecos Environmental Consulting (2004) and McPhee (1982) describe some of the direct and indirect jobs that are required to meet the needs of the oil and gas sector. For example, through the Cohasset-Panuke project, 1,320 jobs are directly associated with offshore activities, while 2,460 spin-off jobs are also created. The Sable Offshore Energy Project has created even more employment, including 3,200 direct jobs and 8,980 spin-off jobs in development and production. Direct jobs that are required for offshore oil and gas operations include deck crews, engine room crews (marine), radio operators, officers (marine), helicopter pilots, helicopter mechanics, refuelers, accountants, and secretaries (Ecos Environmental Consulting 2004; McPhee 1982). Some of the indirect jobs that are required in oil and gas operations entail cleaning and catering staff, cooks, and food service supervisors (Ecos Environmental Consulting 2004).

The Petroleum Human Resources Council of Canada (2003) also describes a range of direct and indirect service supports required in the petroleum industry. For example, exploration and production companies need geophysical services that specialize in the collection, interpretation, and management of seismic data. In addition to land-based and offshore drilling companies, businesses covering well testing and wireline, pumping, road and lease construction, and pipeline services are needed. Pipeline companies transport crude oil and natural gas to centres where natural gas facilities process clean gas to be sold commercially. Upgrading facilities process heavy oil and bitumen from the oil sands into a lighter crude oil. Harbour and docks must be

upgraded or expanded, waterfront property must be acquired for office space and supplies distribution, and helicopter pads must be built (McPhee 1982). Furthermore, soil conservation planning and land reclamation activities assist to return impacted wetlands back to their original conditions (Government of Alberta 2006). However, McPhee (1982) cautions that while floormen, roustabouts, mechanics, welders, and caterers are likely to be drawn from the area, skilled rig workers are likely to be recruited from distant places.

***Agriculture***

Using Huron County, Ontario as a case study, Cummings *et al.* (1998) demonstrate the impact of the agriculture sector on employment and sales in the region. Using 1996 figures, the agriculture sector in Huron County generated 4,428 direct, 12,128 indirect, and 3,528 induced jobs (roughly 20,000 jobs). In terms of sales, $512 million in direct and $1.5 billion in indirect sales are associated with this county's agriculture sector. In Huron County, transportation companies received $1.5 million in agricultural sales (Cummings *et al.* 1998). Furthermore, roughly 50% of surveyed retail sales ($1.3 million per year) in this county are attributed to the agriculture sector (Cummings *et al.* 1998). Average sales for eight surveyed real estate and insurance companies were $3.8 million per year, with 47% of sales related to agriculture (Cummings *et al.* 1998).

***Transportation***

The transportation sector supports a range of direct jobs, such as trucking jobs, rail related jobs, and terminal jobs. For example, it was anticipated that the Northern BC Container Terminal would directly support approximately 810 jobs or 360 full-time equivalent positions in Prince Rupert and around northern BC (Table D1 and Table D2) (InterVISTAS Consulting Inc. 2006a). This would account for $17.1 million in direct wages and salaries. An additional 498 indirect or induced jobs ($27.1 million in wages) would also be supported by the terminal (InterVISTAS Consulting Inc. 2006a). Key labour needs included trucking, warehouse and transportation, construction, lumber reloading, freight forwarders, forklift operators, truck drivers, marine security, rail security, road security, customs and border security staff, and rail operations and maintenance (tunnel and bridge improvements to accommodate containers), container repairs, container storage, followed by freight services and logistics, supervisors, managers, banking services, wash bay staff, and administrative support (InterVISTAS Consulting Inc. 2006a). Some places with container ports have also produced value-added services, such as packaging (InterVISTAS Consulting Inc. 2006a).

A number of studies have also examined the economic impact of small airports. For example, the Vernon Regional Airport produces 101 direct jobs, as well as 376 indirect and 325 induced jobs (Table D3) (GHK Consulting 2006). The income employment that is generated is $3.6 million in direct income, $13.9 million in indirect income, and $12.0 million in induced income (GHK Consulting 2006). By comparison, the Nelson Airport generates between roughly $6-10 million annually, with approximately $1.3-1.8 million allocated to supporting between 28 and 41 direct and indirect full-time jobs (Table D9) (Canadian Owners and Pilots Association and Nelson Pilots Association n.d.).

InterVISTAS Consulting Inc. (2006b) provides a more detailed description of the employment and economic impacts of the Villeneuve and Cooking Lake airports. Combined, these airports generate 123 direct jobs and $4.8 million in direct wages, and an additional 175 indirect or induced jobs with $6.1 million in indirect wages (Table D7). Comox Valley Airport, a larger operating facility, generates 162 person years or 193 jobs, including employment related to airlines, airport management, security, food and beverage, retail, ground transportation, and other firms (InterVISTAS Consulting Inc. 2007b).

Sypher (2006) outlines the economic impacts of airports in northern BC and northern Alberta. Beginning with northern BC, the total employment (direct, indirect, and induced) associated with airport related activity includes 1,670 jobs. This is slightly lower than the 1,980 jobs created at airports around northern Alberta. In terms of GDP, airport activities in northern BC generate $114 million compared to $147 million that is generated around northern Alberta (Table D13).

In Lloydminster, Alberta, the airport provided 27 full-time equivalent jobs and $1,263,000 in labour income in 2003 (RP Erickson and Associates Aviation Consultants 2005). Airport businesses in Lloydminster also spent an additional $1,710,000 on non-labour related goods and services, much of which was allocated to local businesses. After considering the multiplier effect, it is anticipated that 58 full-time jobs and $2.39 million in payroll are generated from airport activities (RP Erickson and Associates Aviation Consultants 2005). By comparison, the Peace River Airport has 109 full-time equivalent jobs and $5,604,000 in labour income. Businesses located at this airport spent an additional $4,495,000 in non-labour related expenditures. After accounting for the multiplier effect, approximately 232 full-time jobs and $10.59 million in labour income is generated from this airport (RP Erickson and Associates Aviation Consultants 2005).

In High Level, the airport provided roughly 49 full-time equivalent jobs and $3,956,000 in labour income in 2003. Airport firms spent approximately $11,575,000 in non-labour related goods and services. With the multiplier effect, 104 full-time jobs and $7.47 million in labour income are generated through the airport (RP Erickson and Associates Aviation Consultants 2005). Furthermore, in Manning, Alberta, the small airport has 15 full-time equivalent positions with approximately $700,000 in labour income (RP Erickson and Associates Aviation Consultants 2005). Airport businesses spent $1,814,000 in non-labour related goods and services. After accounting for the multiplier effect, it is anticipated that 32 full-time jobs and $1.32 million in payroll income is generated at this airport (RP Erickson and Associates Aviation Consultants 2005).

In 2002, the Prince George Airport generated $91.3 million and supported 665 person years of employment (Prince George Airport Authority n.d.). In Prince Rupert, an impact study completed in 2001 determined that the city's airport generated 164 jobs and $12.8 million in revenues (Prince Rupert Airport Authority 2003).

These airports accommodate tourism and business travel through commercial airlines and charter flights, as well as emergency medical transportation. A number of industries and government agencies also rely on helicopter services. Some airports have expanded the use of their facilities to include flight schools or air cadet training. A range of direct and indirect jobs are supported

by these airports. Some of these services include car rental services, food and beverage services, baggage crew, cargo crew, management and administration, security, parking, directing aircraft, flight instructors, and emergency crews.

