

3.0 DESCRIPTION OF LOCAL COMMUNITIES AND SOCIO-ECONOMIC CONDITIONS

3.1 LAND USE

Avalon's Nechalacho Mine site is located at Thor Lake in the Mackenzie Mining District of the Northwest Territories, within the North Slave Region, about 5 km north of the Hearne Channel of Great Slave Lake and approximately 100 km southeast of the City of Yellowknife (Figure 3.1-1).

The proposed TLP has two site components:

- an underground mine and flotation plant (Nechalacho Mine and Flotation Plant site) at the Thor Lake Property; and
- a hydrometallurgical plant (Hydrometallurgical Plant site) at the brownfields site of the former Pine Point Mine.

The former Pine Point Mine site is located 85 km east of Hay River, NWT and 102 km west of Fort Resolution on the south shore of Great Slave Lake, within the South Slave Region. This area comprises the largest brownfields site in the NWT, estimated at approximately 3,425 ha using digital image analysis, of which approximately 1,771 ha are located within the Hydrometallurgical Plant local study area.

The two Project sites are within the Akaitcho Dene asserted traditional territory and are subject to the comprehensive land claim negotiation between the Akaitcho Dene First Nations (Yellowknives Dene First Nation (Dettah), Yellowknives Dene First Nation (N'Dilo), Lutsel K'e Dene First Nation, and Deninu Ku'e First Nation) and the federal government.

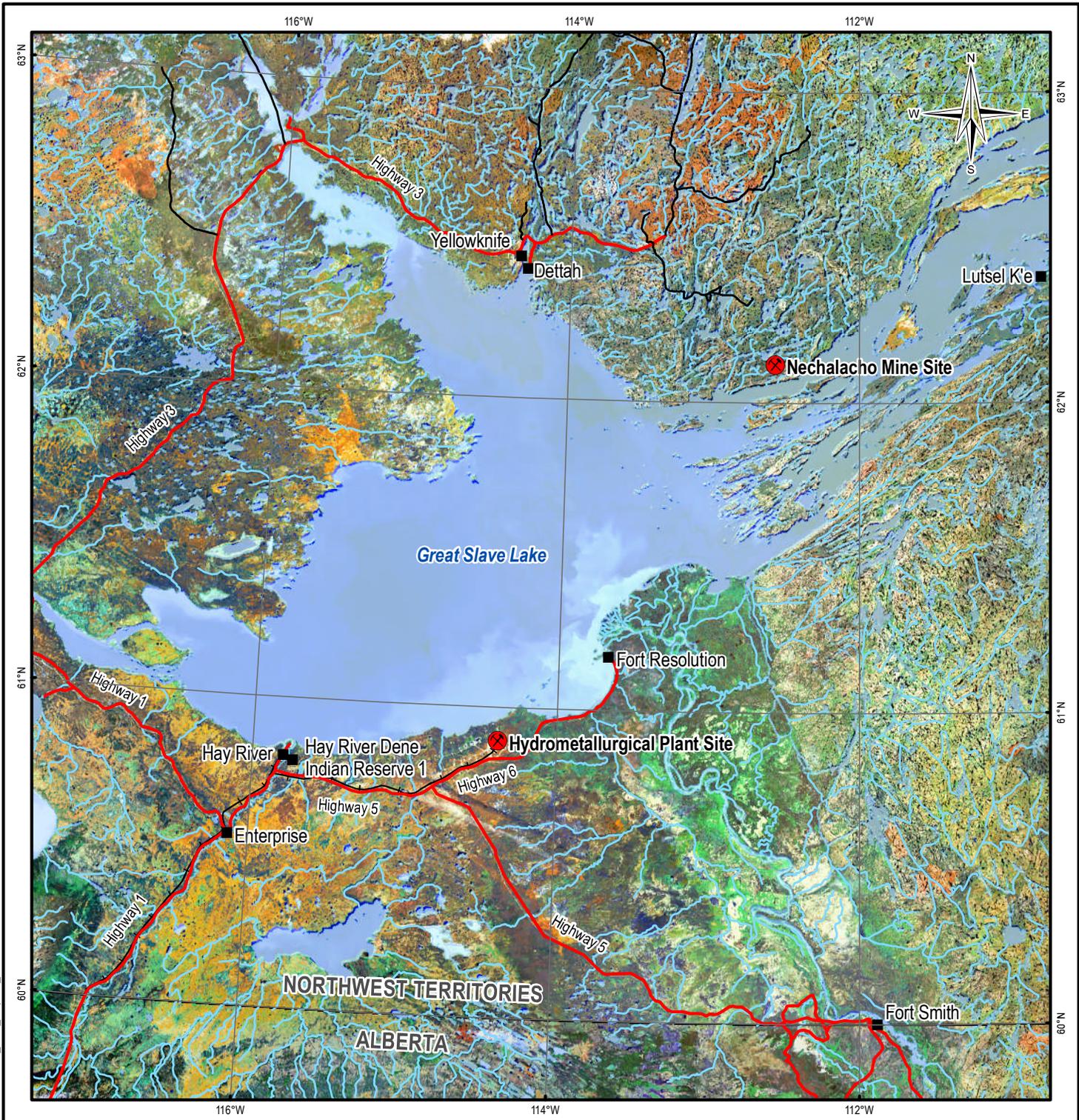
The Akaitcho Dene First Nations (ADFN), the Government of Canada, and the Government of the Northwest Territories are currently working to achieve a lands, resources and governance agreement (INAC 2007a). The Akaitcho Interim Measures Agreement (IMA) was signed in Lutsel K'e in 2001. This agreement established temporary arrangements that clarify the role of the ADFN in resource management decisions in their region (INAC 2007a).

Members of the ADFN typically reside in communities surrounding Great Slave Lake including:

- Deninu Ku'e First Nation – residing in Deninu Ku'e or Fort Resolution;
- Lutsel K'e Dene First Nation – residing in Lutsel K'e; and
- N'Dilo and Dettah (Yellowknives Dene) First Nations – residing in N'Dilo or Dettah.

It is important to note that there are often multiple spellings for the communities located within the RSA. In particular the Deninu Ku'e First Nation has two different spellings: Deninu Ku'e or Deninu K'ue. The former is predominantly used in this report.

The TLP is located outside of municipal and settlement region boundaries, and is therefore not subject to their land use plans (INAC 2007a).



LEGEND

- Site Location
- Community
- Road
- Winter Road
- Railroad
- Watercourse
- Waterbody

NOTES

Base data source: ESRI Data Maps

ISSUED FOR USE

THOR LAKE PROJECT

Communities Located Near Project Sites

PROJECTION NWT Lambert		DATUM NAD83	
Scale: 1:2,000,000			
40	20	0	40
FILE NO. V15101007_DAR_Map027_Communities.mxd			
PROJECT NO. V15101007.006	DWN SL	CKD TP	REV 1
OFFICE EBA-VANC	DATE May 17, 2011		



Figure 3.1-1

In areas subject to unsettled claims, resource management becomes the responsibility of the Mackenzie Valley Land and Water Board. As such, land use is regulated under the *Mackenzie Valley Resource Management Act* and the *Mackenzie Valley Land Use Regulations*. Water use is regulated under the *NWT Waters Act* and *NWT Waters Regulation*. There are no land use plans for this region.

Both proposed Project sites are located within the Akaitcho Dene traditional territory in the North and South Slave regions. The product from the Hydrometallurgical Plant site will be shipped through Hay River, which is located in the Dehcho region.

3.1.1 Non-Traditional Land Use

3.1.1.1 Historic

Non-Traditional land use in the Great Slave Lake region included commercial fishing and mining activities. Commercial fishing began in Great Slave Lake in the early 1940s. Sustainable production in 1944 was estimated at 1361-2268 metric tonnes. In 1945, commercial production began and by 1949 there were 14 commercial fishing companies operating in the fishery. The number of fishing companies declined to four by 1969 when the Freshwater Fish Marketing Corporation took over the buying and marketing of fish. Commercial fishing continues on the Great Slave Lake, but to a much smaller extent than historically (NWT Fishermen's Federation 2005)

Highwood Resources Ltd. was first to discover rare metal mineralization in the Thor Lake area in 1976. From 1976 to 2004, Highwood and its partners conducted exploration and development work, including geological mapping, sampling, geophysical surveys and drilling of approximately 200 holes. The exploration was followed by underground development work, bulk sampling metallurgical test work and market studies on the North 'T' deposit. In 2005, Avalon purchased the Thor Lake property outright from Beta Minerals Inc.; the successor company to Highwood (Avalon Rare Metals Inc. ND).

Geologic exploration south of Great Slave Lake dates from 1898. Prospectors heading for the Klondike gold rush staked claims on outcrops of oxidized sulphides. Intermittent exploration continued until 1948 when Cominco Ltd. began major exploration programs that continued until 1955 (Giroux and McCartney 2001).

Cominco Ltd. operated the Pine Point Mine from 1964 to 1987. The mine produced a total of 64,259,570 tonnes of ore from 52 open pits and two underground deposits. Low base metal prices, high power consumption related to pumping water, and acquisition of another deposit with better grades and mining characteristics prompted Cominco to close the Pine Point Mine in 1987. Reclamation of the historic mine site, including removal of the town site and railroad, was completed in 1991 (Giroux and McCartney 2001).

3.1.1.2 Present

Present land uses near the two proposed Project sites include mineral exploration, harvesting, recreation and tourism.

The Blachford Lake Lodge is located approximately 8 kilometers from the Thor Lake site area. Blachford Lake Lodge is an all season eco lodge that hosts tourists, meetings, conferences, weddings and other special events. The lodge offers snowmobile tours in the winter (Blachford Lake Lodge and Conference Center ND).

The area surrounding Great Slave Lake offers a variety of recreational opportunities. Visitors to the area in the summer months participate in activities such as boating, fishing and hiking (Northwest Territories Canada ND). During the winter months, recreational activities include snowmobiling, ice skating, ice fishing, snow shoeing, cross country skiing and dog mushing.

Recreational and subsistence hunting and fishing also occur regularly in the North, South and East Slave regions (EBA 2011a,b,c).

Northern Transport Company Ltd. operates a commercial barging service on Great Slave Lake. The barge serves the communities of Lutsel K'e and Fort Reliance from the Port of Hay River (Northern Transport Company Ltd. 2011).

In the South Slave region there are multiple industries operating exploration or mining projects for resources including zinc, diamonds, and oil and gas. There is also potential to expand the region's hydroelectric capacity. The South Slave Region is also home to Wood Buffalo, one of Canada's largest national parks (GNWT IT NDb).

3.1.2 Traditional Land Use

Traditionally, the Dene were accomplished hunters who travelled as far north as the Arctic coast on snowshoes. The Dene lived in extended family groups that travelled along traditional routes within their hunting land. Groups frequently met at customary sites, and were brought together by fish spawning or wildlife movements.

The Akaitcho Dene historically occupied areas north, east and south of Great Slave Lake. Two Dene groups within the Akaitcho Territory are the Chipewyan, who live east and south of the Great Slave Lake, and the Yellowknives, who lived north of Great Slave Lake.

Prior to the making of Treaty in 1900 with the British Crown, there were 26 villages from Enodah to Reliance and a further 23 villages on the south side of Great Slave Lake. Due to the epidemics, the Akaitcho Dene numbers were reduced. The survivors grouped together in Dettah, Enodah, N'Dilo, Lutsel K'e, Reliance and Deninu Ku'e.

In 1900, a treaty was negotiated between the Akaitcho, as represented by Chief Emil Drygeese, and the British Crown. The treaty included the Akaitcho Territory to the north and east of Great Slave Lake (Akaitcho Treaty 8 ND).

In 1916, Canada informed the Dene that they could no longer hunt migratory birds due to the Migratory Birds Convention that prohibited the hunting of migratory birds in the spring. The Dene considered the Convention as a violation of the Treaty. As a result of these actions, a commissioner was sent in 1920 to assure the Dene that the Crown wanted the Treaty and that they could continue to live as they had always lived including hunting migratory birds. The Dene also requested an area where only Dene could hunt.

Subsequently, two areas were withdrawn and surveyed as exclusive hunting, trapping, fishing and gathering areas of the Akaitcho Dene.

One area was known as the Yellowknives Game Preserve and the other area was known as the Slave River Preserve. These Preserves were in place until the 1950s. The Dene and the Crown are currently working to resolve outstanding land, resource and governance issues related to the Treaty through negotiations.

In August 2006, the three parties signed an Interim Land Withdrawal Agreement that identified and protected certain areas while an Akaitcho Agreement was being negotiated. The next step is to continue working towards signing an Agreement-in-Principle (AIP), which will lay out the principles for an agreement between the parties on land, resources and governance.

Traditional Knowledge Studies were conducted with the Yellowknives Dene First Nations, Lutsel K'e Dene First Nations, Deninu Ku'e First Nations, and Fort Resolution Metis regarding the two proposed Project sites. The studies reveal that hunting and trapping of mammals, birds and fish historically occurred near both Project sites. Harvesting of mammals and birds occurred year-round, while the harvested species varied with the season. Participants of the Traditional Knowledge Studies noted that fish were harvested in Big Buffalo River, Great Slave Lake (near the historic Pine Point site), and Thor Lake (EBA 2011a,b,c).

Participants of the studies noted that groups of people historically lived along the shoreline of Great Slave Lake. It was also noted that there are important historic and current travel routes on the Great Slave Lake between Yellowknife, Fort Reliance, and Lutsel K'e (EBA 2011a,b,c). The Dene Nation Mapping Project is currently developing a comprehensive map of all the trails utilized in the Great Slave region.

Culturally significant sites have been identified in the general areas near the Thor Lake and Pine Point sites, but not within the proposed development sites. Culturally significant sites include: graves, historic villages, treaty sites and spiritual sites (EBA 2011a,b,c).

3.1.2.1 Yellowknives Dene First Nation Traditional Land Use

Traditional Knowledge Studies were completed with the YKDFN for the Thor Lake and Pine Point properties. A total of 17 YKDFN individuals (14 men, 3 women) in N'Dilo and Dettah were interviewed. All of the study participants indicated that they lived in the Akaitcho Traditional Territory their entire lives and had extensive family roots in the area (EBA 2011a).

All the study participants indicated that they or their families had been to the proposed Thor Lake site area and/or the greater general area in which the Project site is located. When asked how long they and/or their families have used the area, all of the participants indicated historical use ranging from their "entire lifetime" to "many generations". The study participants reported extensive historic and/or current use of the Thor Lake site and/or greater general area including activities such as: hunting, trapping and fishing.

Participants indicated that the area is typically accessed by boat in the summer and by skidoo or dogsled in the winter (EBA 2011a).

A total of 11 of the 17 YKDFN participants reported that they and/or their families had been to the former Pine Point Mine site area. Of the 11 who reported visiting the site, five reported historical and/or current hunting, trapping or fishing activities. Three of the participants indicated that they had worked at the Pine Point Mine site when it was in operation (EBA 2011a).

All of the participants indicated that they had historically and/or currently harvested animals (mammals and birds) in the geographic North Slave region. Specific harvesting practices varied; however, participants indicated that fur-bearing animals are typically harvested from late fall (after freeze-up) through spring, game animals are harvested year-round when available, waterfowl are typically harvested from spring until late fall, and game birds are normally harvested year-round. A comprehensive list of harvested species is provided in Section 3.6 Traditional Harvesting Activities, as well as in EBA (2011a).

Fish are also traditionally harvested throughout the geographic North Slave Region. All of the participants indicated that they had either historically or currently harvested fish in the region. A comprehensive list of harvested fish species is provided in Section 3.6 Traditional Harvesting Activities, as well as in EBA (2011a).

It was also noted by one participant that groups of people historically lived all along the shoreline of Great Slave Lake at Hearne Channel. This individual added that there are important travel routes all over Great Slave Lake between Yellowknife, Fort Reliance and Lutsel K'e that were historically or are currently used (EBA 2011a).

All participants indicated that they depend on the North Slave region for their income. Each person interviewed said that they historically or currently hunt and trap as a source of income. In addition to traditional income, employment in industry was also cited as a source of income, including three participants who said they had worked in the former Pine Point Mine site area. These participants reported working in highway construction, exploration and mine operations (EBA 2011a).