***Tourism***

As noted earlier, there are a range of challenges in determining the multiplier impacts of tourism activities. While some firms, such as resorts, are easily identifiable as tourism businesses, others, such as restaurants, cater to both tourist and resident needs (Horne 2004). Despite these challenges, there are a number of reports that outline the economic impacts of tourism activities.

Research Services with Tourism British Columbia (2005) demonstrate the employment multipliers associated with nature-based tourism in BC (Table E1). In this sector, approximately 13,927.5 person years in direct employment and an additional 6848.4 in indirect and induced employment are generated. In terms of labour income, $321.6 million is associated with direct tourist activities, while $234.7 million in labour income is associated with indirect or induced spin-offs. In terms of revenue, the importance of the service sector is demonstrated again as $697.88 million is associated with indirect or induced activities.

Morris (2007) examines the direct and indirect impacts of visitor spending in the Squamish area (Table E3). In 2004, visitors generated $835,814.25 in direct spending on accommodations, food and beverage, recreation, and retail trade. This was complemented by an additional $532,668.97 in indirect spending.

For Haida Gwaii and the Queen Charlotte Islands, 269 direct jobs and 23 indirect jobs are associated with the local tourism sector (Table E5) (Ministry of Sustainable Resource Management 2004). In terms of income, $4.5 million is associated with direct employment and $0.2 million is linked with indirect employment.

In the Morice Land and Resource Management Plan Area, Pacific Analytics Inc. *et al.* (n.d.) explored the impacts of tourism activities, such as hunting and angling. When considering all tourist activities, approximately 98 direct full-time equivalent (FTEs) jobs were created in the area, along with an another 87.5 indirect and induced FTEs (Table E6). Furthermore, while the direct GDP value for tourist activities was $3,524,000, the indirect and induced values combined for an additional $2,763,000.

The Canadian Sport Tourism Alliance's (2007) examination of the RBC Royal Bank Cup provides an opportunity to assess the economic impacts of a major sporting event. This event generated 15.8 full year jobs, along with an additional 12.1 indirect or induced jobs, in Prince George (Table E12). An additional 10.5 indirect or induced jobs were created in other places in BC. When we examine the impact of wages and salaries, $427,552 was generated in direct labour income, while an additional $475,566 was generated for indirect or induced income in Prince George. In the rest of BC, an additional $511,042 in indirect or induced income was produced.

Finally, InterVISTAS Consulting Inc. (2007a) provides an analysis of the economic impacts of the tourism sector in northern BC. (Table E14). Their findings indicate that 6,000 person years in direct employment and 1,800 person years in indirect employment are associated with the tourist sector in northern BC. In terms of income, $154,986,000 is associated directly with the tourist sector, while $46,537,000 is generated in indirect or induced activities. Furthermore, while $325,099,000 in output is directly linked with tourist activities, an additional $80,755,800 is indirectly generated.

## 7.0 Conclusion

Across northern BC, a number of places are experiencing or are anticipating rapid growth in resource activities. With labour saving technologies, however, resource sectors are employing fewer people. Some are recruiting a much more skillful and flexible labour force, while others are looking to contract out many services required for on-going operations. If places are to capitalize on their full potential and minimize the economic leakage from their communities, they will need to improve their capacity to meet supporting service needs. Unfortunately, due to labour shortage issues, many services are currently unavailable throughout the north.

This report explored multipliers associated with various economic activities to demonstrate the value of the service sector. There are a number of key points for consideration. First, it is important to recognize that through multiplier effects, the value of the service sector is being measured. Previous studies have demonstrated many times that revenue and jobs in the service sector are being created through both direct and spinoff activities. Unfortunately many communities in northern BC have not fully capitalized on the economic value that is created in these spinoff service needs.

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## Appendix A

## Economic Impacts and Multiplier Effects: Various Sectors

Table A1: Employment Multipliers, Selected Industries

| Industry | Indirect employment per direct job | Person-years of direct employment per $million of output |
|---|---|---|
| Logging | 1.1 | 3 |
| Mining, oil & gas | 1.1 | 3 |
| Manufacturing | 0.9 | 4 |
| Agriculture | 0.6 | 11 |
| Transportation & warehousing | 0.5 | 9 |
| Construction | 0.5 | 8 |
| Arts, entertainment & recreation | 0.4 | 16 |
| Wholesale trade | 0.4 | 9 |
| Professional, scientific & technical services | 0.3 | 14 |
| Fishing, hunting & Trapping | 0.3 | 9 |
| Retail trade | 0.2 | 21 |
| Accommodation & food services | 0.2 | 20 |
| Health & social services | 0.2 | 18 |
| Education | 0.1 | 34 |

Source: BC Stats. 2004. British Columbia's Manufacturing Sector. Victoria: BC Stats. Pg. 4.

Table A2: A Comparison of Indirect and Induced Employment Ratios across Economic Sectors for Northern BC – 2001

| | Logging | Pulp & Paper | Wood Mfg. | Mining | High Tech. | Agr. | Tourism | Public Sector | Constr. |
|---|---|---|---|---|---|---|---|---|---|
| Burns Lake | 1.28 | 1.62 | 1.46 | 1.37 | NA | 1.17 | 1.13 | 1.26 | 1.32 |
| Dawson Creek | 1.35 | 2.21 | 1.64 | 1.63 | 1.24 | 1.28 | 1.19 | 1.35 | 1.43 |
| Fort Nelson | 1.37 | NA | 1.49 | 1.48 | 1.18 | 1.23 | 1.20 | 1.30 | 1.34 |
| Fort St. John | 1.32 | 2.24 | 1.68 | 1.57 | 1.25 | 1.26 | 1.20 | 1.33 | 1.47 |
| Hazelton | 1.23 | NA | 1.38 | 1.39 | 1.26 | 1.18 | 1.12 | 1.24 | 1.33 |
| Kitimat-Terrace | 1.46 | 2.07 | 1.64 | 1.58 | 1.33 | 1.24 | 1.19 | 1.38 | 1.50 |
| McBride-Valemount | 1.28 | NA | 1.49 | NA | 1.12 | 1.20 | 1.14 | 1.25 | 1.39 |
| Prince George | 1.57 | 2.50 | 1.86 | 1.73 | 1.38 | 1.34 | 1.29 | 1.51 | 1.69 |
| Prince Rupert | 1.40 | 2.16 | 1.64 | 1.37 | 1.18 | 1.28 | 1.21 | 1.38 | 1.52 |
| Queen Charlotte Island | 1.54 | 1.85 | 1.62 | NA | 1.12 | 1.33 | 1.21 | 1.35 | 1.48 |
| Quesnel | 1.39 | 2.08 | 1.61 | 1.62 | 1.15 | 1.25 | 1.19 | 1.35 | 1.47 |
| Smithers-Houston | 1.42 | 2.13 | 1.67 | 1.67 | 1.22 | 1.28 | 1.20 | 1.41 | 1.54 |
| Stewart | 1.15 | NA | 1.30 | 1.34 | NA | NA | 1.09 | 1.19 | 1.21 |
| Stikine | 1.20 | 1.70 | 1.22 | 1.40 | 1.20 | NA | 1.13 | 1.30 | 1.33 |
| Vanderhoof | 1.33 | 1.77 | 1.47 | 1.53 | 1.30 | 1.23 | 1.14 | 1.29 | 1.46 |
| Williams Lake | 1.38 | 2.02 | 1.62 | 1.64 | 1.36 | 1.26 | 1.19 | 1.37 | 1.49 |

Source: Horne, G. 2004. British Columbia's Heartland at the Dawn of the 21st Century. Victoria: Ministry of Management Services, Government of British Columbia.
Note: Figures shown are for migration – no safety net in place – no public sector impacts.
NA: indicates there is no direct activity in that particular sector.