3.1.2.2 Deninu Ku'e First Nation and Fort Resolution Metis Council Traditional Land Use

Traditional Knowledge Studies were completed with the Deninu Ku'e First Nation and Fort Resolution Metis Council for the Thor Lake and Pine Point properties. Twelve DKFN (10 men, 2 women) and seven FRMC (all men) members were interviewed (EBA 2011b).

All of the participants reported that they or their families have been to the former Pine Point Mine site area and/or greater general area in which the Project site is located. When asked how long they and/or their families have used the area, participants indicated historical use ranging from approximately one generation to "hundreds of years" (EBA 2011b).

When asked about the proposed Thor Lake site area, 17 of the 19 study participants indicated that either they or their families have been to the proposed Thor Lake site area and/or the greater general area in which the Project site is located. When asked how long

they and/or their families have used the area, participants indicated historical use ranging from one visit (i.e. a site tour) to “centuries” (EBA 2011b).

All of the participants indicated that they historically and/or currently harvest animals (mammals and birds) in the geographic South Slave region. While specific harvesting practices varied, participants generally indicated that fur-bearing animals are typically harvested from late fall through spring, game animals are harvested year-round when they are available, waterfowl are typically harvested from spring till late fall, and game birds are normally harvested year-round when they are available. A comprehensive list of harvested species is provided in Section 3.6 Traditional Harvesting Activities, as well as in EBA (2011b).

Fish are also traditionally harvested throughout the geographic South Slave Region. All of the participants indicated that they had either historically or currently harvested fish in the region. A comprehensive list of harvested fish species is provided in Section 3.6 Traditional Harvesting Activities, as well as in EBA (2011b).

Eighteen of the 19 participants reported knowledge of people who historically lived in the former Pine Point Mine site area and/or greater area. Six of these participants generally reported that people historically lived, travelled and harvested throughout the greater site area and southern shoreline of Great Slave Lake (EBA 2011b).

When asked about the Thor Lake site area, fifteen participants reported knowledge of people that historically lived in the site area and/or greater area. Within this group, ten participants generally reported that people historically lived, travelled and harvested throughout the greater site area and northern shoreline of Great Slave Lake (EBA 2011b).

All participants indicated that they depend on the geographic South Slave region for their income. Each person interviewed said that they historically or currently hunt and trap as a source of income. In addition to traditional income, employment in industry was also cited as a source of income, including four participants who said they had worked in the former Pine Point Mine site area. Two of these participants worked at the Pine Point Mine when it was in operation, one participant staked claims, and one participant worked as a diamond driller in the area in 1967 and 1974.

3.1.2.3 Lutsel K'e Dene First Nation Traditional Land Use

Traditional Knowledge Studies were completed with 13 members (10 men, 3 women) of the Lutsel K'e Dene First Nation for the Thor Lake and Pine Point properties (EBA 2011c).

All of the study participants indicated that either they or their families have been to the proposed Thor Lake site area and/or the greater general area in which the Project site is located. When asked how long they and/or their families have used the area, all of the participants indicated historical use ranging from approximately 50 years to many generations (EBA 2011c).

All of the participants indicated that they historically and/or currently harvest animals (including mammals and birds) in the East Arm area of Great Slave Lake. While specific harvesting practices varied, participants indicated that fur-bearing animals are typically

harvested from late fall through spring, game animals are harvested year-round when they are available, waterfowl are typically harvested in the spring and fall, and game birds are normally harvested year-round. A comprehensive list of harvested species is provided in Section 3.6 Traditional Harvesting Activities, as well as in EBA (2011c).

Fish are traditionally harvested throughout the East Arm area of Great Slave Lake. All of the interviewed participants indicated that they either historically or currently harvest fish in the region. A comprehensive list of harvested fish species is provided in Section 3.6 Traditional Harvesting Activities, as well as in EBA (2011c).

Participants cited specific locations in the greater Thor Lake site area where people historically lived and/or had cabins including Beaulieu River, Blanchet Island, Francois Bay, Gros Cap, Keith Island, Narrows (east of the proposed Thor Lake site), Narrow Island, Simpson Islands, Taltheilei Narrows and the entire north shore of Great Slave Lake (EBA 2011c).

When asked about the former Pine Point Mine site area, three participants indicated that people historically lived in the site area and/or greater area. Within this group, participants noted that people historically lived in the town of Pine Point when the former Pine Point Mine was in operation. One participant reported that homes were historically located in the area before they were born, and another participant indicated that a cabin is located at the mouth of Big Buffalo River (EBA 2011c).

All participants indicated that they depend on the East Arm Area of Great Slave Lake for their income. Each person interviewed said that they historically or currently hunt and trap as a source of income. In addition to traditional income, employment in industry was also cited as a source of income, including four participants who said they had worked in exploration and/or operations at the former Pine Point Mine (EBA 2011c).

3.2 PHYSICAL INFRASTRUCTURE

There is currently there is limited infrastructure at the Nechalacho Mine and Flotation Plant site. Some infrastructure remains from historic the Pine Point Mine at the Hydrometallurgical Plant site.

3.2.1 Nechalacho Mine and Flotation Plant Site

The Nechalacho Mine and Flotation Plant site is located approximately 5 km north of the Hearne Channel of Great Slave Lake and 100 km southeast of the City of Yellowknife. The Property is remote but accessible year-round via helicopter and small aircraft from Yellowknife and seasonally by barge from Yellowknife or Hay River. The Property is also seasonally accessible via ice road from Yellowknife and by float/ski/wheeled plane.

Current infrastructure at the Nechalacho Mine Site includes a trailer camp, miscellaneous buildings, a six tank fuel farm, a tent camp, a core storage area and several kilometres of local access road. Avalon has completed construction of a 300m long airstrip at the Nechalacho Mine Site. Roughly 6,000 cubic metres of historic waste rock piles have been removed for use in construction of the airstrip.

3.2.2 Hydrometallurgical Plant Site

The Hydrometallurgical Plant site is located approximately 85 km east of Hay River, 38 km west of Fort Resolution, and 8 km north of the former town of Pine Point. As previously discussed in Section 2.9.2.4 the proposed plant site will be located on a previously disturbed area consisting of a historic gravel borrow site. It is anticipated that workers will reside in Hay River or Fort Resolution and travel by bus to site daily.

The proposed Hydrometallurgical Tailings Facility (HTF) will be located within an historic open pit (L-37 pit) located south-southwest of the proposed Hydrometallurgical Plant location, near the town of Pine Point. Excess supernatant water from the HTF will be pumped to another historic open pit (N-42 pit), located to the southwest, for discharge and infiltration into the Presqu'île aquifer. Infrastructure to be located at the Hydrometallurgical Plant Site is discussed in more detail in Section 4.8.3 of this report.

Primary power for the Hydrometallurgical Plan will be provided through the existing Northwest Territories Hydro Corporation (NTHC) power grid and substation located in the vicinity. The substation power feed comes from the NTPC Talston Hydroelectric Dam, located approximately 64 km north of Fort Smith on the Talston River.

3.2.3 Transportation

3.2.3.1 Nechalacho Mine and Flotation Plant Site

Haul Road: Existing local access roads connect the exploration sites, air strip, and barge docking area.

Dock Facility: Currently, barge loads of fuel and equipment are brought to a nearby bay from which the existing access road was constructed.

Airstrip: Float planes and ski planes with rotary wing support are used to service the site. Avalon operates a 300 m long by 30 m wide airstrip on the West side of Thor Lake. The airstrip provides year-round access for light freight and personnel.

3.2.3.2 Hydrometallurgical Plant Site

Highways: The Hydrometallurgical Plant site is located 85 km east of Hay River and has all-season highway access via Territorial Highways 5 and 6. Highway 5 is classified as an all-weather highway by the GNWT Department of Transportation (DOT). The highway is rated for year-round use by commercial vehicles with no load restrictions for haul truck traffic and connects directly to the Canadian National Railways (CN) railhead located at Hay River.

Haul Road: Existing access roads from historical mine activities are located in the area including the access road located between the proposed barge dock facility on the south shore of Great Slave Lake and the former Pine Point Mine site.

Dock Facility: The A seasonal dock facility consisting of two barges connected together to create a temporary floating dock and a marshalling yard will be installed on the south shore of Great Slave Lake approximately 8.6 km from the Hydrometallurgical Plant. The

seasonal dock facility will permit the berthing and offloading of Thor Lake REE concentrates onto flatbed trucks for transportation to the Hydrometallurgical Plant. This facility will also be used for the annual shipment of major mining consumables, including fuel, to the Nechalacho Mine site.

Railhead: The Canadian National Railways (CN) railhead is located at Hay River.

3.2.4 Buildings

No permanent structures currently exist at either the Nechalacho Mine and Flotation Plant site or the Hydrometallurgical Plant site.

3.2.5 Power

Power is currently generated at the Nechalacho Mine and Flotation Plant site using diesel generators.

Power is currently available through the existing Northwest Territories Power Corporation (NTPC) power grid and substation located at the former Pine Point Mine site. The substation power feed comes from the NTPC Taltson Hydroelectric Dam, located approximately 64 km north of Fort Smith on the Taltson River.

3.2.6 Industrial Works

3.2.6.1 Nechalacho Mine and Flotation Plant Site

Industrial activity in this area currently includes exploration only. Blachford Lake Lodge, a recreation and tourism lodge, is located approximately eight kilometres from the site and is discussed in Sections 3.5.2 and 6.10.

3.2.6.2 Hydrometallurgical Plant Site

The proposed Hydrometallurgical Plant will be constructed at the brownfields site of Cominco's historic Pine Point Mine, which operated from 1964 until 1988. Utilizing the brownfields site will effectively reduce the Project's overall physical footprint.

Tamerlane Ventures Inc.'s zinc-lead plant is located adjacent to the Hydrometallurgical Plant site and is currently under evaluation for production (Tamerlane 2011).

3.3 COMMUNITY PROFILES

The socio-economic study area for the Thor Lake Project consists of those communities that are more likely to experience effects due to their relatively close proximity to the proposed Project site, as well as their possible contributions to the Project workforce. On this basis, the primary study communities include: Yellowknife, N'Dilo, Dettah, Lutsel K'e, Fort Resolution, Hay River, Hay River Reserve and Fort Smith.

Available community profile information for each community in the socio-economic study area is briefly described in the following sections, and their geographic locations in relation to the proposed Nechalacho Mine site and the Hydrometallurgical Plant site are shown in Figure 3.1-1.

Community profile information was obtained from several primary and secondary resources. The key sources included the most recently available GNWT Bureau of Statistics data and previously submitted environmental assessments (Appendix D).

3.3.1 Yellowknife and N'Dilo

3.3.1.1 Background

The City of Yellowknife is located on the west shore of Yellowknife Bay on the North Arm of the Great Slave Lake (Figure 3.1-1). The community of N'Dilo is located on the northern tip of Latham Island within the City of Yellowknife (Figure 3.1-1). Data for the community of N'Dilo are, therefore, included in the Yellowknife data unless otherwise specified (GNWT Bureau of Statistics 2010i).

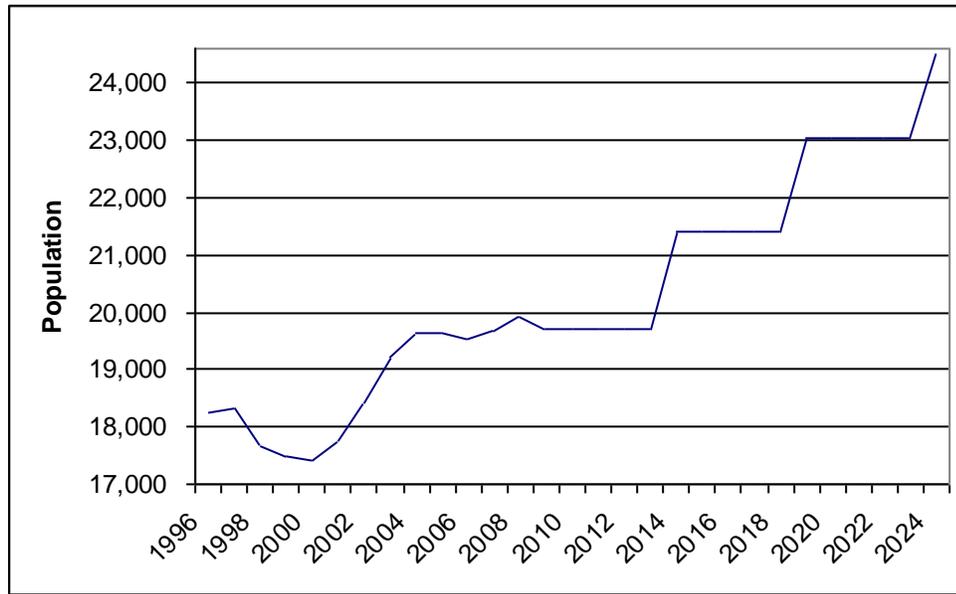
Yellowknife is the capitol of the Northwest Territories and is named after the Yellowknife Dene who moved into the area in the early 1800s. Gold was discovered at Yellowknife Bay in 1896 and became a boom town by 1936 with several mining companies staking claims in the Yellowknife and Great Bear Lake areas. The City has continued to grow as a mining, transportation and administrative centre. Yellowknife became the first City in the Northwest Territories in 1970 and remains the only City (Legislative Assembly of the Northwest Territories ND(g)).

Yellowknife is accessible year round by air and road, with the exception of break-up and freeze-up of the Mackenzie River near Fort Providence (Legislative Assembly of the Northwest Territories ND(g)).

3.3.1.2 Population

The historic and projected population data for Yellowknife are provided in Figure 3.3-1. Yellowknife's population has increased from 18,256 to 19,711 between 1996 and 2009, indicating an average annual growth rate of 0.6 since 1996 (GNWT Bureau of Statistics 2010h). Between 1998 and 2004, the population decreased to a low of 17,414. The population is projected to increase to 23,047 in 2019 and 24,534 by 2024.

Approximately 23.1% of Yellowknife's population is Aboriginal. The majority of N'Dilo's population are Yellowknives Dene (De Beers 2002).

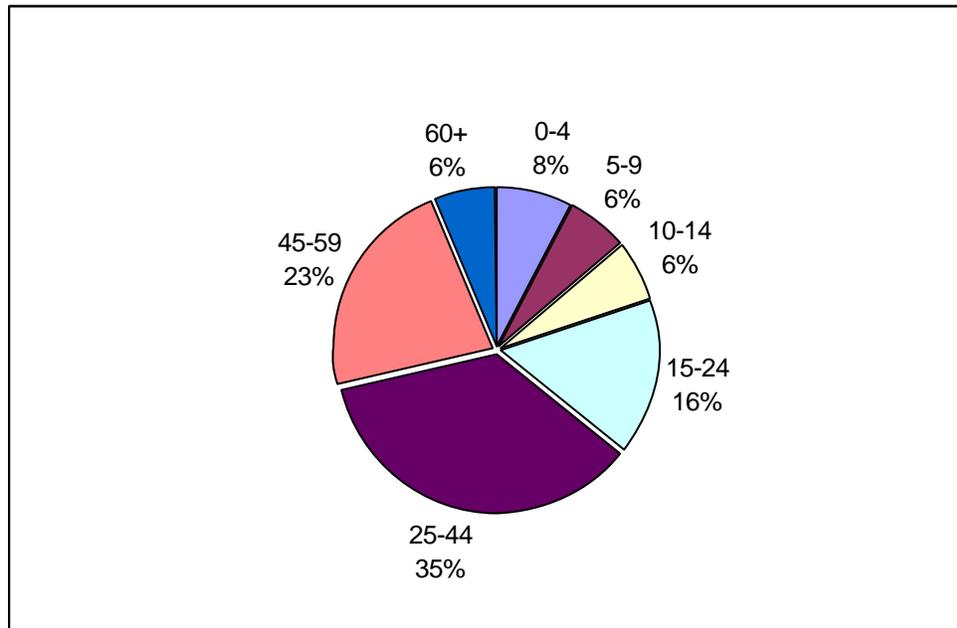


Source: GNWT Bureau of Statistics (2010h)

Figure 3.3-1
Yellowknife Historic and Projected Population, 1996 - 2024.

From 1998 to 2007, there were 249 to 324 births each year, with an average of 288 births per year over the ten year period. The number of teen births ranged from 14 to 27 between 1998 and 2007, with an average of 17 teen births per year. The annual death rates have fluctuated between 35 and 60 deaths reported per year between 1997 and 2006.

The population by age and gender are described in Figure 3.3-2 and Table 3.3-1, respectively. The population in Yellowknife is relatively young, with only 6% of the population aged 60+. There are a greater number of males than females in the community.



Source: GNWT Bureau of Statistics (2010h)

Figure 3.3-2
Yellowknife Population by Age Group, 2009.

TABLE 3.3-1: YELLOWKNIFE POPULATION BY GENDER, 2009		
Gender	Population	Percent
Male	10,094	51%
Female	9,617	49%

Source: GNWT Bureau of Statistics (2010h)

3.3.1.3 Employment

Community employment data for Yellowknife are provided in Figure 3.3-3. In 2006, 14,485 residents were aged 15 years and older. Employment data indicates that 11,490 residents were employed, 700 residents were unemployed, and 2,290 residents were not in the labour force. Of the 12,190 Yellowknife residents in the labour force, this translates into a participation rate of 84.2% and an unemployment rate of 5.7%. Since 1986, the general trend for Yellowknife indicates a slight decline in employment over time, while the unemployment rate has remained fairly constant. This is likely due to the consistent work opportunities in the area.

In N'Dilo, the labour force participation rate has typically ranged between 50.5% and 65.5%. According to the most recent statistics from 2004, N'Dilo's participation rate was 50.5%. In N'Dilo, the employment rate increased from 1991 to 2001, and then declined by 14% in 2004. The unemployment rate in N'Dilo has nearly doubled from 16.7% to 32.0% between 1996 and 2004 (GNWT Bureau of Statistics 2010j).

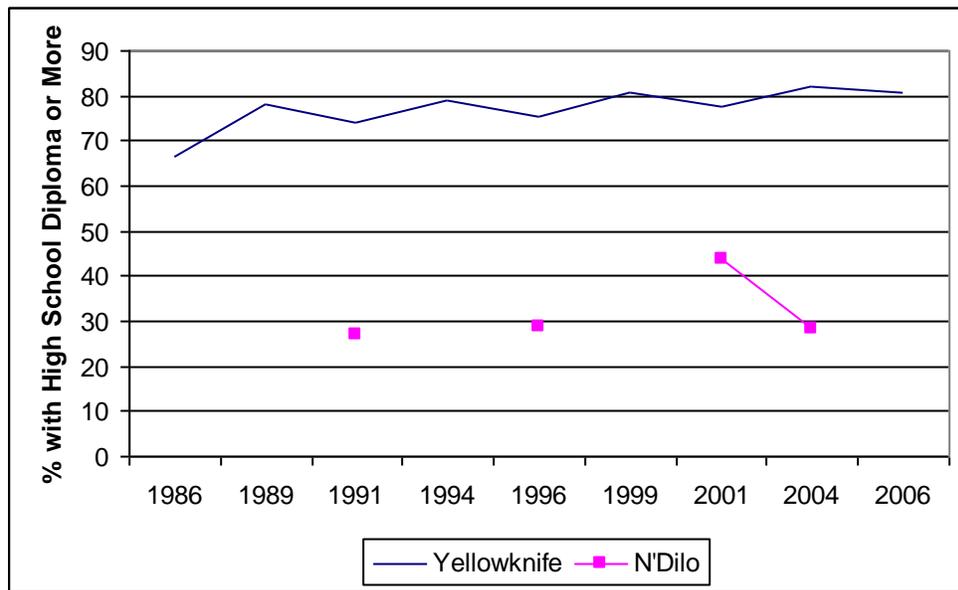


Source: GNWT Bureau of Statistics (2010j)

Figure 3.3-3
Yellowknife and N'Dilo Employment and Unemployment Rates, 1986 - 2006.

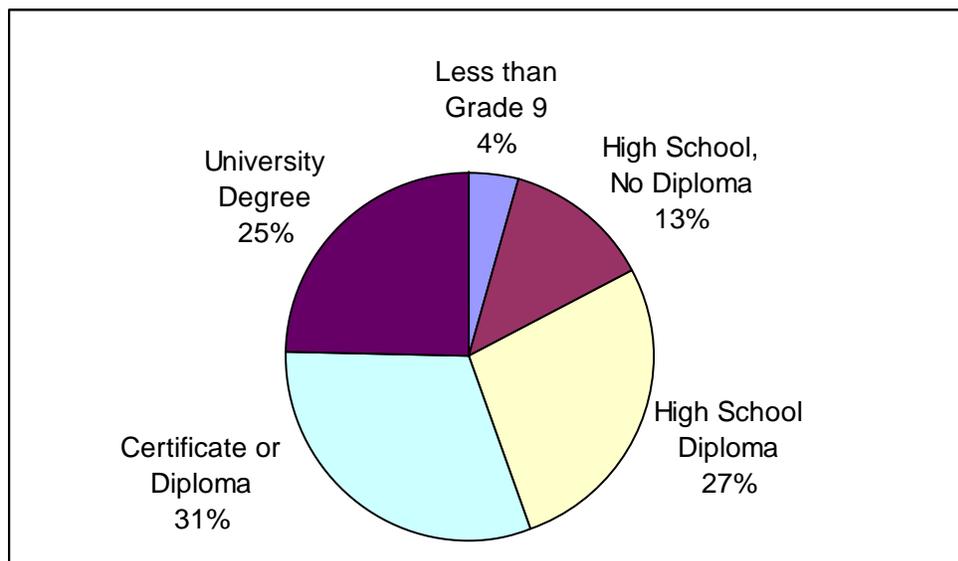
3.3.1.4 Education

The percent of residents achieving a high school diploma has generally increased since 1986 in Yellowknife and N'Dilo (Figure 3.3-4). In 1986, 66.7% of the Yellowknife population had completed high school, compared to 80.9% in 2006. In N'Dilo, considerably fewer residents achieved a high school diploma. Intermittent data for N'Dilo indicate that approximately 27-29% of residents achieve a high school diploma, with a high of 43.8% in 2001 (GNWT Bureau of Statistics 2010j). A more detailed review of the level of schooling achieved by residents 15 years and older in 2004 is identified in Figure 3.3-5.



Source: GNWT Bureau of Statistics (2010j)

Figure 3.3-4
Yellowknife and N'Dilo Educational Levels, 1986 - 2006.



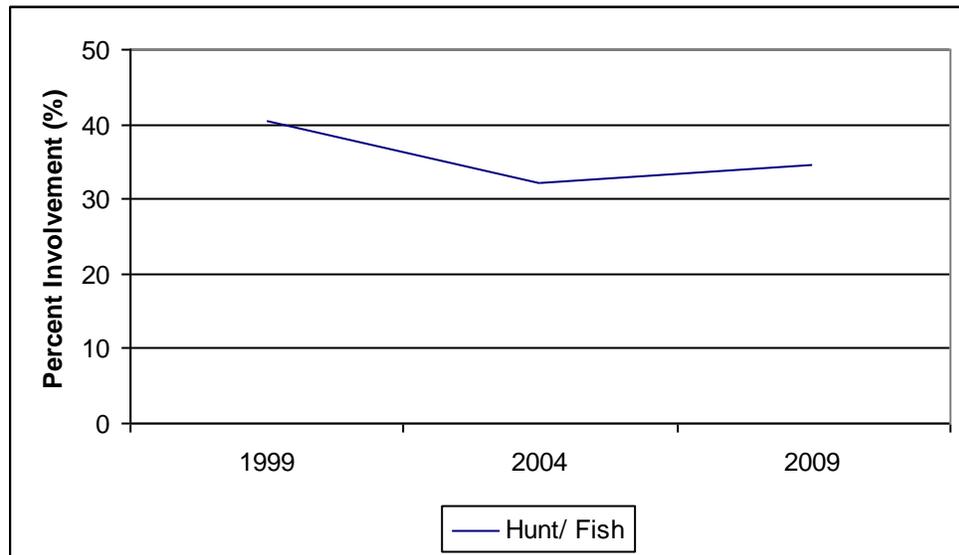
Source: GNWT Bureau of Statistics (2005)

Figure 3.3-5
Yellowknife and N'Dilo Level of Schooling, 2004.

In 2006, the employment rate (i.e., the percentage of persons aged 15 years or older who were working at a job) of those with a high school diploma or greater was 84.4%. Whereas, the employment rate of those with less than a high school diploma was 57.8% (NWT Bureau of Statistics 2010h).

3.3.1.5 Traditional Activities

The involvement of Yellowknife residents in hunting and fishing differs between residents of Yellowknife and residents of N'Dilo. The overall trend for persons 15 and over who hunted or fished is declining (Figure 3.3-6). In 1999, 40.4% hunted and fished, compared to 34.5% in 2009 (GNWT Bureau of Statistics 2009c).



Source: GNWT Bureau of Statistics (2009c)

Figure 3.3-6
Yellowknife Participation in Traditional Activities, 1999 - 2009.

Data from 2003 for Yellowknife indicate that 32.3% of the population hunted and fished, 0.8% trapped, and 9.5% consumed country foods (GNWT Bureau of Statistics 2010h). By 2008, the percentage of households consuming country foods had risen to 10.7% (GNWT Bureau of Statistics 2009b).

Data from 2003 for N'Dilo indicate that 35.8% of the population hunted and fished, 19.1% trapped, and 69.6% consumed country foods (GNWT Bureau of Statistics 2010i).

3.3.1.6 Language

The majority of the population in Yellowknife speak English as their mother tongue; other languages spoken include: Chipewyan, Tâichô (Dogrib), Tlicho, South and North Slavey, Michif, and French (Legislative Assembly of the Northwest Territories ND(g)).

The percentage of Yellowknife's Aboriginal population that speaks an Aboriginal language has been slowly declining. In 1984, 51.5% of the Aboriginal population spoke an Aboriginal language. This percentage has since declined to 25.3% in 2004 (GNWT Bureau of Statistics 2010h). For Yellowknife specifically, 18.0% of Aboriginal Persons spoke an Aboriginal language in 2009, compared to 46.2% in N'Dilo (GNWT Bureau of Statistics 2009a).

3.3.1.7 Community Services

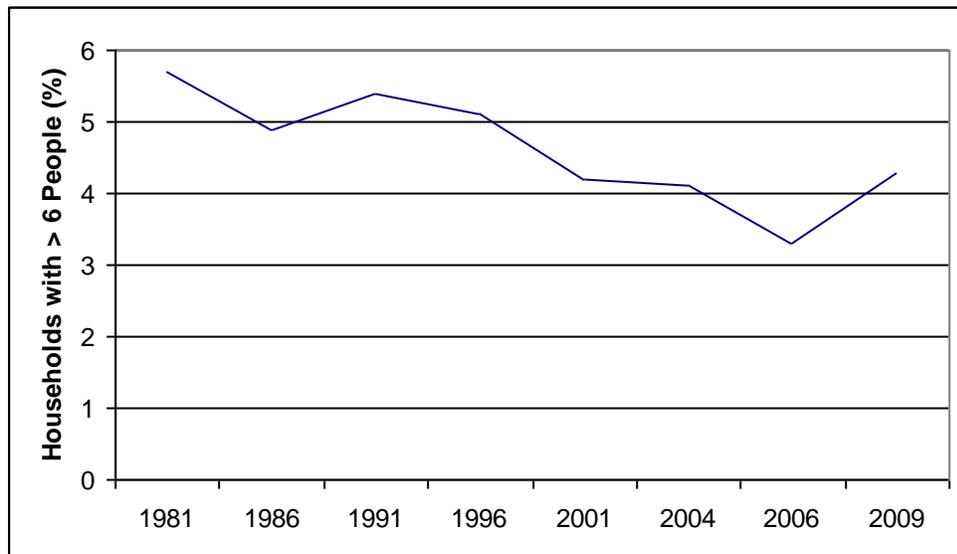
Several community services are offered in Yellowknife and N'Dilo through the Yellowknife Health and Social Services Authority and the Stanton Territorial Health Authority. Services include the Jan Stirling Centre for community health and community and family service, several medical clinics and centres, an eye clinic, a mental health clinic, the health promotion and protection office, and Stanton Territorial Hospital (GNWT Health and Social Services 2009c; 2009d).

Other community services include recreation facilities, churches, schools, and library. Municipal services include water and sewer, waste collection, and public works (City of Yellowknife 2003).

3.3.1.8 Housing

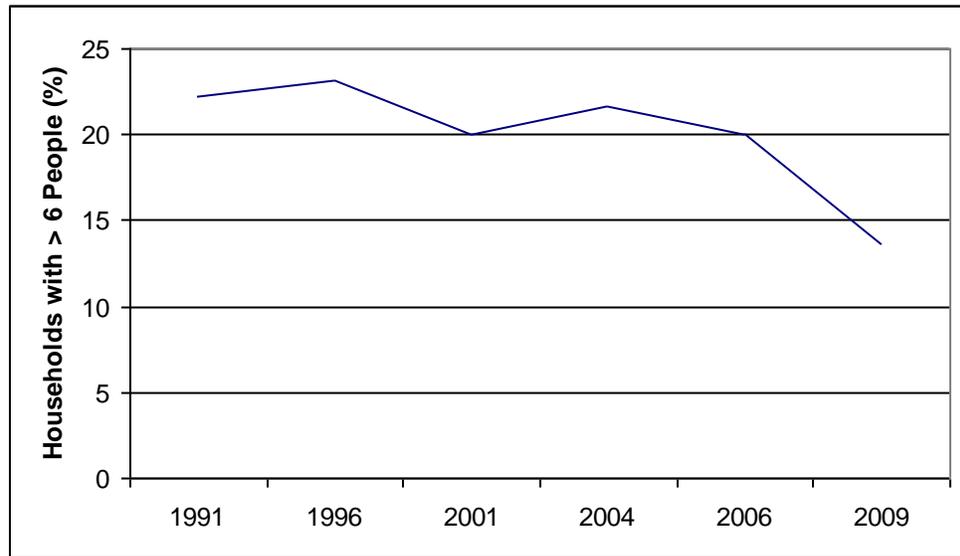
In 2009, there were 6,742 houses in Yellowknife; 53.7% are owned. In N'Dilo, there were 111 houses; 47.7% were owned.

For both Yellowknife and N'Dilo, the percentage of households with more than six people has declined since 1981 (Figures 3.3-7 and 3.3-8). In Yellowknife, 5.7% of households had more than six people living in the household in 1981, which declined to 4.3% in 2009. In N'Dilo, 22.2% of households had more than six people living in the household in 1991, which declined to 13.5% in 2009 (GNWT Bureau of Statistics 2010j).



Source: GNWT Bureau of Statistics (2010j)

Figure 3.3-7
Yellowknife Households with More Than Six People, 1981 - 2009.

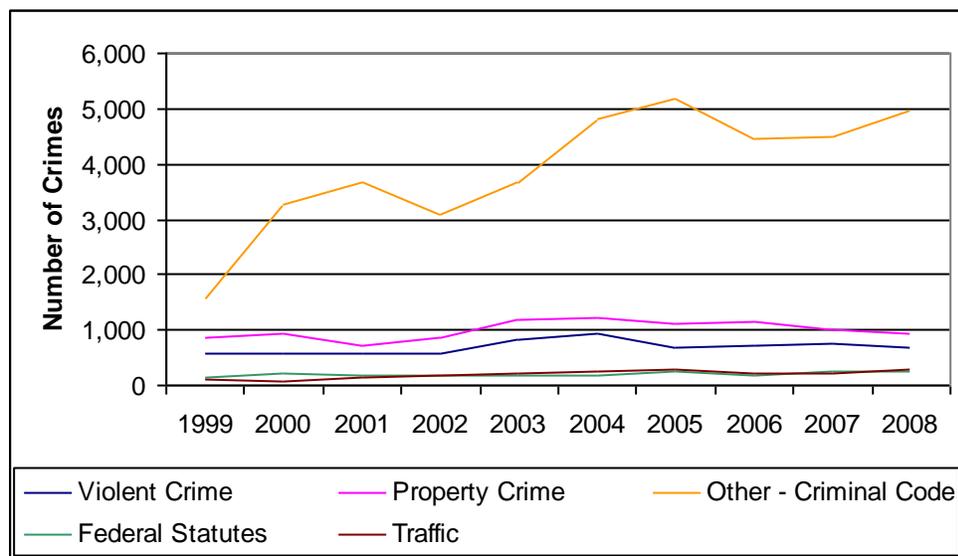


Source: GNWT Bureau of Statistics (2010j)

Figure 3.3-8
N'Dilo Households with More Than Six People, 1991 - 2009.