Table A3: Total Direct and Indirect Economic Multipliers for the Northwest Territories

| | GDP at Basic Prices per Dollar of Output | Labour Income per Dollar of Output | Jobs per $million of Output |
|---|---|---|---|
| Crop and Animal Production | 0.66 | 0.15 | 3.6 |
| Forestry and Logging | 0.80 | 0.66 | 12.3 |
| Fishing, Hunting, and Trapping | 0.61 | 0.54 | 13.8 |
| Support Activities for Agriculture and Forestry | 0.84 | 0.72 | 11.8 |
| Mining and Oil and Gas Extraction | 0.79 | 0.08 | 1.0 |
| Oil and Gas Extraction | 0.86 | 0.05 | 0.7 |
| Diamond Mining | 0.79 | 0.08 | 0.9 |
| Support Activities for Mining and Oil and Gas Extraction | 0.66 | 0.56 | 5.9 |
| Utilities | 0.65 | 0.20 | 1.8 |
| Electric Power Generation, Transmission, and Distribution | 0.65 | 0.19 | 1.8 |
| Natural Gas Distribution, Water, Sewage, and Other Systems | 0.69 | 0.33 | 3.6 |
| Construction | 0.41 | 0.31 | 3.5 |
| Manufacturing | 0.69 | 0.15 | 2.6 |
| Wholesale Trade | 0.71 | 0.47 | 7.5 |
| Retail Trade | 0.76 | 0.59 | 15.9 |
| Transportation and Warehousing | 0.45 | 0.32 | 4.5 |
| Truck Transportation | 0.65 | 0.39 | 5.5 |
| Transit and Ground Passenger Transportation | 0.68 | 0.51 | 11.0 |
| Pipeline Transportation | 0.92 | 0.08 | 0.6 |
| Other Transportation | 0.39 | 0.30 | 4.1 |
| Warehousing and Storage | 0.80 | 0.26 | 3.6 |
| Information and Cultural Industries | 0.77 | 0.19 | 3.9 |
| Motion Picture and Sound Recording Industries | 0.57 | 0.14 | 8.2 |
| Broadcasting and Telecommunications | 0.80 | 0.19 | 3.4 |
| Publishing Industries, Information Services, and Data Processing Services | 0.44 | 0.24 | 7.0 |
| Finance, Insurance, Real Estate, and Rental and Leasing | 0.81 | 0.41 | 1.5 |
| Professional, Scientific, and Technical Services | 0.64 | 0.53 | 7.7 |
| Administrative and Support, Waste Management and Remediation Services | 0.75 | 0.63 | 11.1 |
| Administrative and Support Services | 0.75 | 0.64 | 11.3 |
| Waste Management and Remediation Services | 0.85 | 0.46 | 8.4 |
| Educational Services | 0.83 | 0.69 | 20.3 |
| Health Care and Social Assistance | 0.74 | 0.61 | 8.3 |
| Arts, Entertainment, and Recreation | 0.58 | 0.40 | 16.0 |
| Accommodation and Food Services | 0.65 | 0.43 | 11.8 |
| Other Services (Except Public Administration) | 0.67 | 0.47 | 12.7 |
| Repair and Maintenance | 0.59 | 0.39 | 11.0 |
| Grant-Making, Civic, and Professional and Similar Organizations | 0.71 | 0.60 | 18.1 |
| Personal and Laundry Services and Private Households | 0.71 | 0.50 | 13.4 |
| Government Sector | 0.73 | 0.58 | 8.0 |
| Other Municipal Government Services | 0.61 | 0.44 | 13.2 |
| Other Provincial and Territorial Government Services | 0.74 | 0.57 | 8.6 |
| Other Federal Government Services | 0.74 | 0.53 | 5.8 |

Source: NWT Bureau of Statistics. 2007. *NWT Economic Multipliers – Overview and Results.* Yellowknife: NWT Bureau of Statistics.

Table A4: Total Direct and Indirect Economic Multipliers for British Columbia (effects within all provinces)

| | Wages & Salaries | Total GDP | Output |
|---|---|---|---|
| Crop and Animal Production | 0.39 | 0.83 | 1.92 |
| Forestry and Logging | 0.38 | 0.80 | 1.64 |
| Fishing, Hunting, and Trapping | 0.17 | 0.73 | 1.62 |
| Support Activities for Agriculture and Forestry | 0.40 | 0.81 | 1.55 |
| Mining and Oil and Gas Extraction | 0.17 | 0.90 | 1.35 |
| Utilities | 0.18 | 0.96 | 1.27 |
| Construction | 0.41 | 0.78 | 1.83 |
| Manufacturing | 0.36 | 0.77 | 1.86 |
| Wholesale Trade | 0.53 | 0.92 | 1.52 |
| Retail Trade | 0.56 | 0.94 | 1.51 |
| Transportation and Warehousing | 0.48 | 0.85 | 1.80 |
| Information and Cultural Industries | 0.37 | 0.88 | 1.48 |
| Finance, Insurance, Real Estate, and Rental and Leasing | 0.19 | 0.95 | 1.38 |
| Professional, Scientific, and Technical Services | 0.57 | 0.91 | 1.52 |
| Administrative and Support, Waste Management and Remediation Services | 0.56 | 0.92 | 1.50 |
| Educational Services | 0.46 | 0.94 | 1.48 |
| Health Care and Social Assistance | 0.50 | 0.91 | 1.42 |
| Arts, Entertainment, and Recreation | 0.52 | 0.89 | 1.64 |
| Accommodation and Food Services | 0.51 | 0.86 | 1.77 |
| Other Services (Except Public Administration) | 0.57 | 0.93 | 1.43 |
| Operating, Office, Cafeteria and Laboratory Supplies | 0.00 | 0.00 | 0.00 |
| Travel, Entertainment, Advertising, and Promotion | 0.00 | 0.00 | 0.00 |
| Transportation Margins | 0.40 | 0.87 | 2.70 |
| Non-profit Institutions Serving Households | 0.68 | 0.92 | 1.43 |
| Government Sector | 0.57 | 0.91 | 1.53 |

Source: Statistics Canada. 2008. 2004 Provincial Input-Output Multipliers: British Columbia.

**Appendix B:**

**Economic Impacts and Multiplier Effects Across the Ocean Sector**

Table B1: Nova Scotia Ocean Sector GDP Impact, 1996-2001, ($000s)

| | Direct | Spinoff | Overall Impact |
|---|---|---|---|
| 1995 | 1,368,552 | 1,343,070 | 2,711,622 |
| 1996 | 1,220,753 | 1,230,688 | 2,451,441 |
| 1997 | 1,287,402 | 1,287,667 | 2,575,069 |
| 1998 | 1,344,002 | 1,440,681 | 2,784,683 |
| 1999 | 1,552,304 | 1,663,960 | 3,216,264 |
| 2000 | 1,958,074 | 1,421,646 | 3,379,720 |
| 2001 | 2,619,406 | 1,463,724 | 4,083,130 |

Source: Gardner, M. and J. Frost. 2005. *Economic Value of the Nova Scotia Ocean Sector.* Halifax: Gardner Pinfold Consulting Economists Ltd./MariNova Consulting Ltd. http://www.mar.dfo-mpo.gc.ca/pande/ecn/ns/e/ns15-e.asp.