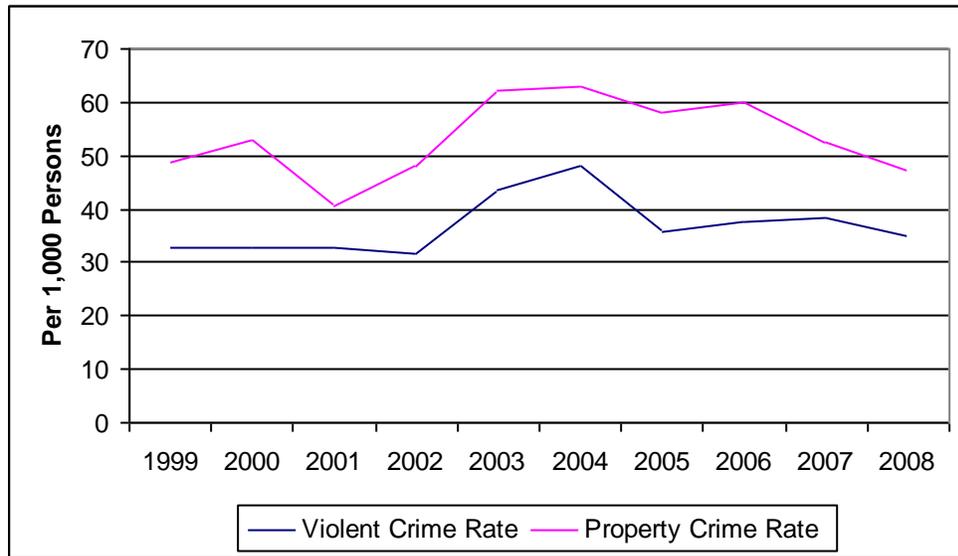
3.3.1.9 Crime

Crime levels in Yellowknife have generally increased since 1999, with noticeable increases in crimes between 2003 and 2005. In particular, other criminal code crimes such as offensive weapons, bail violation, disturbing the peace and/or mischief increased (Figure 3.3-9). Similar trends occurred with the violent crime rate and property crime rate per 1,000 persons (Figure 3.3-10).



Source: GNWT Bureau of Statistics (2010h)

Figure 3.3-9
Yellowknife Crimes, 1999 - 2008.

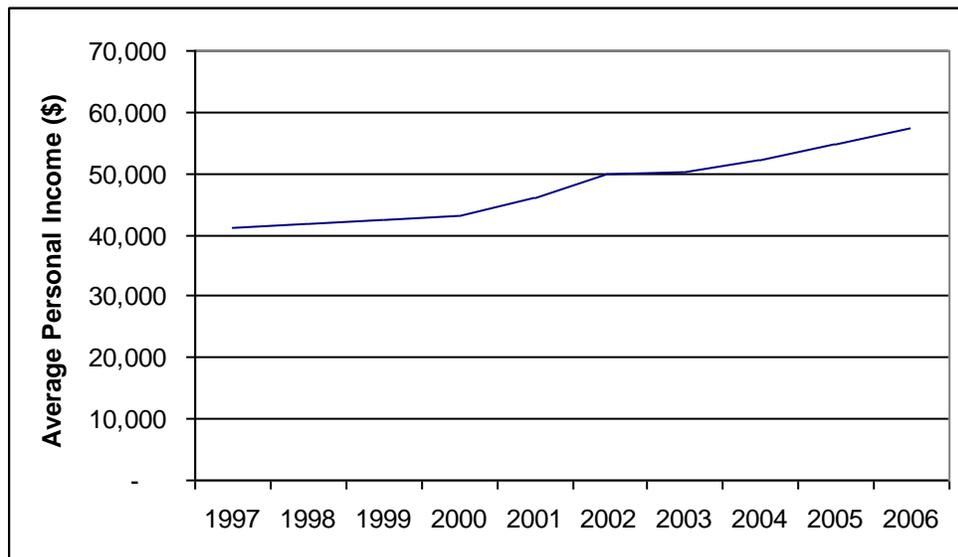


Source: GNWT Bureau of Statistics (2010h)

Figure 3.3-10
Yellowknife Violent Crime and Property Crime Rates, 1999 - 2008.

3.3.1.10 Income

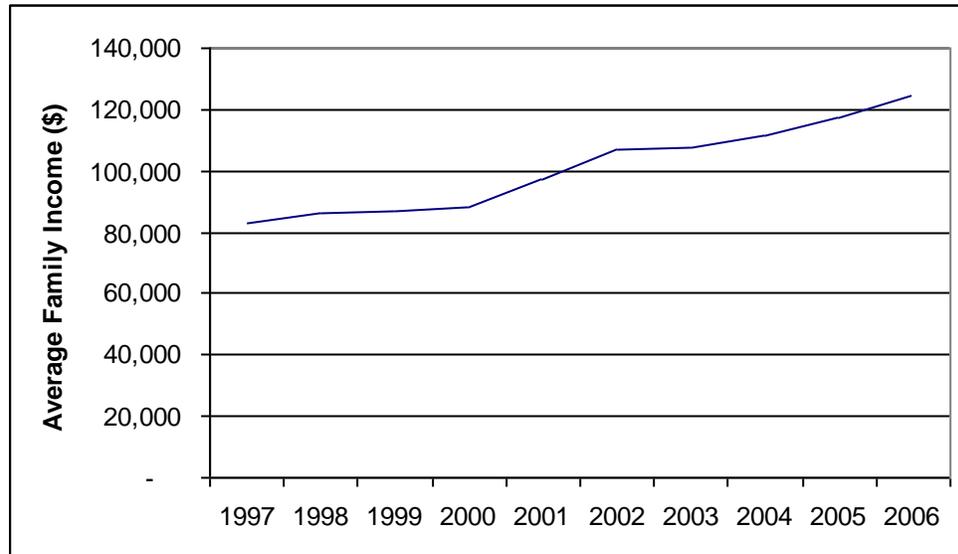
The average personal income for residents of Yellowknife has increased since 1997 (Figure 3.3-11). Average income in 1997 was \$41,005. Average income increased to \$57,246 by 2006.



Source: GNWT Bureau of Statistics (2010h)

Figure 3.3-11
Yellowknife Average Personal Income, 1997 - 2006.

Similarly, average family income has generally increased since 1997 (Figure 3.3-12). In 1997, the average family income was \$83,078; this increased to \$124,200 in 2006.



Source: GNWT Bureau of Statistics (2010h)

Figure 3.3-12
Yellowknife Average Family Income, 1997 - 2006.

3.3.2 Dettah

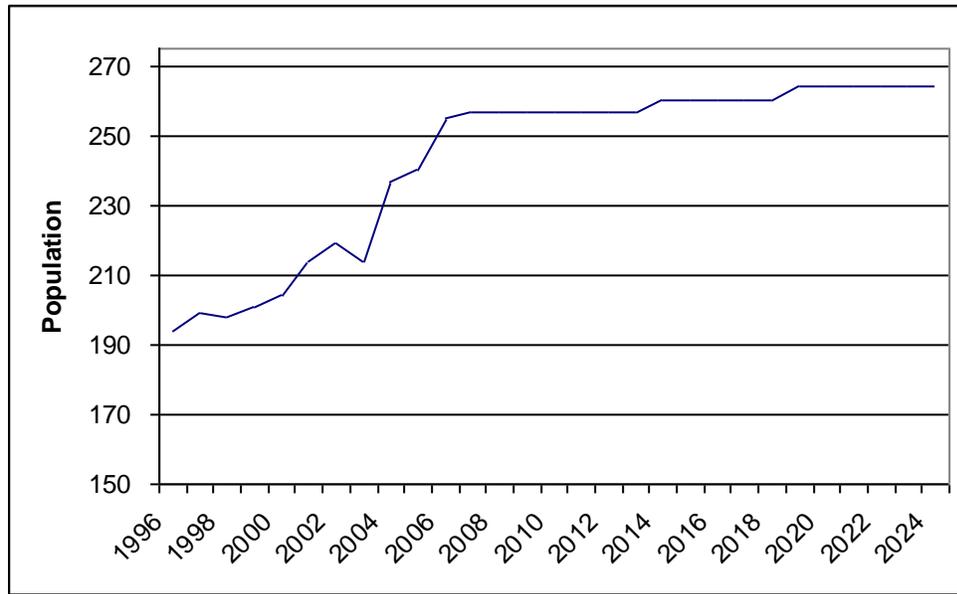
3.3.2.1 Background

Dettah is located on the east side of Yellowknife Bay, approximately 23 km southeast of Yellowknife (Figure 3.1-1). The community is accessible by an all-weather road, an ice road across Yellowknife Bay, and by water during the summer.

Dettah is situated in territory traditionally used for hunting by the Tâichô (Dogrib) Dene from prehistoric times. Eventually, the Yellowknife Chipewyan began to hunt in the area. The name Dettah means 'Burnt Point' in the Tâichô language, and refers to a traditional fishing camp used until Yellowknife was established as a gold mining centre. Dogrib people moved to the settlement from various camps on the east shore of Great Slave Lake as the site offered close proximity to both wilderness resources and Yellowknife's developing services (Outcrop Ltd. 1990).

3.3.2.2 Population

The historic and projected population data for Dettah are provided in Figure 3.3-13. Dettah's population has increased gradually from 194 to 257 between 1996 and 2009, indicating an average annual growth rate of 2.2 since 1996 (GNWT Bureau of Statistics 2010a). The population is projected to increase slightly to 264 by 2024. The majority (98%) of the Dettah population are Aboriginal, primarily Yellowknives Dene (GNWT Bureau of Statistics 2010a).

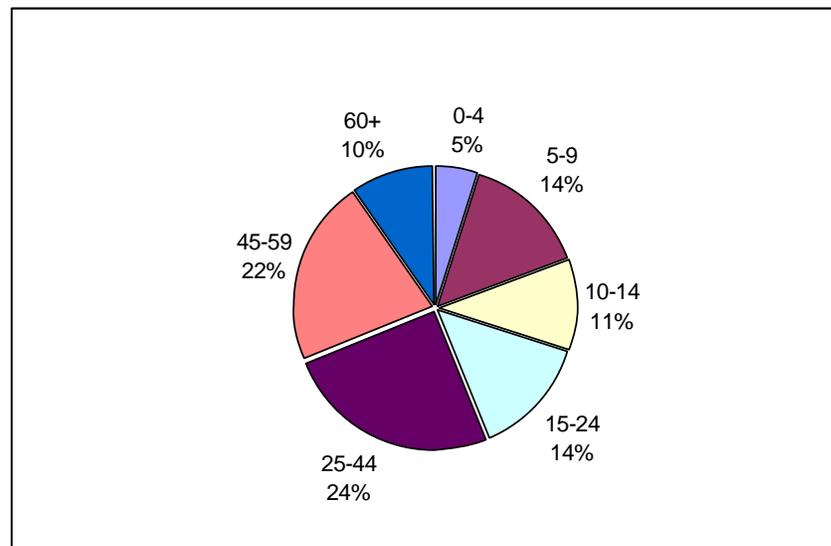


Source: GNWT Bureau of Statistics (2010a)

Figure 3.3-13
Dettah Historic and Projected Population, 1996 - 2024.

From 1998 to 2007, there were zero to four births each year, with an average of 1.7 births per year over the ten year period. The number of teen births has ranged from zero to two, with an average of 0.5 teen births per year. The annual death rates have fluctuated between zero and one death from 1997 to 2006.

The population by age and gender are described in Figure 3.3-14 and Table 3.3-2, respectively. Data indicate a relatively high population (44%) of people aged 0-24. The ratio of males to females is almost even.



Source: GNWT Bureau of Statistics (2010a)

Figure 3.3-14.
Dettah Population by Age Group, 2009.

TABLE 3.3-2: DETTAH POPULATION BY GENDER, 2009		
Gender	Population	Percent
Male	128	50%
Female	129	50%

Source: GNWT Bureau of Statistics (2010a)

3.3.2.3 Employment

Community employment data for Dettah are provided in Figure 3.3-15. In 2006, 165 residents were aged 15 years and older. Employment data indicate that 75 residents were employed, 15 residents were unemployed, and 75 residents were not in the labour force. Of the 90 residents in the labour force, this translates into a participation rate of 54.5% and an unemployment rate of 16.7%. Since 1986 the unemployment and employment rates have varied between recorded intervals, particularly between 2001 and 2006, when employment decreased and then increased. The overall trend since 1986 is increased employment and decreased unemployment.



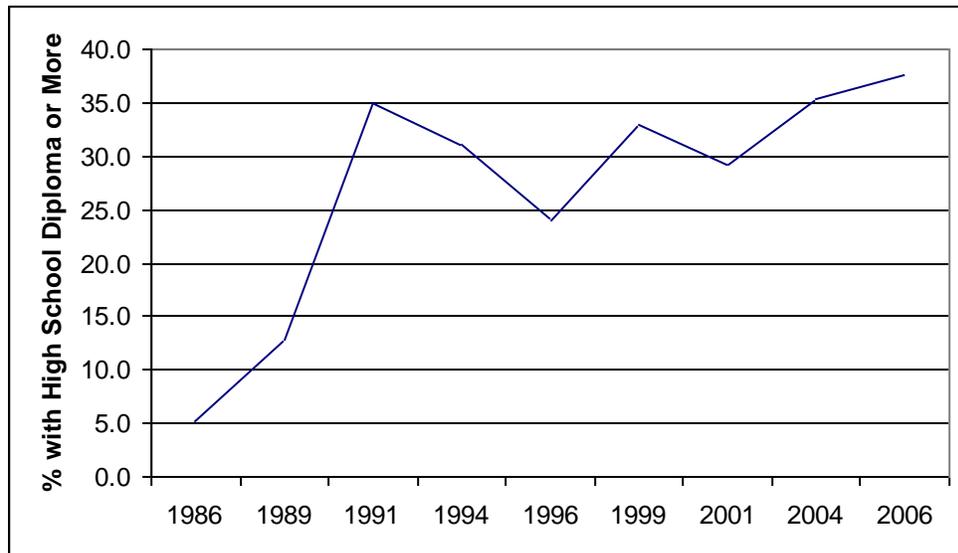
Source: GNWT Bureau of Statistics (2010a)

Figure 3.3-15
Dettah Employment and Unemployment Rates, 1986 - 2006.

3.3.2.4 Education

The percent of residents achieving a high school diploma has generally increased since 1986 (Figure 3.3-16). In 1986, 5.3% of the population had completed high school, compared to 37.5% in 2006. There was a significant increase in the percentage of the population that had a high school diploma or more between 1989 (12.9%) and 1991 (35.0%); this declined to 24.0% in 1996, but has since surpassed the 1991 levels. Data for specific educational levels, such as university certificates and diplomas, were unavailable.

In 2006, the employment rate (i.e., the percentage of persons aged 15 years or older who were working at a job) of those with a high school diploma or greater was 61.5%. Whereas, the employment rate of those with less than a high school diploma was 36.8% (NWT Bureau of Statistics 2010a).

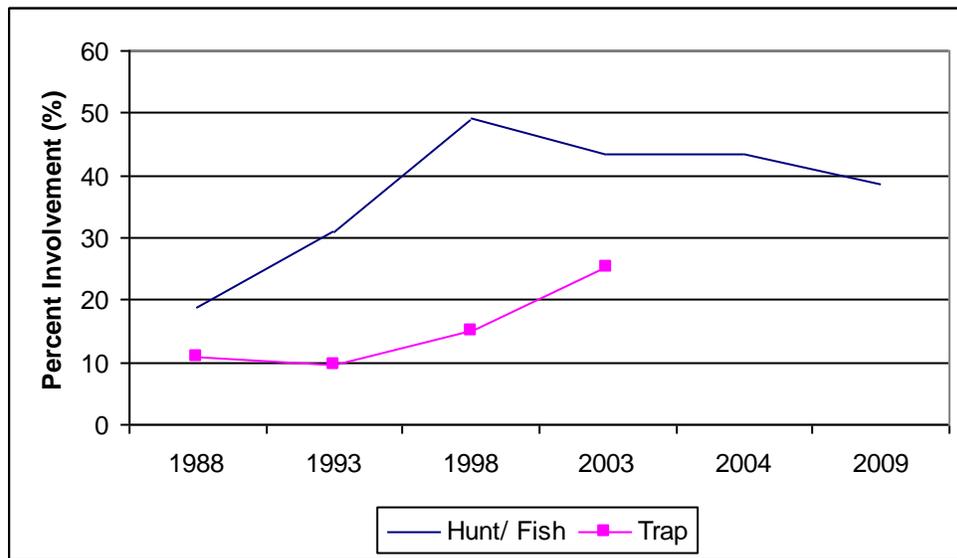


Source: GNWT Bureau of Statistics (2010a)

Figure 3.3-16
Dettah Educational Level, 1986 - 2006.

3.3.2.5 Traditional Activities

Dettah residents' level of involvement in traditional activities is changing over time, depending on the type of activity (Figure 3.3-17). Residents' involvement in hunting, fishing and trapping has generally increased since 1988 (GNWT Bureau of Statistics 2009c; De Beers 2002). For hunting and fishing, the percentage of residents involved peaked in 1999 at 49.3%, and has declined since then. In 2008, the percentage of residents consuming country foods (half or more) was 70.0% (GNWT Bureau of Statistics 2009b).



Source: GNWT Bureau of Statistics (2009c, 2010a) and De Beers (2002)

Figure 3.3-17
Dettah Participation in Traditional Activities, 1988 - 2009.

3.3.2.6 Language

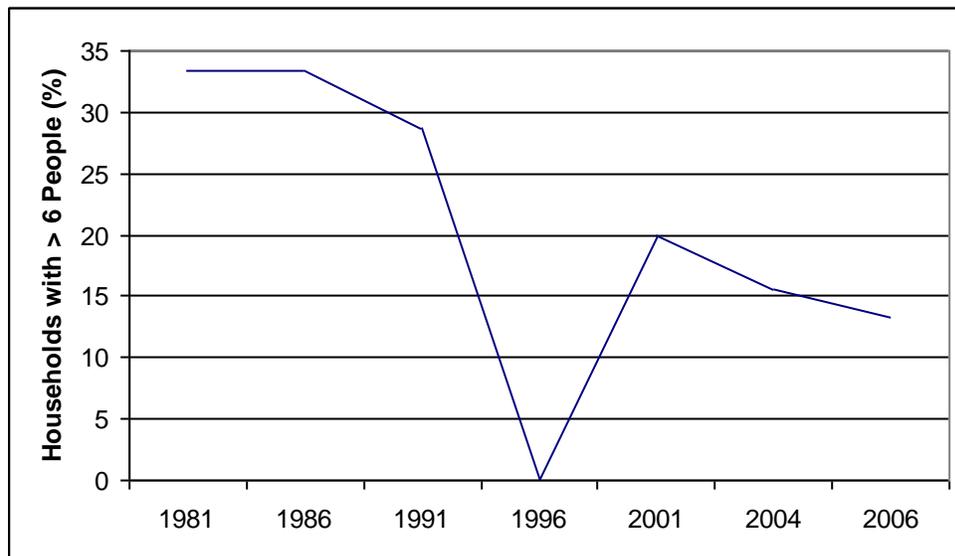
The percentage of Dettah’s Aboriginal population that speaks an Aboriginal language has been declining. Tâichô (Dogrib) is the traditional language spoken in the community. In 1984, 94.6% of the Aboriginal population could speak an Aboriginal language, this decreased to 59.9% in 2009 (GNWT Bureau of Statistics 2009a; 2010a).

3.3.2.7 Community Services

Community services in Dettah are offered through the Yellowknife Health and Social Services Authority and the Stanton Territorial Health Authority (GNWT Health and Social Services 2009c; 2009d). Services include the Dettah Health Station, the community centre, and the Kaw Tay Whee School. Water is trucked in from the City of Yellowknife (GNWT Municipal and Community Affairs ND).

3.3.2.8 Housing

In 2009, there were 80 houses in the community. Of these, 41 were owned and 39 were rented. The percentage of households with more than six people has declined significantly since 1981 (Figure 3.3-18). In 1981, 33.3% of households had more than six people living in the household. In 1996, there was a sudden decline in the percentage of households with more than six people to 0%, but this increased to 20.0% by 2001. By 2009, this percentage had declined to 13.8% (GNWT Bureau of Statistics 2010a). This decline is not explained by the GNWT Bureau of Statistics, rather it is identified as “zero or too small to be expressed”.



Source: GNWT Bureau of Statistics (2010a)

Figure 3.3-18
Dettah Households with More Than Six People, 1981 - 2006.

3.3.2.9 Crime

The Yellowknife detachment of the RCMP is responsible for policing the community of Dettah. Crime statistics are therefore amalgamated with those of Yellowknife (see Section 3.3.1.9 for details)(De Beers 2002).

3.3.2.10 Income

Income statistics, such as average personal income or average family income, are not reported by the GNWT Bureau of Statistics for Dettah.

3.3.3 Lutsel K'e

3.3.3.1 Background

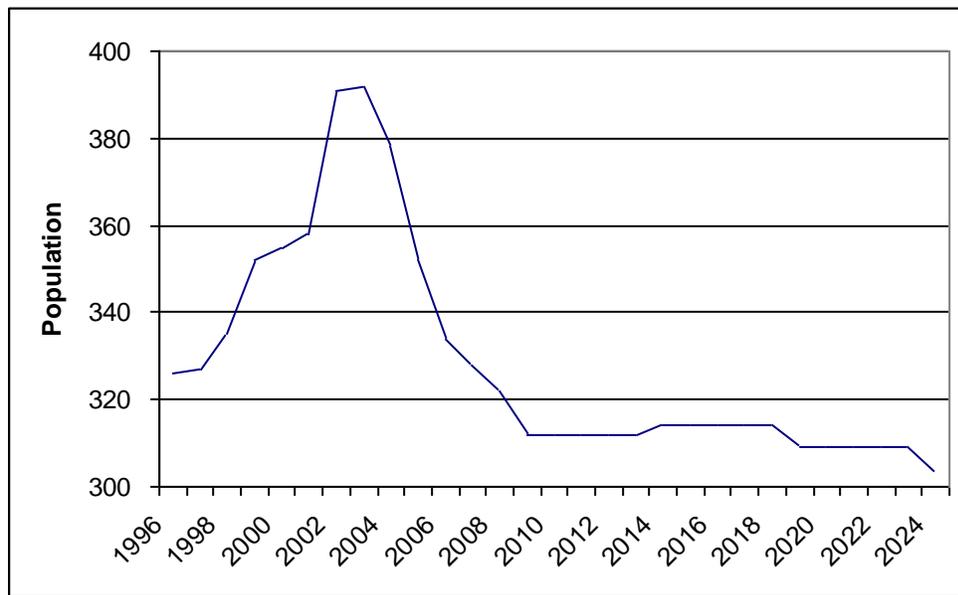
Lutsel K'e is located on a peninsula extending into Christie Bay on the south shore of the East Arm of Great Slave Lake, approximately 201 km east of Yellowknife, by air (Figure 3.1-1). The community is accessible by air from Yellowknife, and barge service is available from Hay River in the annual open water season. There is no road access.

The most northerly Chipewyan community, Lutsel K'e has been a focal point for residents since 1925 when the Hudson's Bay Company Post was established. In 1954 homes were moved to the current site and a school was built in 1960.

The local economy is largely traditionally based, although arts and crafts and tourism (particularly sport fishing) are important (Legislative Assembly of the Northwest Territories ND(f)).

3.3.3.2 Population

The historic and projected population data for Lutsel K'e are provided in Figure 3.3-19. Lutsel K'e's population has decreased from 326 to 312 between 1996 and 2009, indicating an average annual growth rate of -0.3 since 1996 (GNWT Bureau of Statistics 2010g). In 2003, the population increased to a high of 392. The population is projected to decrease to 309 in 2019 and 303 by 2024. Approximately 92.3% of Lutsel K'e's population is Aboriginal.

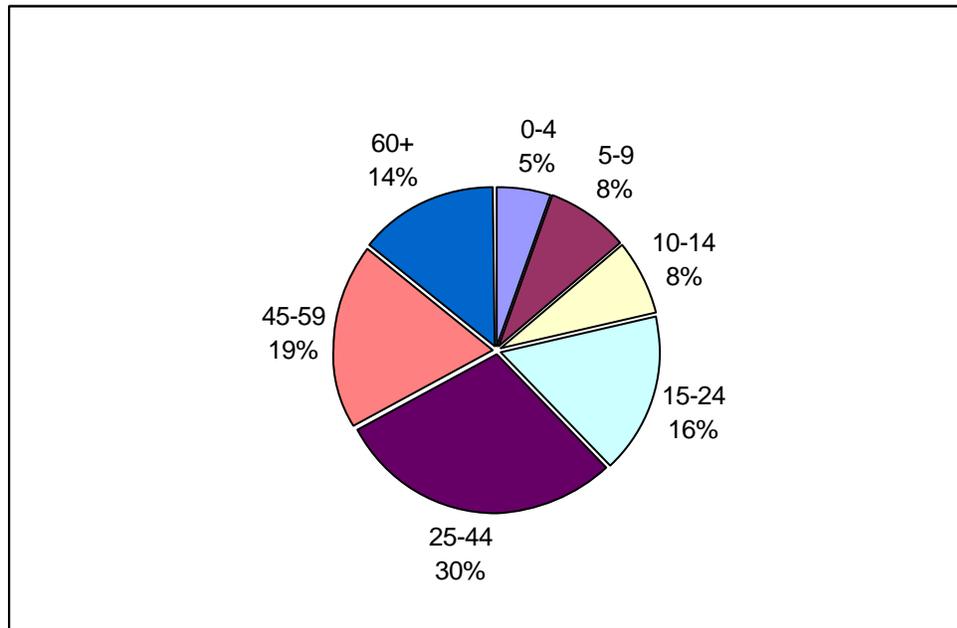


Source: GNWT Bureau of Statistics (2010g)

Figure 3.3-19
Lutsel K'e Historic and Projected Population, 1996 - 2024.

From 1998 to 2007, there were 3 to 16 births each year in Lutsel K'e, with an average of 7.6 births per year over the ten year period. The number of teen births ranged from 0 to 4 between 1998 and 2007, with an average of 1.4 teen births per year. The annual death rates have fluctuated between 0 and 4 deaths reported per year between 1997 and 2006.

The population by age and gender are described in Figure 3.3-20 and Table 3.3-3, respectively. Data indicate that the population of Lutsel K'e is relatively young, with 67% being less than 45 years old. There are a greater number of males than females in the community.



Source: GNWT Bureau of Statistics (2010g)

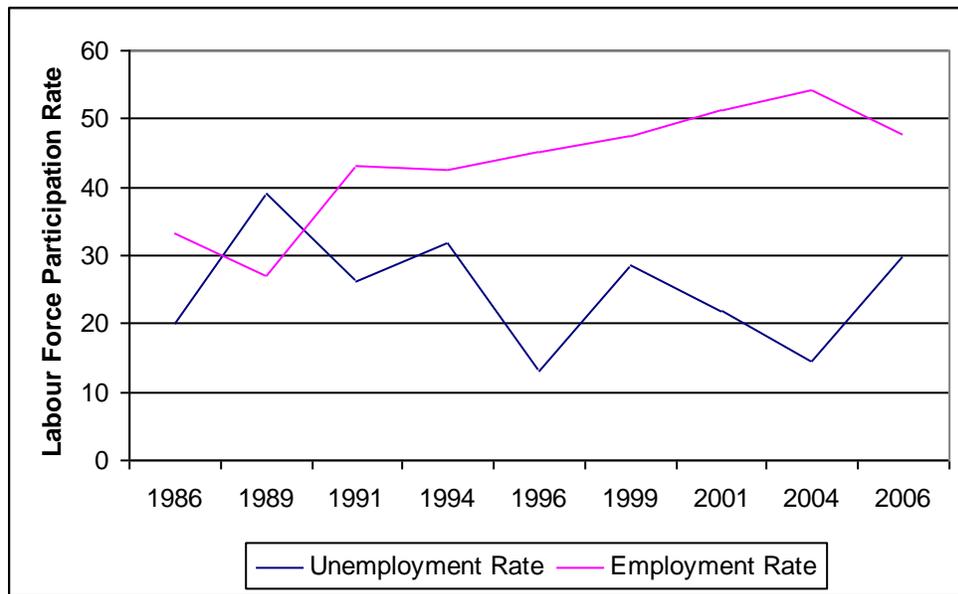
Figure 3.3-20
Lutsel K'e Population by Age Group, 2009.

TABLE 3.3-3: LUTSEL K'E POPULATION BY GENDER, 2009		
Gender	Population	Percent
Male	166	53%
Female	146	47%

Source: GNWT Bureau of Statistics (2010g)

3.3.3.3 Employment

Community employment data for Lutsel K'e are provided in Figure 3.3-21. In 2006, 230 residents were aged 15 years and older. Employment data indicate that 110 residents were employed, 45 residents were unemployed, and 75 residents were not in the labour force. Of the 155 residents in the labour force, this translates into a participation rate of 65.2% and an unemployment rate of 30.0%. Since 1986, the general trend for Lutsel K'e indicates a fairly consistent increase in employment over time. The fluctuating unemployment rate has also increased during this period (GNWT Bureau of Statistics 2010g).



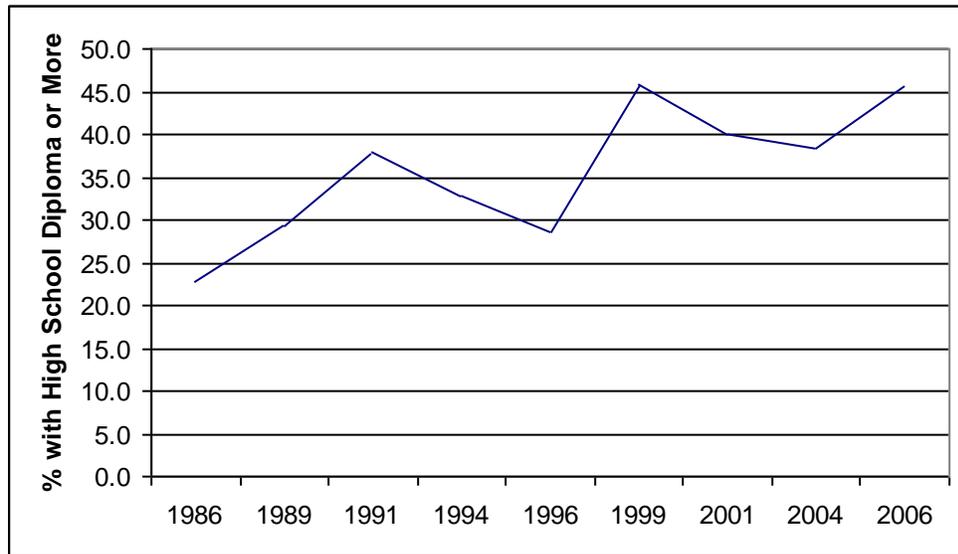
Source: GNWT Bureau of Statistics (2010g)

Figure 3.3-21
Lutsel K'e Employment and Unemployment Rates, 1986 - 2006.

3.3.3.4 Education

The percent of residents achieving a high school diploma has increased since 1986 in Lutsel K'e (Figure 3.3-22). In 1986, 22.9% of the population had completed high school, compared to 45.7% in 2006 (GNWT Bureau of Statistics 2010g). Data for specific educational levels, such as trade, technical, and university certificates and diplomas were unavailable.

In 2006, the employment rate (i.e., the percentage of persons aged 15 years or older who were working at a job) of those with a high school diploma or greater was 61.9%. Whereas, the employment rate of those with less than a high school diploma was 37.5% (NWT Bureau of Statistics 2010g).