Table B2: Nova Scotia Ocean Sector GDP Impact by Activity, 2001, ($000s)

| | Direct | Spinoff | Overall Impact | % of total |
|---|---|---|---|---|
| Private Sector | | | | |
| Offshore Oil and gas | 1,250,292 | 119,252 | 1,369,544 | 33.5 |
| Fishing industry | 361,729 | 623,873 | 985,602 | 24.1 |
| Ports &shipping | 101,200 | 72,801 | 174,001 | 4.3 |
| Shipbuilding/ boatbuilding | 83,930 | 32,338 | 116,268 | 2.8 |
| Marine manufacturing | 63,000 | 22,190 | 85,190 | 2.1 |
| Marine construction | 31,644 | 28,956 | 60,600 | 1.5 |
| Ocean Tourism | 17,567 | 11,703 | 29,270 | 0.7 |
| Aquaculture | 10,150 | 12,368 | 22,518 | 0.6 |
| Public Sector | | | | |
| National Defence | 571,725 | 369,300 | 941,025 | 23.0 |
| Fisheries &Oceans | 103,478 | 148,928 | 252,406 | 6.2 |
| Ocean Research | 9,450 | 10,038 | 19,488 | 0.5 |
| Agriculture &Fisheries | 5,687 | 4,240 | 9,927 | 0.2 |
| Transport Canada | 5,079 | 3,571 | 8,650 | 0.2 |
| CNSOPB | 2,564 | 2,456 | 5,020 | 0.1 |
| Energy | 1,200 | 1,059 | 2,259 | 0.1 |
| Environment Canada | 711 | 651 | 1,362 | 0.0 |
| Total | 2,619,406 | 1,463,724 | 4,083,130 | 100.0 |

Source: Gardner, M. and J. Frost. 2005. *Economic Value of the Nova Scotia Ocean Sector.* Halifax: Gardner Pinfold Consulting Economists Ltd./MariNova Consulting Ltd. http://www.mar.dfo-mpo.gc.ca/pande/ecn/ns/e/ns15-e.asp.
Note: fishing industry includes commercial fishing and fish processing.

Table B3: Nova Scotia Ocean Sector Employment Impact, 1995-2001, (FTEs)

| | Direct | Spinoff | Overall Impact |
|---|---|---|---|
| 1995 | 31,119 | 30,576 | 61,695 |
| 1996 | 29,348 | 27,790 | 57,138 |
| 1997 | 28,966 | 28,815 | 57,781 |
| 1998 | 29,139 | 31,659 | 60,798 |
| 1999 | 30,123 | 36,435 | 66,558 |
| 2000 | 29,333 | 28,537 | 57,870 |
| 2001 | 30,123 | 28,554 | 58,677 |

Source: Gardner, M. and J. Frost. 2005. *Economic Value of the Nova Scotia Ocean Sector.* Halifax: Gardner Pinfold Consulting Economists Ltd./MariNova Consulting Ltd. http://www.mar.dfo-mpo.gc.ca/pande/ecn/ns/e/ns15-e.asp.

Table B4: Nova Scotia Ocean Sector Employment Impact by Activity, 2001, (FTE)

| | Direct | Spinoff | Overall Impact | % of total |
|---|---|---|---|---|
| Private Sector | | | | |
| Fishing industry | 10,231 | 13,828 | 24,059 | 41.0 |
| Ports & shipping | 1,719 | 1,475 | 3,194 | 5.4 |
| Offshore Oil and gas | 1,140 | 914 | 2,054 | 3.5 |
| Shipbuilding/ boatbuilding | 1,200 | 646 | 1,846 | 3.2 |
| Marine construction | 886 | 655 | 1,541 | 2.6 |
| Marine manufacturing | 550 | 437 | 987 | 1.7 |
| Aquaculture | 628 | 251 | 879 | 1.5 |
| Ocean Tourism | 606 | 242 | 848 | 1.4 |
| Public Sector | | | | |
| National Defence | 10,840 | 7,362 | 18,202 | 31.0 |
| Fisheries &Oceans | 1,920 | 2,308 | 4,228 | 7.2 |
| Ocean Research | 145 | 203 | 348 | 0.6 |
| Agriculture &Fisheries | 114 | 82 | 196 | 0.3 |
| Transport Canada | 77 | 69 | 146 | 0.3 |
| CNSOPB | 34 | 48 | 82 | 0.1 |
| Energy | 23 | 21 | 44 | 0.1 |
| Environment Canada | 10 | 13 | 23 | 0.0 |
| Total | 30,123 | 28,554 | 58,677 | 100.0 |

Source: Gardner, M. and J. Frost. 2005. *Economic Value of the Nova Scotia Ocean Sector.* Halifax: Gardner Pinfold Consulting Economists Ltd./MariNova Consulting Ltd. http://www.mar.dfo-mpo.gc.ca/pande/ecn/ns/e/ns15-e.asp.
Note: fishing industry includes commercial fishing and fish processing.

Table B5: Nova Scotia Ocean Sector Household Income Impact, 1996-2001, ($000s)

| | Direct | Spinoff | Overall Impact |
|---|---|---|---|
| 1995 | 1,167,254 | 922,523 | 2,089,777 |
| 1996 | 977,501 | 850,281 | 1,827,782 |
| 1997 | 993,527 | 893,573 | 1,887,100 |
| 1998 | 1,050,861 | 1,004,318 | 2,055,178 |
| 1999 | 1,208,973 | 1,163,405 | 2,372,377 |
| 2000 | 1,170,285 | 962,161 | 2,132,446 |
| 2001 | 1,179,539 | 966,290 | 2,145,829 |

Source: Gardner, M. and J. Frost. 2005. *Economic Value of the Nova Scotia Ocean Sector.* Halifax: Gardner Pinfold Consulting Economists Ltd./MariNova Consulting Ltd. http://www.mar.dfo-mpo.gc.ca/pande/ecn/ns/e/ns15-e.asp.

Table B6: Nova Scotia Ocean Sector Household Income Impact by Activity, 2001, ($000s)

| | Direct | Spinoff | Overall Impact | % of total |
|---|---|---|---|---|
| Private Sector | | | | |
| Fishing industry | 220,489 | 452,080 | 672,569 | 31.3 |
| Ports &shipping | 85,950 | 48,215 | 134,165 | 6.3 |
| Offshore Oil and gas | 68,292 | 29,893 | 98,185 | 4.6 |
| Shipbuilding/ boatbuilding | 48,000 | 21,134 | 69,134 | 3.2 |
| Marine construction | 22,151 | 21,403 | 43,554 | 2.0 |
| Marine manufacturing | 15,053 | 14,287 | 29,340 | 1.4 |
| Ocean Tourism | 11,410 | 7,924 | 19,334 | 0.9 |
| Aquaculture | 8,300 | 8,220 | 16,520 | 0.8 |
| Public Sector | | | | |
| National Defence | 571,725 | 240,681 | 812,406 | 37.9 |
| Fisheries &Oceans | 103,478 | 108,204 | 211,682 | 9.9 |
| Ocean Research | 9,450 | 6,644 | 16,094 | 0.7 |
| Agriculture &Fisheries | 5,687 | 2,675 | 8,362 | 0.4 |
| Transport Canada | 5,079 | 2,252 | 7,331 | 0.3 |
| CNSOPB | 2,564 | 1,584 | 4,148 | 0.1 |
| Energy | 1,200 | 682 | 1,882 | 0.1 |
| Environment Canada | 711 | 412 | 1,123 | 0.1 |
| Total | 1,179,539 | 966,290 | 2,145,829 | 100.0 |

Source: Gardner, M. and J. Frost. 2005. *Economic Value of the Nova Scotia Ocean Sector.* Halifax: Gardner Pinfold Consulting Economists Ltd./MariNova Consulting Ltd. http://www.mar.dfo-mpo.gc.ca/pande/ecn/ns/e/ns15-e.asp.