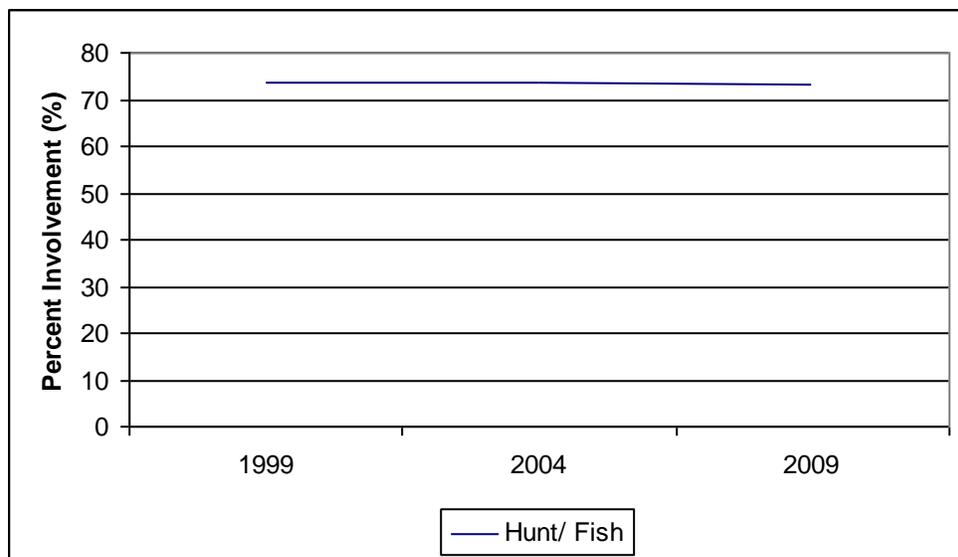
Source: GNWT Bureau of Statistics (2010g)

Figure 3.3-22
Lutsel K'e Educational Levels, 1986 - 2006.

3.3.3.5 Traditional Activities

The percentage of persons aged 15 and over who hunt or fish is consistent over time (Figure 3.3-23). In 1999, 73.8% hunted and fished, compared to 73.3% in 2009 (GNWT Bureau of Statistics 2009c).

Data from 2003 indicate that 24.1% of the population trapped, and 81.6% consumed country foods (GNWT Bureau of Statistics 2010g). By 2008, the percentage of households consuming country foods had risen to 91.9% (GNWT Bureau of Statistics 2009b).



Source: GNWT Bureau of Statistics (2009c)

Figure 3.3-23
Lutsel K'e Participation in Traditional Activities, 1999 - 2009.

3.3.3.6 Language

Languages spoken in Lutsel K'e include Chipewyan and English (Legislative Assembly of the Northwest Territories ND(f)). The percentage of Lutsel K'e's Aboriginal population that speaks an Aboriginal language has been slowly declining. In 1984, 97.4% of the Aboriginal population could speak an Aboriginal language. The percentage declined to 76.9% in 2009 (GNWT Bureau of Statistics 2009a; 2010g).

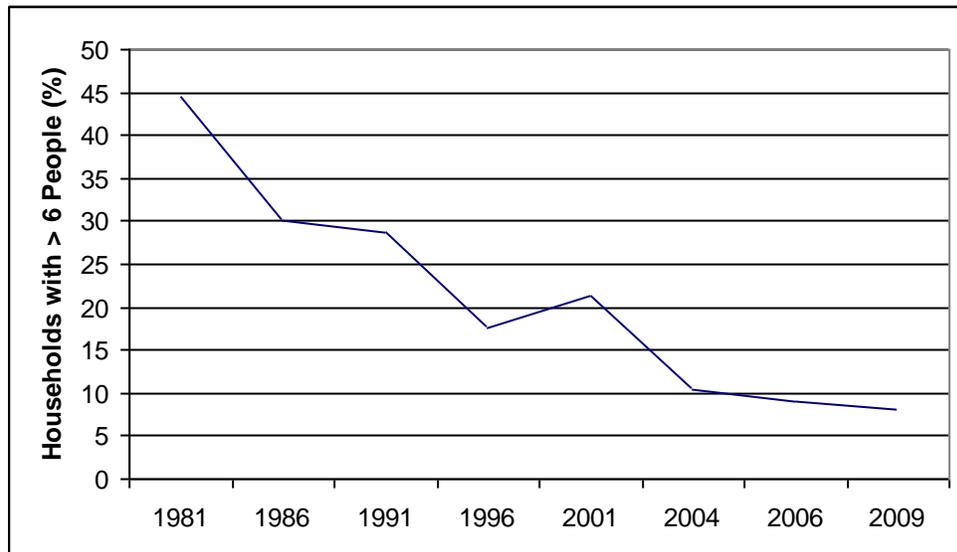
3.3.3.7 Community Services

Community services in Lutsel K'e are offered through the Yellowknife Health and Social Services Authority. Services include a health centre, social services office, and support living facility (GNWT Health and Social Services 2009d). The community draws its water from Christie Bay in Great Slave Lake, and the supply system consists of a water intake system and truck fill station (GNWT Municipal and Community Affairs ND). Educational services up to Grade 10 are offered through Lutsel K'e Dene School. There is also a community learning centre run by Aurora College.

Other services include an RCMP detachment, a grocery store, a post office, and several lodges and outfitters in the area.

3.3.3.8 Housing

The percentage of households in Lutsel K'e with more than six people has declined significantly since 1981 (Figure 3.3-24). In 1981, 44.4% of households had more than six people living in the household, which declined to 8.1% in 2009 (GNWT Bureau of Statistics 2010g). In 2009, there were 111 houses in Lutsel K'e; 54.1% were owned.

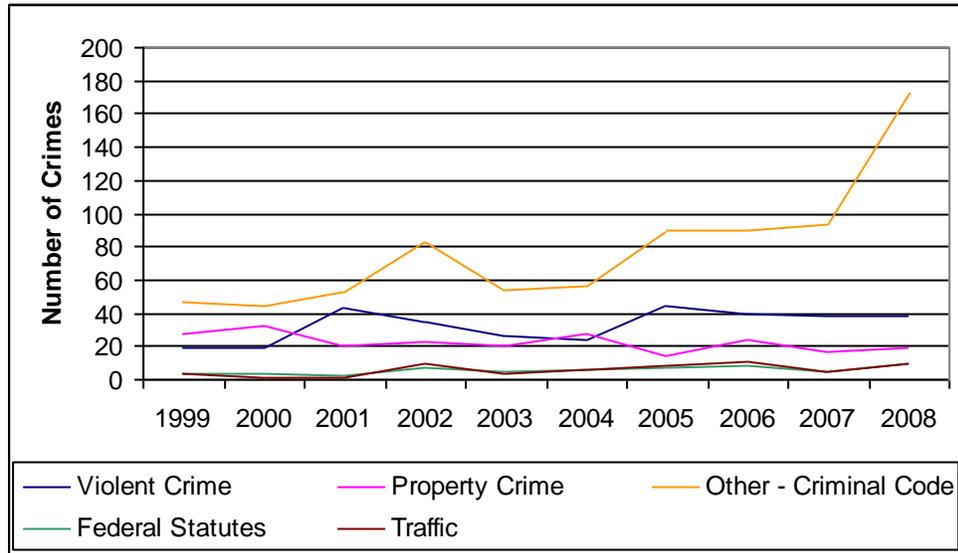


Source: GNWT Bureau of Statistics (2010g)

Figure 3.3-24
Lutsel K'e Households with More Than Six People, 1981 - 2009.

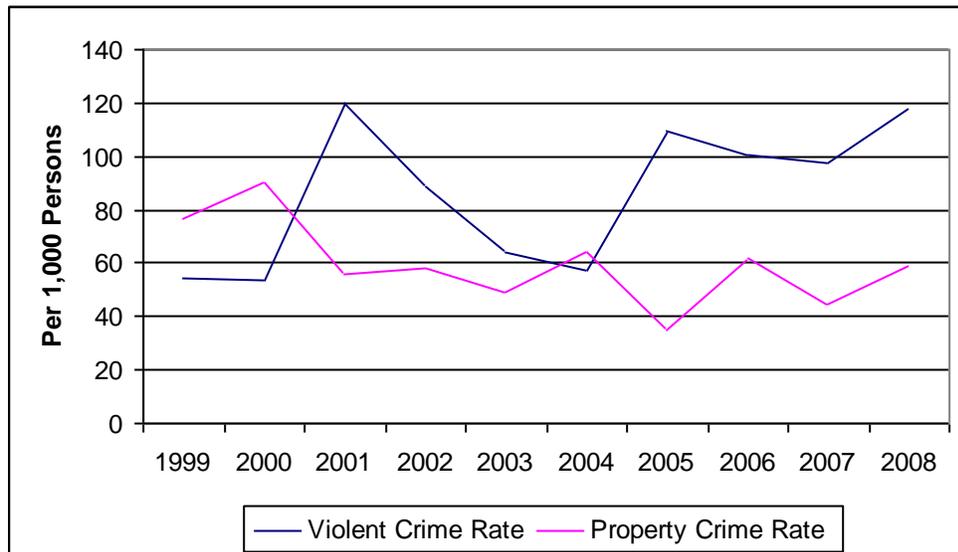
3.3.3.9 Crime

The Lutsel K'e RCMP detachment reports on crime statistics. Crime levels have generally increased since 1999, with the exception of property crime which has decreased slightly (Figure 3.3-25). Similar trends have occurred with violent crime and property crime rates per 1,000 persons (Figure 3.3-26).



Source: GNWT Bureau of Statistics (2010g)

Figure 3.3-25
Lutsel K'e Crimes, 1999 - 2008.

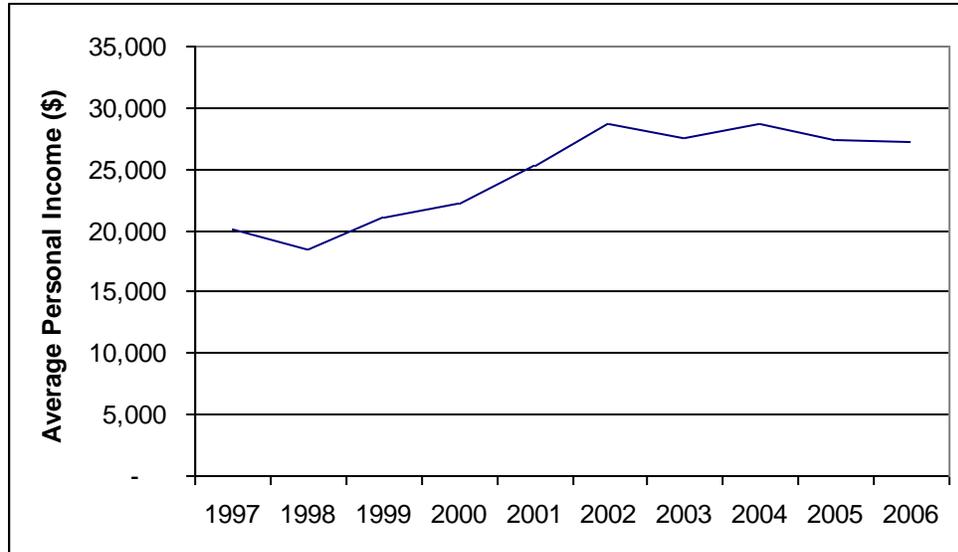


Source: GNWT Bureau of Statistics (2010g)

Figure 3.3-26
Lutsel K'e Violent Crime and Property Crime Rates, 1999 - 2008.

3.3.3.10 Income

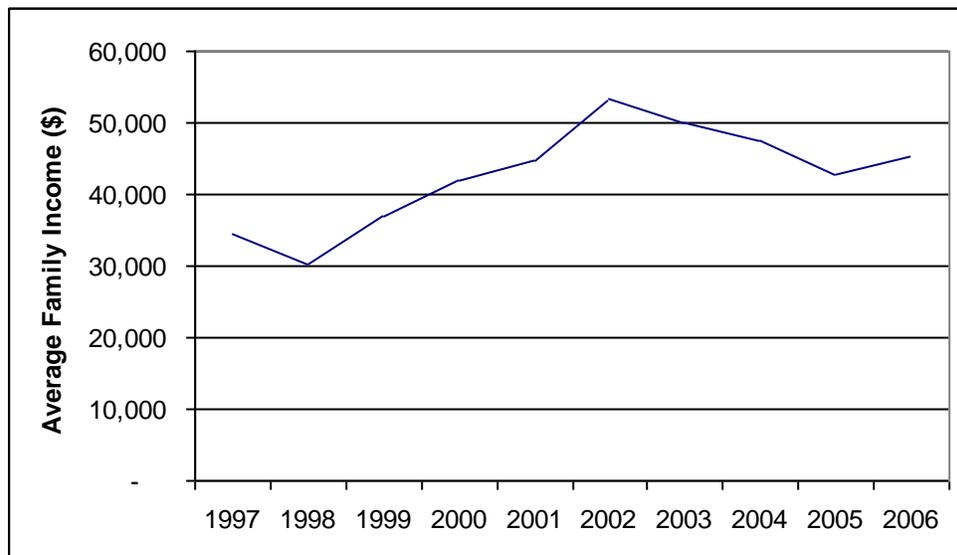
The average personal income for residents of Lutsel K'e has increased since 1997 (Figure 3.3-27). Average income in 1997 was \$20,039 and has increased to \$27,271 in 2006.



Source: GNWT Bureau of Statistics (2010g)

Figure 3.3-27
Lutsel K'e Average Personal Income, 1997 - 2006.

Similarly, the average family income in Lutsel K'e has generally increased since 1997 (Figure 3.3-28). In 1997, the average family income was \$34,425. This number increased to \$45,211 in 2006.



Source: GNWT Bureau of Statistics (2010g)

Figure 3.3-28
Lutsel K'e Average Family Income, 1997 - 2006.

3.3.4 Fort Resolution

3.3.4.1 Background

Fort Resolution (Denínú) is located on the south shore of Great Slave Lake, on a peninsula on the north eastern shore of Resolution Bay (Figure 3.1-1). The community is located approximately 153 km southeast of Yellowknife, by air. The community is accessible year round by air and road (Legislative Assembly of Northwest Territories ND(b)). The community is linked to the road network via Highway 6. It is the oldest documented community in the Northwest Territories, and was a key link in the fur trade's northern water route.

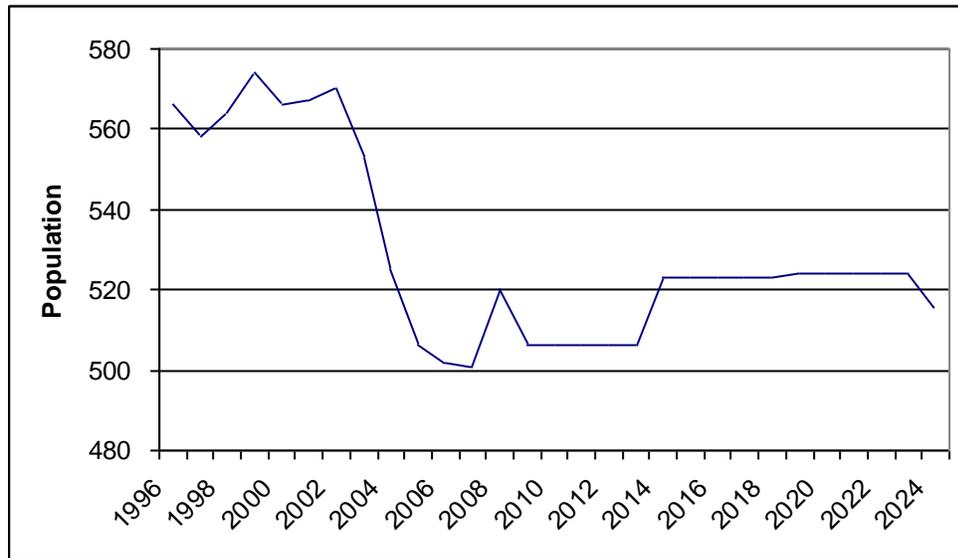
Fort Resolution has been designated as a National Historic Site, due to its importance to Aboriginal culture and the fur trade history. A Northwest Company trading post was first established on the Slave River delta in 1786, in the Yellowknife Chipewyan's territory. A few years later it was moved to nearby Moose Deer Island. The Hudson's Bay Company also constructed a post at this location. When the companies united in 1821, this post was called Fort Resolution (Outcrop Ltd. 1990).

The community housed important medical and educational establishments in the area. St. Joseph's Mission House began operations in 1890 and an RCMP detachment was set up in 1913. In 1938-1939 a hospital building was built to treat tuberculosis cases. Patients were eventually transferred from this location to Edmonton and the building closed. The closure signaled a decline in the community's importance as a regional centre. Today logging/sawmilling is the primary source of income along with trapping, hunting and domestic fishing (Legislative Assembly of Northwest Territories ND(b)).

3.3.4.2 Population

The historic and projected population data for Fort Resolution are provided in Figure 3.3-29. Fort Resolution's population has decreased from 566 to 506 between 1996 and 2009, indicating a declining average annual growth rate of -0.9 since 1996 (GNWT Bureau of Statistics 2010c). The population is projected to increase to 524 in 2019 then decrease to 515 by 2024.