## Appendix C:

## Economic Impacts and Multiplier Effects for the Oil and Gas Sector

Table C1: Total Direct, Indirect and Induced Employment (2001)

| Sector | Direct | Indirect | Induced | Total |
|---|---|---|---|---|
| Oil and Gas and Related Activities | 15,005 | 15,090 | 10,480 | 40,575 |
| Pipeline Transportation | 1,630 | 1,535 | 1,195 | 4,360 |
| Total | 16,635 | 16,625 | 11,675 | 44,935 |

Source: Nicol, S., R. Sunderman, G. Horne, and J. Kjos. 2003. *Northeast BC Oil & Gas Sector Employment Analysis*. North Peace Economic Development Commission. Vancouver: Lions Gate Consulting Inc.

Table C2: Local & BC Labour Force for Oil & Gas Activity

| Direct Oil & Gas and Mining Activities | Northern Rockies RD | Peace River RD | Northeastern Total | Total BC |
|---|---|---|---|---|
| Oil & Gas Extraction | 95 | 930 | 1,025 | 1,800 |
| Supporting Activities for mining & oil & gas extraction | 155 | 1,395 | 1,550 | 4,265 |
| Natural gas distribution | 125 | 295 | 420 | 2,715 |
| Pipeline Transportation | | | | |
| Pipeline transportation of crude oil | 0 | 30 | 30 | 230 |
| Pipeline transportation of gas | 15 | 40 | 55 | 165 |

Source: Nicol, S., R. Sunderman, G. Horne, and J. Kjos. 2003. *Northeast BC Oil & Gas Sector Employment Analysis*. North Peace Economic Development Commission. Vancouver: Lions Gate Consulting Inc.

Table C3: Local Oil and Gas Labour Force in Northeastern BC (2001)

| Occupations | Total Northern Rockies RD | Tumbler Ridge | Chetwynd | Total Peace River RD | Total NE Area |
|---|---|---|---|---|---|
| Management | 15 | 10 | 0 | 195 | 200 |
| Business, Finance & Admin. | 50 | 25 | 10 | 265 | 280 |
| Natural & Applied Sciences | 15 | 25 | 0 | 135 | 125 |
| Health Occupations | 0 | 0 | 0 | 50 | 50 |
| Sales and Service | 10 | 15 | 0 | 75 | 70 |
| Trades, Transport Equipment | 65 | 160 | 30 | 745 | 620 |
| Unique to Primary Industry | 80 | 90 | 10 | 975 | 955 |
| Unique to Processing, Manufacturing & Utilities | 25 | 0 | 10 | 420 | 435 |
| Total | 260 | 325 | 60 | 2860 | 2735 |

Source: Nicol, S., R. Sunderman, G. Horne, and J. Kjos. 2003. *Northeast BC Oil & Gas Sector Employment Analysis*. North Peace Economic Development Commission. Vancouver: Lions Gate Consulting Inc.

Table C4: Direct spin off and total jobs associated with the Cohasset-Panuke and the Sable Offshore Energy Project in Nova Scotia

| Cohasset-Panuke | Direct | Spin-Off | Total |
|---|---|---|---|
| Development | 1080 | 2000 | 3080 |
| Production | 240 | 460 | 700 |
| | | | |
| SOEP | Direct | Spin-Off | Total |
| Development | 2970 | 8180 | 11100 |
| Production | 230 | 800 | 1030 |

Source: Ecos Environmental Consulting. 2004. An Education and Training Needs Assessment for the Oil and Gas Sector. UNBC Community-Collaborative Studies on British Columbia Offshore Oil and Gas. Prince George: Northern Land Use Institute, University of Northern British Columbia. Pg. 36.

Table C5: Direct jobs related to transport of personnel and / or supplies to offshore facilities in Atlantic Canada.

| Discipline | NOC | 2000 Base Case | 2004 Estimate |
|---|---|---|---|
| Deck Crew | 7433 | 88 | 274 |
| Engine Room Crew (Marine) | 7434 | 82 | 192 |
| Officer (Marine) | 2274 | 68 | 196 |
| Helicopter Pilot | 2271 | 12 | 26 |
| Helicopter Mechanic | 7315 | 12 | 26 |
| Refuelers | 6622 | 3 | 7 |

Source: Ecos Environmental Consulting. 2004. An Education and Training Needs Assessment for the Oil and Gas Sector. UNBC Community-Collaborative Studies on British Columbia Offshore Oil and Gas. Prince George: Northern Land Use Institute, University of Northern British Columbia. Pg. 32.
Note: NOC stands for National Occupation Classification.

Table C6: Types and numbers of offshore catering jobs that exist in Atlantic Canada.

| Discipline | NOC | 2000 Base Case | 2004 Estimate |
|---|---|---|---|
| Food Service Supervisor | 6212 | 8 | 22 |
| Cook | 6242 | 42 | 120 |
| Catering Staff | 6453 | 26 | 64 |
| Cleaner | 6661 | 52 | 102 |

Source: Ecos Environmental Consulting. 2004. An Education and Training Needs Assessment for the Oil and Gas Sector. UNBC Community-Collaborative Studies on British Columbia Offshore Oil and Gas. Prince George: Northern Land Use Institute, University of Northern British Columbia. Pg. 33.
Note: NOC stands for National Occupation Classification.

## Appendix D:

## Economic Impacts and Multiplier Effects for the Transportation Sector

Table D1: Annual Regional Inland Container Terminal Labour Requirements Within Northern B.C.

| Service Provider | Jobs Involved | Annual Person Years[1] |
|---|---|---|
| Managers | 8 | 8 |
| Supervisors | 12 | 12 |
| Administration | 5 | 5 |
| On-Site Warehouse and Transportation | 65 | 50 |
| Producer Warehouse and Transportation [2] | 100 | 60 |
| Freight Forwarders / Logistics [3] | 60 | 20 |
| Rail operations and maintenance [4] | 100 | 33 |
| Trucking [5] | 400 | 170 |
| Total | 750 | 358 |

Source: InterVISTAS Consulting Inc. 2006a. *Northern B.C. Container Terminal Opportunity Study*. Prince George: InterVISTAS Consulting Inc., p.43.

1 A person year is 1,832 hours.
2 Labour to send shipments to the container terminal has been considered and added.
3 Freight Forwarders / Logistics includes independent freight forwarders and logistics specialists with large manufacturers.
4 Rail operations and maintenance considers the labour required by the rail carriers separate of terminal operations to support terminal operations. The majority of rail employment is related to maintenance.
5 The majority of truckers would be owner/operators.
6 This analysis does not include construction employment related to the development of an intermodal terminal.

Table D2: Projected Provincial Economic Impacts of the Northern BC Container Terminal

| Type of Impact | Person Years of Employment | Wages ($ millions) | GDP ($ millions) | Economic Output ($ millions) |
|---|---|---|---|---|
| Direct | 358 | $17.1 | $34.6 | $83.7 |
| Indirect | 344 | $18.5 | $21.2 | $50.7 |
| Induced | 154 | $8.6 | $7.8 | $14.5 |
| Total | 856 | $44.2 | $63.6 | $148.9 |

Source: InterVISTAS Consulting Inc. 2006a. *Northern B.C. Container Terminal Opportunity Study*. Prince George: InterVISTAS Consulting Inc., p.44.

Table D3: The Economic Impact of the Vernon Regional Airport on the Regional Economy

| | Employment | Income ($millions) |
|---|---|---|
| Direct | 101 | 3.6 |
| Indirect | 376 | 13.9 |
| Induced | 325 | 12.0 |
| Total | 799 | 29.6 |

Source: GHK Consulting. 2006. *The Projected Economic Impact of Vernon Regional Airport*. Vernon, BC: Vernon Regional Airport Corporation, p.22.

Table D4: The Economic Impact of Vernon Regional Airport on Overall Output and GDP of British Columbia

| | GDP ($millions) | Impact ($millions) |
|---|---|---|
| Direct | 29.6 | 29.6 |
| Indirect | 7.1 | 16.9 |
| Induced | 6.2 | 11.3 |
| Total | 42.9 | 57.7 |

Source: GHK Consulting. 2006. *The Projected Economic Impact of Vernon Regional Airport*. Vernon, BC: Vernon Regional Airport Corporation, p.22.

Table D5: Summary of Economic Impacts of On-Going Operations at Villeneuve Airport

| Type of Impact | Jobs | Person Years | Wages ($ million) | GDP ($ million) | Economic Output ($ million) |
|---|---|---|---|---|---|
| Direct | 90 | 73 | $3.4 | $5.7 | $14.0 |
| Indirect | 73 | 59 | $2.4 | $3.9 | $9.5 |
| Induced | 55 | 45 | $1.9 | $3.3 | $7.1 |
| Total | 218 | 177 | $7.7 | $12.9 | $30.6 |

Source: InterVISTAS Consulting Inc. 2006b. *Summary Report: Economic Impact of Villeneuve and Cooking Lake Airports.* Vancouver: InterVISTAS Consulting Inc., p.5.

Table D6: Summary of Economic Impacts of On-Going Operations at Cooking Lake Airport

| Type of Impact | Jobs | Person Years | Wages ($ million) | GDP ($ million) | Economic Output ($ million) |
|---|---|---|---|---|---|
| Direct | 33 | 30 | $1.4 | $2.3 | $5.8 |
| Indirect | 27 | 24 | $1.0 | $1.6 | $3.9 |
| Induced | 20 | 19 | $0.8 | $1.4 | $2.9 |
| Total | 80 | 73 | $3.2 | $5.3 | $12.6 |

Source: InterVISTAS Consulting Inc. 2006b. *Summary Report: Economic Impact of Villeneuve and Cooking Lake Airports.* Vancouver: InterVISTAS Consulting Inc., p.5.

Table D7: Combined Summary of Villeneuve and Cooking Lake Airport Economic Impact of Ongoing Operations

| Type of Impact | Jobs | Person Years | Wages ($ million) | GDP ($ million) | Economic Output ($ million) |
|---|---|---|---|---|---|
| Direct | 123 | 103 | $4.8 | $8.0 | $19.8 |
| Indirect | 100 | 83 | $3.4 | $5.5 | $13.4 |
| Induced | 75 | 64 | $2.7 | $4.7 | $10.0 |
| Total | 298 | 250 | $10.2 | $18.2 | $43.2 |

Source: InterVISTAS Consulting Inc. 2006b. *Summary Report: Economic Impact of Villeneuve and Cooking Lake Airports.* Vancouver: InterVISTAS Consulting Inc., p.5.

Table D8. Economic Impact of the Airport and Tourism Industry in the Comox Valley.

| Type of Impact | Jobs | Person Years | Wages ($ million) | GDP ($ million) | Economic Output ($ million) |
|---|---|---|---|---|---|
| Direct | 11,300 | 9,100 | $237 | $367 | $701 |
| Indirect | 2,600 | 2,100 | $54 | $140 | $329 |
| Induced | 1,200 | 900 | $25 | $64 | $121 |
| Total | 3,800 | 12,100 | $316 | $571 | $450 |

Source: InterVISTAS Consulting Inc. 2007b. *The Economic Impact of The Comox Valley Airport and the Regional Tourism Industry.* Vancouver: InterVISTAS Consulting Inc., p.3

Table D9: Total Economic Impact of the Nelson Airport

| *Year* | *2003* | *2001* |
|---|---|---|
| Output ($ 000) | 5,938 | 10,707 |
| Jobs (FTE) | 28 | 41 |
| Wages and Salaries ($000) | 1,280 | 1,760 |

Source: Canadian Owners and Pilots Association and Nelson Pilots Association. n.d. *Nelson Airport*. http://www.copanational.org/down/NelsonAirport.doc, p.13. Accessed 4 February 2008.

Table D10: Economic Impact of the Nelson City Airport

| | | |
|---|---|---|
| Output ($000) | 2003 | 2001 |
| Direct Effects – Private Sector | $2,600 | $4,810 |
| Direct Effects - City | | |
| Rentals @ $37 | | |
| Fuel @ $30 | | |
| Grants* @ $30 | | |
| Total City Revenue | $99 | $57 |
| Indirect and Induced Effects | $3,239 | $5,840 |
| Total Outputs | $5,938 | $10,707 |
| Employment | | |
| Direct Effects (FTE) – Private sector | 12.50 | 18.50 |
| Direct Effects (FTE) – City | 0.25 | 0.25 |
| Total Direct FTE Jobs | 12.75 | 18.75 |
| Indirect and Induced Effects | 15.30 | 22.50 |
| Total FTE Jobs | 28.05 | 41.25 |
| Wages and Salaries ($000) | | |
| Direct Effects – Private Sector | $560 | $780 |
| Direct Effects – City | $22 | $20 |
| Total Direct Income | $582 | $800 |
| Indirect and Induced Effects | $698 | $960 |
| Total Employment Income | $1,280 | $1,760 |

Source: Canadian Owners and Pilots Association and Nelson Pilots Association. n.d. *Nelson Airport*. http://www.copanational.org/down/Nelson_Airport_Impact.xls. Accessed 4 February 2008.

Table D11: Direct Effects of Nelson Municipal Airport.

| | | 2003 | 2001 |
|---|---|---|---|
| Output | | | |
| | Private Sector | $2,600,000 | $4,810,000 |
| | City* (rentals, fuels, grants**) | $99,000 | $57,000 |
| | Total Direct Output | $2,699,000 | $4,867,000 |
| Employment | | | |
| | Private Sector | 12.50 | 18.50 |
| | City | 0.25 | 0.25 |
| | Total Direct Full Time Equivalent (FTE) Jobs | 12.75 | 18.75 |
| Wages & Salaries | | | |
| | Private Sector | $560,000 | $780,000 |
| | City | $22,000 | $20,000 |
| | Total Direct Income | $582,000 | $800,000 |

Source: Stantec Consulting Ltd. 2006. *Nelson Airport Lands Review*. Kelowna: Stantec Consulting Ltd., p.6.3.
* Total revenue (sales, rentals, fees & taxes) in 2005 was $82,974.
** Annualised revenue from received grants.

Table D12: Estimated Total Effects of Nelson Municipal Airport & Comparison of Multipliers.

| | | 2003 | 2001 |
|---|---|---|---|
| Output | | | |
| | Total Direct Output | $2,699,000 | $4,867,000 |
| | Using multiplier of 2.2 | $5,938,000 | $10,707,000 |
| | Using multiplier of 1.5 | $4,048,000 | $7,300,000 |
| | Difference | $1,890,000 | $3,407,000 |
| Employment | | | |
| | Total Direct FTE Jobs | 12.75 | 18.75 |
| | Using multiplier of 2.2 | 28.05 | 41.25 |
| | Using multiplier of 1.5 | 19.13 | 28.13 |
| | Difference | 8.92 | 13.12 |
| Wages & Salaries | | | |
| | Total Direct Income | $582,000 | $800,000 |
| | Using multiplier of 2.2 | $1,280,000 | $1,760,000 |
| | Using multiplier of 1.5 | $873,000 | $1,200,000 |
| | Difference | $407,000 | $560,000 |

Source: Stantec Consulting Ltd. 2006. *Nelson Airport Lands Review*. Kelowna: Stantec Consulting Ltd., p.6.4.