The majority (87.5%) of the community members are of Dene or Métis descent, while non-Aboriginal residents make up 12.5% of the population (GNWT Bureau of Statistics 2010c).

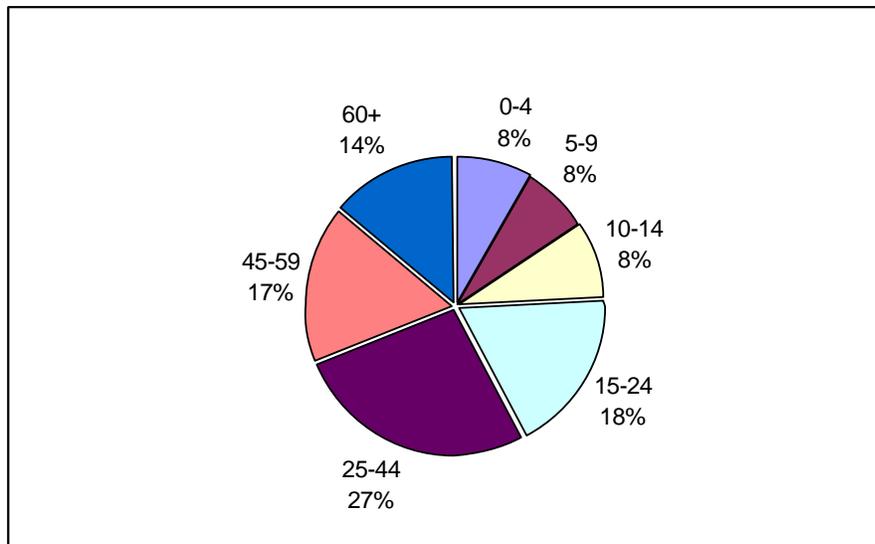


Source: GNWT Bureau of Statistics (2010c)

Figure 3.3-29
Fort Resolution Historic and Projected Population, 1996 - 2024.

From 1998 to 2007, there were 4 to 12 births each year, with an average of 7.8 births per year over the ten year period. The number of teen births ranged from 0 to 3 between 1998 and 2007, with an average of 1.0 teen births per year. The annual death rates have fluctuated between 0 and 8 deaths reported per year between 1997 and 2006.

The population by age and gender are described in Figure 3.3-30 and Table 3.3-4 respectively. Fort Resolution has a relatively young population with 42% being less than 25 years old. There are a greater number of males than females in the community.



Source: GNWT Bureau of Statistics (2010c)

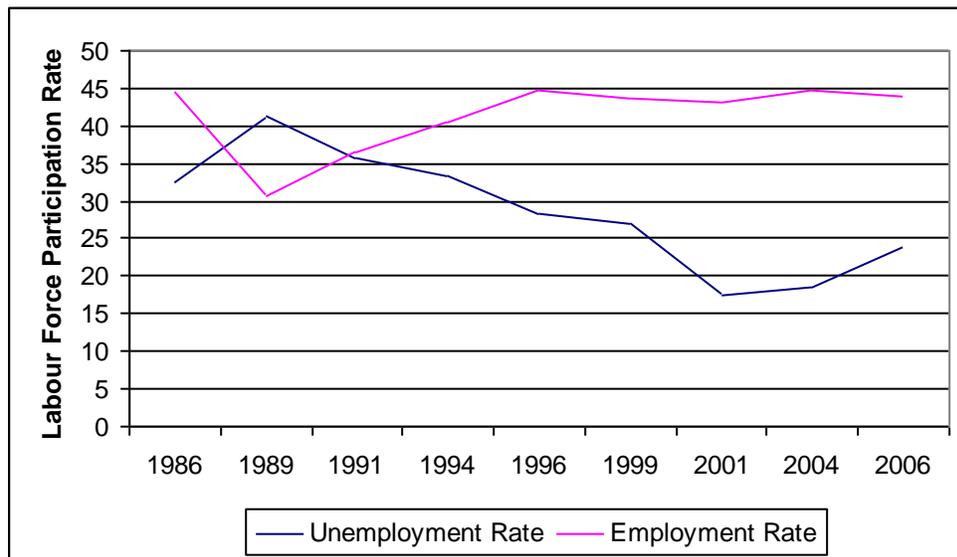
Figure 3.3-30
Fort Resolution Population by Age Group, 2009.

TABLE 3.3-4: FORT RESOLUTION POPULATION BY GENDER, 2009		
Gender	Population	Percent
Male	270	53%
Female	236	47%

Source: GNWT Bureau of Statistics (2010c)

3.3.4.3 Employment

Community employment data for Fort Resolution are provided in Figure 3.3-31. In 2006, 365 residents were aged 15 years and older. Employment data indicate that 160 residents were employed, 50 residents were unemployed, and 150 residents were not in the labour force. Of the 210 residents in the labour force, this translates into a participation rate of 43.8% and an unemployment rate of 23.8%. Since 1986, the general trend for Fort Resolution indicates a decline in unemployment over time, while the employment rate remains fairly constant (GNWT Bureau of Statistics 2010c).



Source: GNWT Bureau of Statistics (2010c)

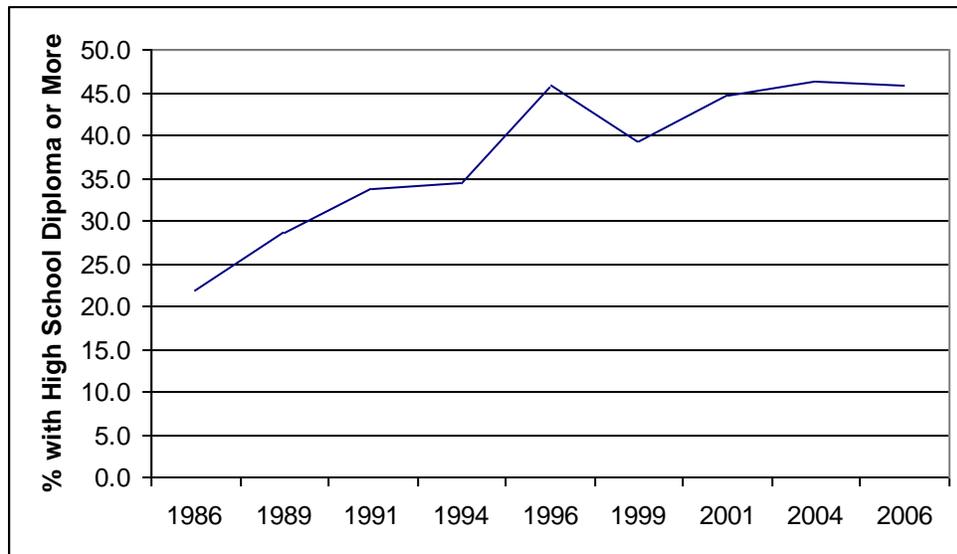
Figure 3.3-31
Fort Resolution Employment and Unemployment Rates, 1986 - 2006.

3.3.4.4 Education

The percent of residents achieving a high school diploma has increased since 1986 (Figure 3.3-32). In 1986, 21.9% of the Fort Resolution population had completed high school, compared to 45.8% in 2006 (GNWT Bureau of Statistics 2010c). Data for specific educational levels, such as trade, technical, and university certificates and diplomas were unavailable.

In 2006, the employment rate (i.e., the percentage of persons aged 15 years or older who were working at a job) of those with a high school diploma or greater was 64.7%. Whereas,

the employment rate of those with less than a high school diploma was 26.3% (NWT Bureau of Statistics 2010c).



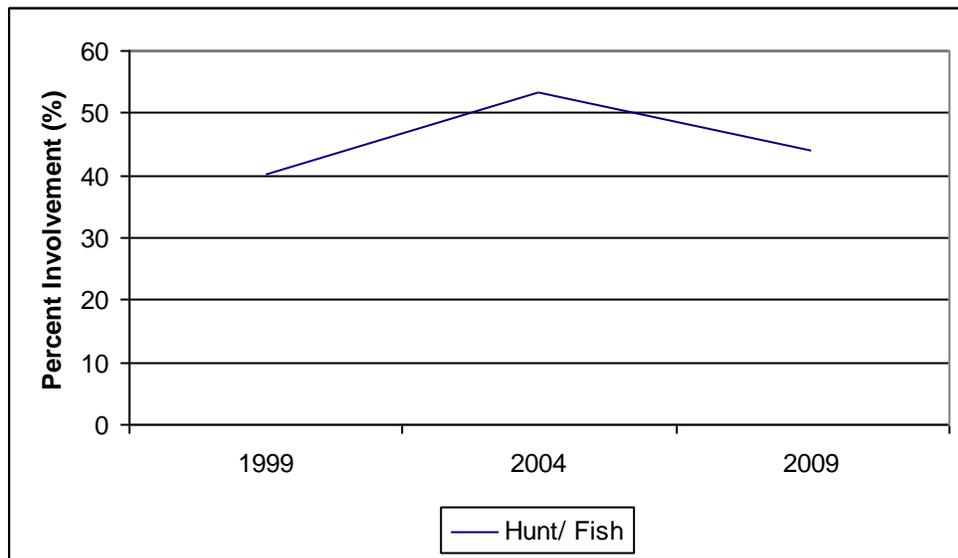
Source: GNWT Bureau of Statistics (2010c)

Figure 3.3-32
Fort Resolution Educational Levels, 1986 - 2006.

3.3.4.5 Traditional Activities

The overall trend for persons 15 and over who hunt or fish is increasing (Figure 3.3-33). In 1999, 40.1% hunted and fished, compared to 42.6% in 2009 (GNWT Bureau of Statistics 2009c).

Data from 2003 for Fort Resolution indicate that 19.5% of the population trapped, and 67.8% consumed country foods (GNWT Bureau of Statistics 2010c). By 2008, the percentage of households consuming country foods had risen to 69.4% (GNWT Bureau of Statistics 2009b).



Source: GNWT Bureau of Statistics (2009c)

Figure 3.3-33
Fort Resolution Participation in Traditional Activities, 1999 - 2009.

3.3.4.6 Language

The languages spoken in Fort Resolution include English, Chipewyan and Michif (Legislative Assembly of the Northwest Territories ND(a)). The percentage of Fort Resolution's Aboriginal population that speaks an Aboriginal language has been slowly declining. In 1984, 68.1% of the Aboriginal population could speak an Aboriginal language, this has since declined to 34.3% in 2009 (GNWT Bureau of Statistics 2009a; 2010c).

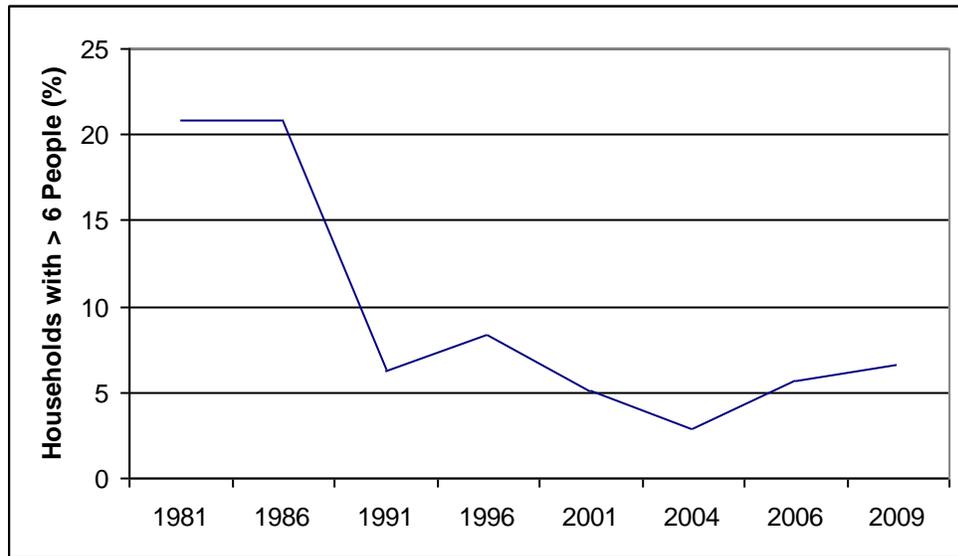
3.3.4.7 Community Services

Community services in Fort Resolution are offered through the Yellowknife Health and Social Services Authority. Social Services include a health centre, and a social services and supported living facility (GNWT Health and Social Services 2009d). The community has a water treatment plant, underground water storage reservoirs and truck fill stations (GNWT Municipal and Community Affairs ND).

Fort Resolution features Denínu School, which offers schooling for children from kindergarten to Grade 12. The community also has a hockey arena, community hall, nursing station, RCMP compound, bed and breakfast, a 'Northern' general store and a 'Quick Stop' convenience store attached to a Shell gas station.

3.3.4.8 Housing

In 2009, there were 183 houses in Fort Resolution; 57.3% were owned. The percentage of households with more than six people has declined since 1981 (Figure 3.3-34). In Fort Resolution, 20.8% of households had more than six people living in the household in 1981, which declined to 6.6% in 2009 (GNWT Bureau of Statistics 2010c).

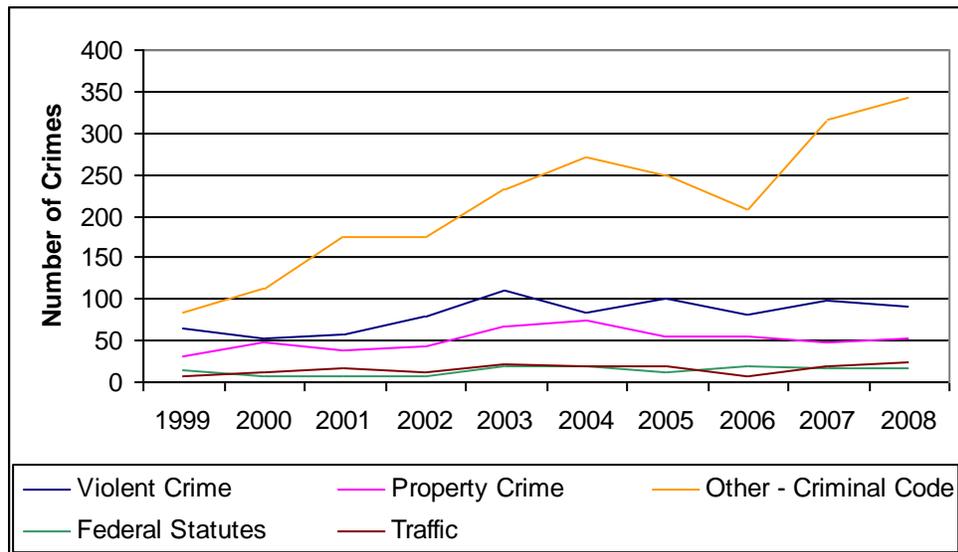


Source: GNWT Bureau of Statistics (2010c)

Figure 3.3-34
Fort Resolution Households with More Than Six People, 1981 - 2009.

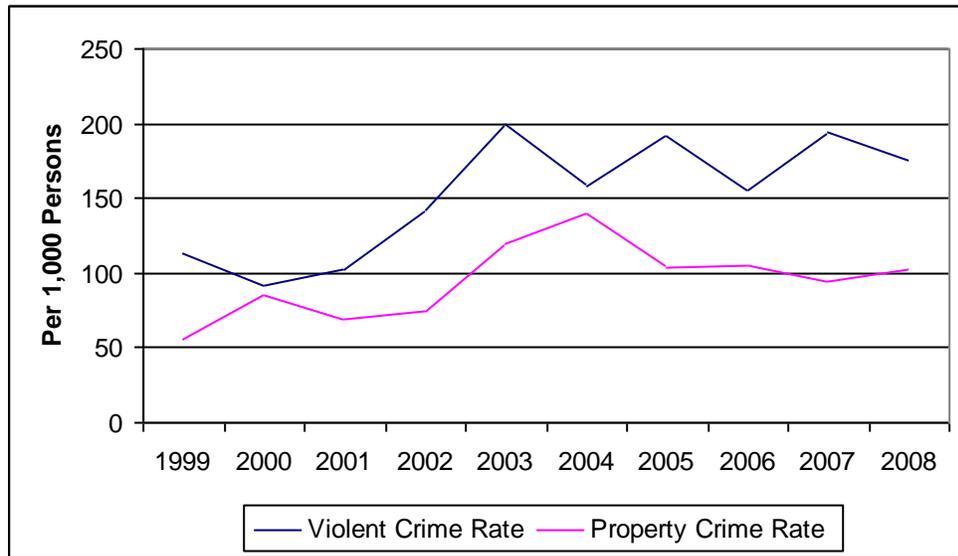
3.3.4.9 Crime

Crime levels in Fort Resolution have generally increased since 1999, with noticeable increases in crimes from 2002 to 2004 and from 2006 to 2007 (Figure 3.3-35). Similar trends occurred with the violent crime and property crime rates per 1,000 persons (Figure 3.3-36).