Table D13: Economic Impacts of Airports in Northern BC and Northern Alberta

| | Northern Alberta Airports | Northern BC Airports |
|---|---|---|
| Total Employment (Direct, Indirect & Induced FTE) associated with airport related activity | 1,980 | 1,670 |
| Total GDP as a result of airport related activity at all study airports | $147 million | $114 million |

Source: Sypher (A Division of Jacobs Consultancy, Inc.). 2006. *Alberta – British Columbia Northern Airports Strategy.* Ottawa: Jacobs Consultancy Inc., p.19.

**Appendix E:**

**Economic Impacts and Multiplier Effects Across the Tourism Sector**

Table E1: Person years of employment and labour income generated from business operations and investment of in the nature-based sector of the tourism industry in British Columbia

| | Employment Impacts | | | |
|---|---|---|---|---|
| Operations | Direct | Indirect | Induced | Total |
| Person Years | 13,927.5 | 4,434.8 | 2,413.6 | 20,775.9 |
| Labour Income ($ millions) | $321.6 | $146.9 | $87.8 | $556.3 |
| Investment | | | | |
| Person Years | 130.3 | 50.6 | 31.8 | 212.6 |
| Labour Income ($ millions) | $4.7 | $1.9 | $1.2 | $7.7 |

Source: Research Services, Tourism British Columbia. 2005. *Characteristics of the Commercial Nature-Based Tourism Industry in British Columbia.* Victoria: Tourism British Columbia., p.10.

Table E2: Client spending, revenues, GDP and federal, provincial and municipal taxes generated from operations and investment of nature-based tourism businesses in British Columbia

| | $ millions | | | |
|---|---|---|---|---|
| Operations | Direct | Indirect | Induced | Total |
| Client Spending | $908.85 | | | |
| Revenues | $854.32 | $445.60 | $252.28 | $1,552.19 |
| GDP | $429.46 | $213.34 | $140.10 | $782.90 |
| Taxes -Total | $135.87 | $46.45 | $24.38 | $206.69 |
| Federal | $78.59 | $20.07 | $11.55 | $110.21 |
| Provincial | $49.30 | $20.16 | $9.04 | $78.50 |
| Municipal | $7.98 | $6.22 | $3.78 | $17.98 |
| | | | | |
| Investment | $30.68 | | | |
| Revenues | $15.09 | $5.48 | $3.32 | $23.90 |
| GDP | $6.59 | $2.88 | $1.84 | $11.32 |
| Taxes –Total | $0.42 | $0.17 | $0.33 | $0.93 |
| Federal | $0.16 | $0.46 | $0.11 | $0.32 |
| Provincial | $0.18 | $0.07 | $0.16 | $0.42 |
| Municipal | $0.08 | $0.05 | $0.07 | $0.19 |

Source: Research Services, Tourism British Columbia. 2005. *Characteristics of the Commercial Nature-Based Tourism Industry in British Columbia.* Victoria: Tourism British Columbia., p.10.

Table E3: Total economic impact of visitor spending for the 2004 calendar year in the Squamish area

| Industry Sector | Direct | Indirect | Total |
|---|---|---|---|
| Accommodation | $91,599.86 | $42,135.93 | $133,735.79 |
| Food and Beverage | $368,456.38 | $187,912.75 | $556,369.13 |
| Recreation | $186,485.65 | $126,810.24 | $313,295.89 |
| Retail Trade | $189,272.37 | $92,743.46 | $282,015.83 |
| Wholesale Trade | | $83,066.58 | $83,066.58 |
| Production | | $84,452.80 | $84,452.80 |
| Total | $835,814.25 | $532,668.97 | $1,452,936.02 |

Source: Morris, R.P. 2007. *The Contribution of Outdoor-Based Recreation Opportunities to Local Economies: The Economic Impacts of Rock-Climbing to the Squamish Region.* Unpublished Masters Thesis. Burnaby, BC: Simon Fraser University. http://www.rem.sfu.ca/pdf/RandyMorris.pdf, p.95.

Table E4: Total economic impact of visitor spending from rock climbing for the 2004 climbing season in the Squamish area

| Industry Sector | Direct | Indirect | Total |
|---|---|---|---|
| Accommodation | $64,596.67 | $29,714.47 | $94,311.13 |
| Food and Beverage | $259,837.24 | $132,516.99 | $392,354.23 |
| Recreation | $131,510.59 | $89,427.20 | $220,937.79 |
| Retail Trade* | $133,475.80 | $65,403.14 | $198,878.94 |
| Wholesale Trade | | $58,578.96 | $58,578.96 |
| Production | | $59,556.52 | $59,556.52 |
| Total | $588,658.19 | $435,197.28 | $1,024,617.57 |

Source: Morris, R.P. 2007. *The Contribution of Outdoor-Based Recreation Opportunities to Local Economies: The Economic Impacts of Rock-Climbing to the Squamish Region.* Unpublished Masters Thesis. Burnaby, BC: Simon Fraser University. http://www.rem.sfu.ca/pdf/RandyMorris.pdf, p.95.
*Retail trade includes climbing-gear, groceries, and gas and oil

Table E5: Local Tourism Sector Employment for Haida Gwaii / Queen Charlotte Islands

| | Direct | Indirect | Total | % of Total for Islands |
|---|---|---|---|---|
| Employment (# jobs) | 269 | 23 | 292 | 12% |
| Before-Tax Income ($mill) | 4.5 | 0.2 | 4.7 | 5% |

Source: Ministry of Sustainable Resource Management, Sustainable Resource Development Branch. 2004. *Summary of Current Economic Conditions, Haida Gwaii / Queen Charlotte Islands.* Victoria: Ministry of Sustainable Resource Management, p.10.

Table E6: Economic Impacts of All Tourism in the Morice Land & Resource Management Plan Area

| | Direct | Indirect | Induced | Total |
|---|---|---|---|---|
| Tourist Expenditure | $6,654,000 | | | |
| Commercial Tourism Output | $6,221,000 | $2,489,620 | $1,816,347 | $10,526,967 |
| GDP (Value-Added) | $3,524,000 | $1,509,000 | $1,254,000 | $6,287,000 |
| Employment (FTEs) | 98.0 | 52.7 | 34.8 | 185.4 |
| Provincial Taxes and Levies | $384,000 | $194,000 | $314,000 | $892,000 |

Source: Pacific Analytics Inc., Laing & McCulloch Forest Management Services Ltd., and Northwest Planning Group Ltd. n.d. *Morice Land & Resource Management Plan Base Case Socio-Economic Assessment.* Smithers, BC: Ministry of Sustainable Resource Management, Skeena Region, p.70.

Table E7: Economic Impacts of Guide Outfitting Overlapping the Morice Land & Resource Management Plan Area

| | Direct | Indirect | Induced | Total |
|---|---|---|---|---|
| Tourist Expenditure | $2,755,000 | | | |
| Commercial Tourism Output | $2,639,000 | $1,588,000 | $1,376,000 | $5,603,000 |
| GDP (Value-Added) | $1,696,000 | $1,069,000 | $949,000 | $3,714,000 |
| Employment (FTEs) | 52.5 | 36.6 | 25.3 | 114.5 |
| Provincial Taxes and Levies | $203,000 | $128,000 | $222,000 | $553,000 |

Source: Pacific Analytics Inc., Laing & McCulloch Forest Management Services Ltd., and Northwest Planning Group Ltd. n.d. *Morice Land & Resource Management Plan Base Case Socio-Economic Assessment.* Smithers, BC: Ministry of Sustainable Resource Management, Skeena Region, p.63.

Table E8: Economic Impacts of Additional Spending by Non-Resident Hunters in the Morice Land & Resource Management Plan Area

| | Direct | Indirect | Induced | Total |
|---|---|---|---|---|
| Tourist Expenditure | $138,000 | | | |
| Commercial Tourism Output | $130,000 | $61,000 | $24,000 | $215,000 |
| GDP (Value-Added) | $73,000 | $28,000 | $16,000 | $117,000 |
| Employment (FTEs) | 2.6 | 0.5 | 0.3 | 3.3 |
| Provincial Taxes and Levies | $8,000 | $4,000 | $4,000 | $16,000 |

Source: Pacific Analytics Inc., Laing & McCulloch Forest Management Services Ltd., and Northwest Planning Group Ltd. n.d. *Morice Land & Resource Management Plan Base Case Socio-Economic Assessment.* Smithers, BC: Ministry of Sustainable Resource Management, Skeena Region, p.64.

Table E9: Total Economic Impacts of Guided Angling in the Morice Land & Resource Management Plan Area

| | Direct | Indirect | Induced | Total |
|---|---|---|---|---|
| Tourist Expenditure | $2,294,000 | | | |
| Commercial Tourism Output | $2,066,000 | $239,000 | $78,000 | $2.383,000 |
| GDP (Value-Added) | $939,000 | $136,000 | $95,000 | $1,170,000 |
| Employment (FTEs) | 12.8 | 5.5 | 2.7 | 21.4 |
| Provincial Taxes and Levies | $86,000 | $24,000 | $38,000 | $148,000 |

Source: Pacific Analytics Inc., Laing & McCulloch Forest Management Services Ltd., and Northwest Planning Group Ltd. n.d. *Morice Land & Resource Management Plan Base Case Socio-Economic Assessment.* Smithers, BC: Ministry of Sustainable Resource Management, Skeena Region, p.67.

Table E10: Economic Impacts of Additional Spending by Non-Local Guided Anglers in the Morice Land & Resource Management Plan Area

| | Direct | Indirect | Induced | Total |
|---|---|---|---|---|
| Tourist Expenditure | $238,000 | | | |
| Commercial Tourism Output | $220,000 | $110,000 | $50,000 | $380,000 |
| GDP (Value-Added) | $130,000 | $50,000 | $30,000 | $210,000 |
| Employment (FTEs) | 4.4 | 0.9 | 0.4 | 5.7 |
| Provincial Taxes and Levies | $10,000 | $6,000 | $6,000 | $22,000 |

Source: Pacific Analytics Inc., Laing & McCulloch Forest Management Services Ltd., and Northwest Planning Group Ltd. n.d. *Morice Land & Resource Management Plan Base Case Socio-Economic Assessment.* Smithers, BC: Ministry of Sustainable Resource Management, Skeena Region, p.67.

Table E11: Economic Impacts of Other Commercial Tourism in the Morice Land & Resource Management Plan Area

| | Direct | Indirect | Induced | Total |
|---|---|---|---|---|
| Tourist Expenditure | $651,000 | | | |
| Commercial Tourism Output | $626,000 | $231,000 | $178,347 | $1,035,967 |
| GDP (Value-Added) | $376,000 | $106,000 | $94,000 | $576,000 |
| Employment (FTEs) | 15.0 | 7.0 | 5.0 | 27.0 |
| Provincial Taxes and Levies | $47,000 | $16,000 | $28,000 | $91,000 |

Source: Pacific Analytics Inc., Laing & McCulloch Forest Management Services Ltd., and Northwest Planning Group Ltd. n.d. *Morice Land & Resource Management Plan Base Case Socio-Economic Assessment.* Smithers, BC: Ministry of Sustainable Resource Management, Skeena Region, p.69.

Table E12: Total Economic Impact of the RBC Royal Bank Cup

| | British Columbia | Prince George | Rest of Province |
|---|---|---|---|
| Initial Expenditure | $1,544,226 | $1,544,226 | $0 |
| | Gross Domestic Product | | |
| Direct Impact | $546,749 | $546,749 | $0 |
| Indirect Impact | $731,378 | $246,396 | $484,982 |
| Induced Impact | $657,373 | $300,743 | $356,630 |
| Total Impact | $1,935,500 | $1,093,888 | $841,612 |
| | Industry Output | | |
| Direct & Indirect | $2,555,507 | $1,871,778 | $683,729 |
| Induced Impact | $1,294,556 | $592,365 | $702,191 |
| Total Impact | $3,850,063 | $2,464,143 | $1,385,920 |
| | Wages & Salaries | | |
| Direct Impact | $427,552 | $427,552 | $0 |
| Indirect Impact | $516,016 | $248,582 | $267,434 |
| Induced Impact | $470,592 | $226,984 | $243,608 |
| Total Impact | $1,414,160 | $903,119 | $511,041 |
| | Employment (Full-year jobs) | | |
| Direct Impact | 15.8 | 15.8 | 0.0 |
| Indirect Impact | 11.4 | 5.4 | 6.0 |
| Induced Impact | 11.2 | 6.7 | 4.5 |
| Total Impact | 38.5 | 28.0 | 10.5 |
| | Total Taxes | | |
| Federal | $453,314 | $285,436 | $167,878 |
| Provincial | $316,636 | $209,335 | $107,301 |
| Municipal | $184,633 | $133,825 | $50,808 |
| Total | $954,583 | $628,597 | $325,986 |

Source: Canadian Sport Tourism Alliance. 2007. *2007 RBC Royal Bank Cup Economic Impact Assessment*. Ottawa: Canadian Sport Tourism Alliance, p.11.

Table E13: Cariboo Chilcotin Coast Tourism Total Employment (2006)

| Cariboo Chilcotin Coast | Employment (Person Years) | Income | GDP | Output |
|---|---|---|---|---|
| Direct | 2,350 | $56,909,000 | $79,921,000 | $129,825,000 |
| Indirect | 480 | $11,782,000 | $28,493,000 | $68,749,000 |
| Induced | 230 | $5,458,000 | $13,384,000 | $25,110,000 |
| Total | 3,050 | $74,149,000 | $121,798,000 | $223,685,000 |

Source: InterVISTAS Consulting Inc. 2007a. *Economic Opportunities Study for Tourism in North & Central British Columbia: Phase II – Potential Economic Impact of the Tourism Industry in Northern Central British Columbia.* Vancouver: InterVISTAS Consulting Inc., p.7.

Table E14: Northern B.C. Tourism Total Employment (2006)

| Cariboo Chilcotin Coast | Employment (Person Years) | Income | GDP | Output |
|---|---|---|---|---|
| Direct | 6,000 | $154,986,000 | $193,154,000 | $325,099,000 |
| Indirect | 1,200 | $32,000,000 | $73,759,000 | $175,648,000 |
| Induced | 600 | $14,537,000 | $34,030,000 | $63,191,000 |
| Total | 7,800 | $201,523,000 | $300,943,000 | $563,938,000 |

Source: InterVISTAS Consulting Inc. 2007a. *Economic Opportunities Study for Tourism in North & Central British Columbia: Phase II – Potential Economic Impact of the Tourism Industry in Northern Central British Columbia.* Vancouver: InterVISTAS Consulting Inc., p.7.