Source: GNWT Bureau of Statistics (2010c)

Figure 3.3-35
Fort Resolution Crimes, 1999 - 2008.

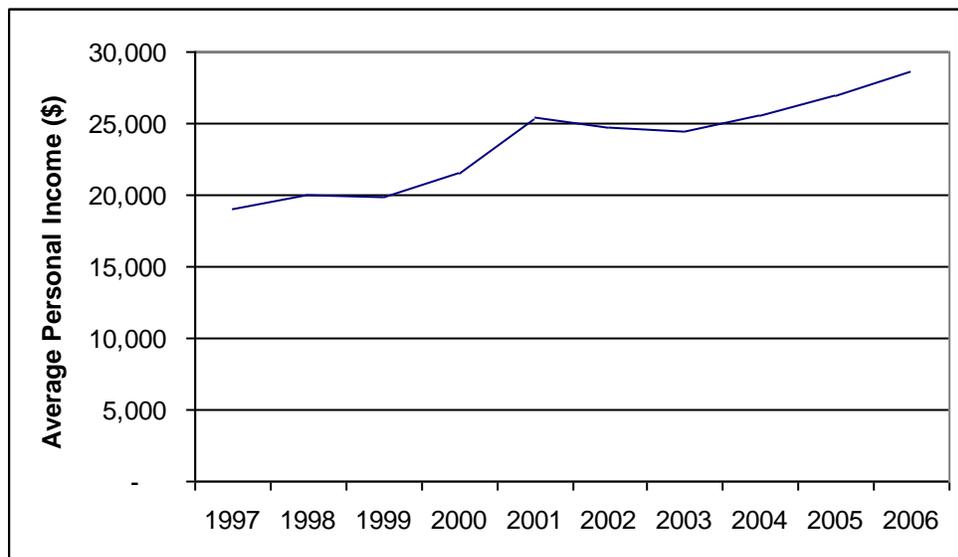


Source: GNWT Bureau of Statistics (2010c)

Figure 3.3-36
Fort Resolution Violent Crime and Property Crime Rates, 1999 - 2008.

3.3.4.10 Income

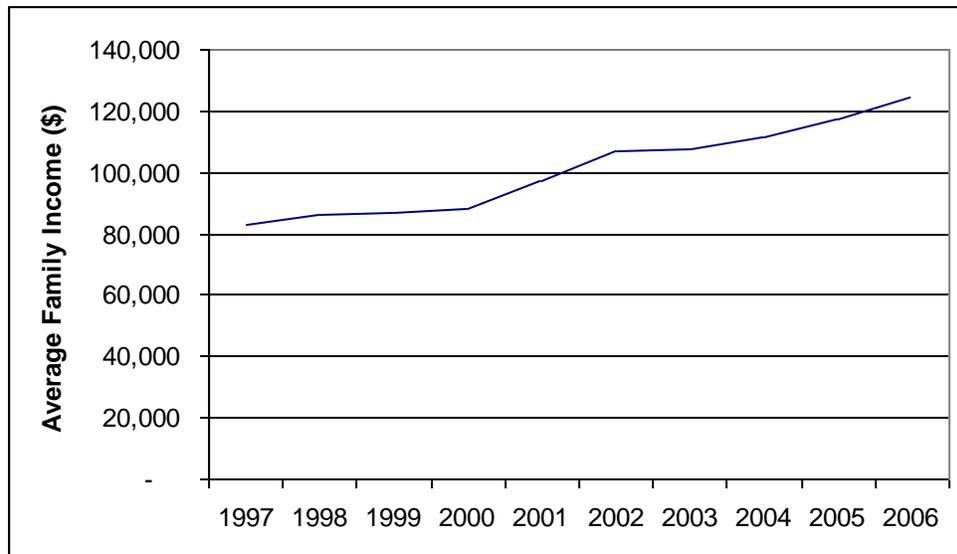
The average personal income for residents of Fort Resolution has increased since 1997 (Figure 3.3-37). Average income in 1997 was \$19,027 and increased to \$28,550 in 2006.



Source: GNWT Bureau of Statistics (2010c)

Figure 3.3-37
Fort Resolution Average Personal Income, 1997 - 2006.

Similarly, the average family income has generally increased since 1997 (Figure 3.3-38). In 1997, the average family income was \$32,900. This number increased to \$47,271 in 2006.



Source: GNWT Bureau of Statistics (2010c)

Figure 3.3-38
Fort Resolution Average Family Income, 1997 - 2006.

3.3.5 Hay River

3.3.5.1 Background

The Town of Hay River is located on the south shore of Great Slave Lake, at the mouth of the Hay River, on both the mainland and Vale Island (Figure 3.1-1). Hay River is located approximately 200 km southwest of Yellowknife by air, and approximately 134 km north of the Alberta border, along the Mackenzie Highway. The community is accessible year round by air, road and railroad (Legislative Assembly of the Northwest Territories ND(d)). Hay River is the northernmost railhead in Canada and is connected to southern lines. As well, the town is a trans-shipment location for river barges downstream to Great Slave Lake, the Mackenzie River and Delta and the Arctic Ocean.

The Long Spear people from the western plains were the first inhabitants of the area dating back to 7,000 years B.C.; however, the occupation site then was the area known today as the Hay River Reserve. Nothing of permanence was constructed.

The community of Hay River first appears on maps in 1854 but no permanent structures were built until 1868 when the Hudson's Bay Company established a post and the Roman Catholic mission arrived a year later. The Post operated intermittently until 1892 and marked the start of continuous occupation of the site. An Anglican Mission was built in 1894 and, attracted by excellent fishing, the Slavey people gathered in the area. Soon a school and nursing station were constructed by missionaries, the RCMP opened a detachment in 1925 and a hospital followed.

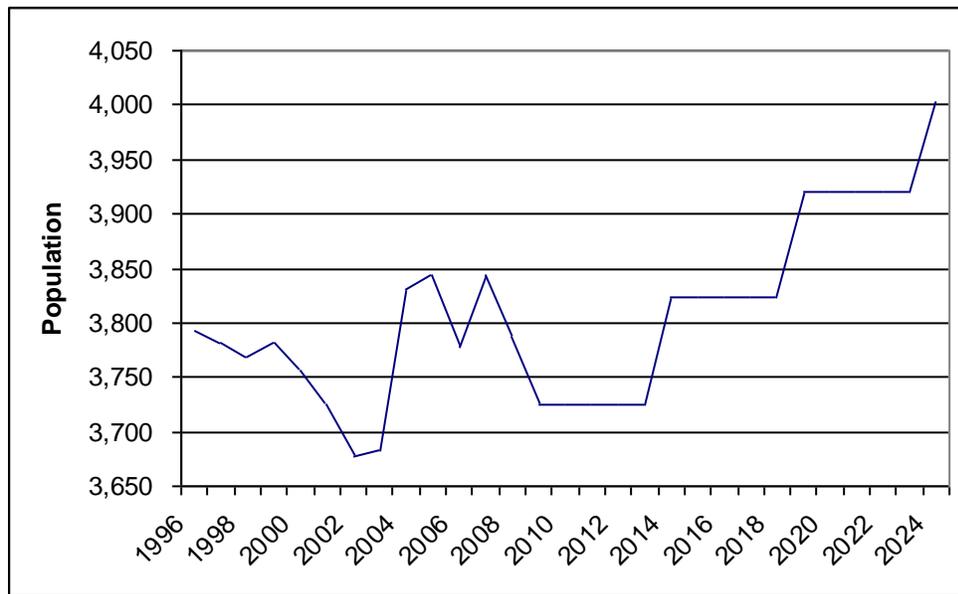
Houses were built on Vale Island in 1939. By 1940, the community had become an educational centre, fishing village and a minor trading post. The west channel grew in importance and became a distribution point for goods being sent to Yellowknife and beyond. The Mackenzie Highway was built by the federal government in 1947 from Grimshaw, Alberta to Hay River. Severe floods in 1951 and 1962 caused significant damage to the community and required that almost the entire population be evacuated. In response, a new community site on the mainland (higher ground) was developed. In 1964, the Great Slave Lake Railway was completed, linking Hay River with Roma, Alberta (Legislative Assembly of the Northwest Territories ND(d)).

In the 1960s and 1970s, the local economy boomed with oil and gas exploration activity and the anticipated construction of the Mackenzie Valley Pipeline. However, activity in the area declined after 1975 when it became apparent that the pipeline would not be built in the near future (Outcrop Ltd. 1990).

Today Hay River is the origin of most barge travel in the Northwest Territories and depends on the transportation/communication industry, commercial fishing, government, commercial logging, local businesses and services and market gardening for its economy. Tourism and Slavey arts and crafts are also important (Legislative Assembly of the Northwest Territories ND(d)).

3.3.5.2 Population

The historic and projected population data for Hay River are provided in Figure 3.3-39. Hay River's population decreased from 3,793 in 1996 to 3,724 by 2009, indicating an average annual growth rate of -0.1 since 1996 (GNWT Bureau of Statistics 2010e). Between 1998 and 2004, the population decreased to a low of 3,678. The population of Hay River is projected to increase to 3,920 in 2019 and 4,005 by 2024. Approximately 44.1% of Hay River's population is Aboriginal.

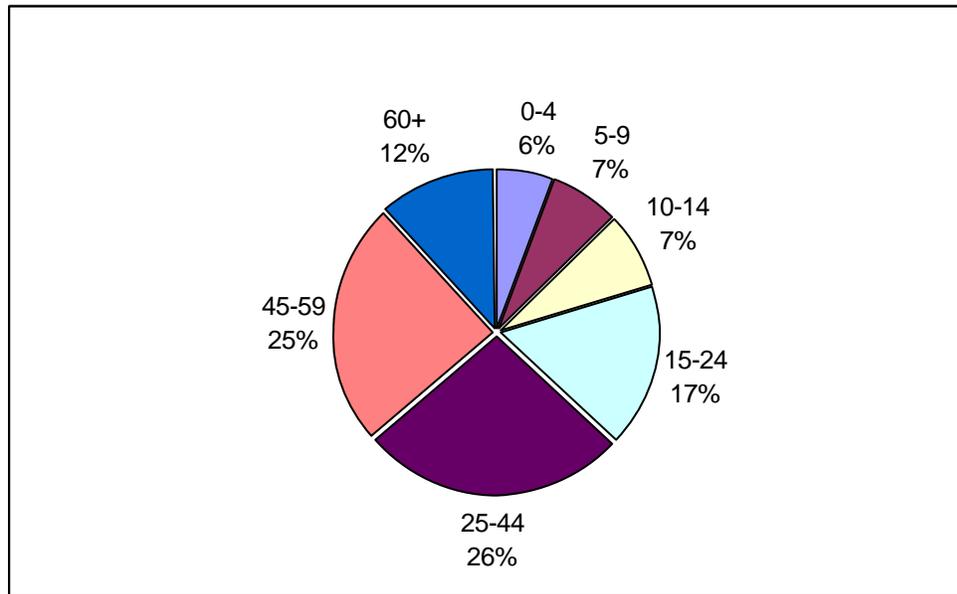


Source: GNWT Bureau of Statistics (2010e)

Figure 3.3-39
Hay River Historic and Projected Population, 1996 - 2024.

From 1998 to 2007, there were 43 to 75 births each year in Hay River, with an average of 56.2 births per year over the ten year period. The number of teen births ranged from 4 to 11 between 1998 and 2007, with an average of 6.7 teen births per year. The annual death rates have fluctuated between 12 and 25 deaths reported per year between 1997 and 2006.

The population by age and gender are described in Figure 3.3-40 and Table 3.3-5 respectively. Data indicate that the population of Hay River is relatively young, with 37% being less than 25 years old. There are a greater number of males than females in the community.



Source: GNWT Bureau of Statistics (2010e)

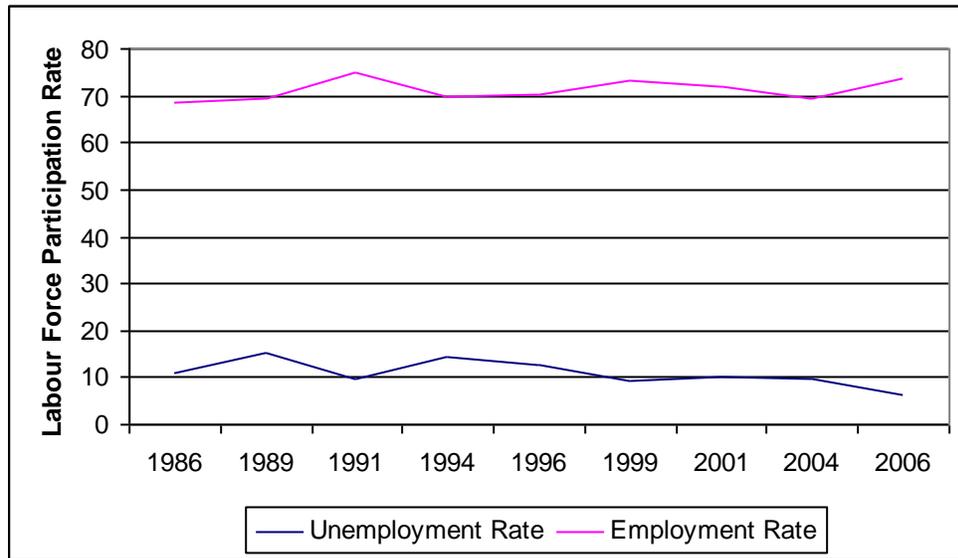
Figure 3.3-40
Hay River Population by Age Group, 2009.

TABLE 3.3-5: HAY RIVER POPULATION BY GENDER, 2009		
Gender	Population	Percent
Male	1,961	53%
Female	1,763	47%

Source: GNWT Bureau of Statistics (2010e)

3.3.5.3 Employment

Community employment data for Hay River are provided in Figure 3.3-41. In 2006, 2,770 residents were aged 15 years and older. Employment data indicate that 2,035 residents were employed, 140 residents were unemployed, and 595 residents were not in the labour force. Of the 2,175 residents in the labour force, this translates into a participation rate of 78.5% and an unemployment rate of 6.4%. Since 1986, the general trend indicates an increase in employment over time, while the unemployment rate is declining (GNWT Bureau of Statistics 2010e).



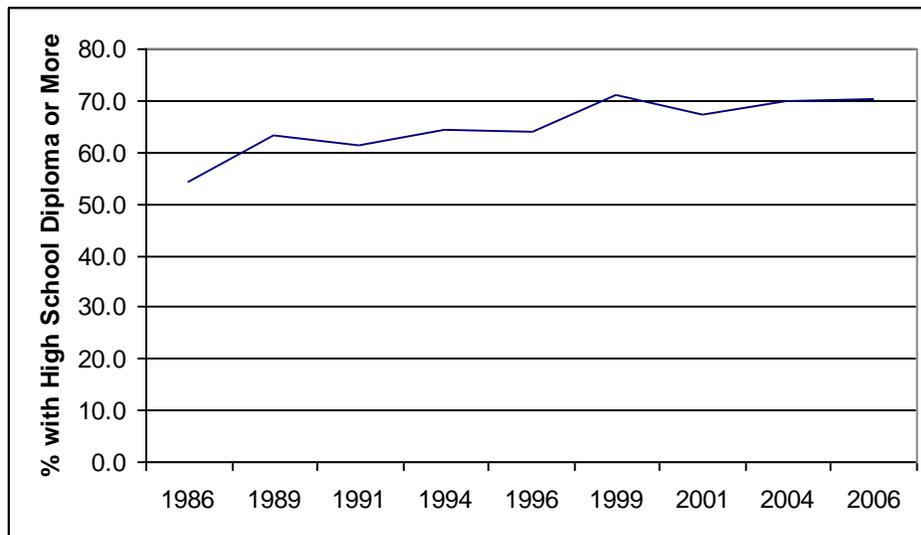
Source: GNWT Bureau of Statistics (2010e)

Figure 3.3-41
Hay River Employment and Unemployment Rates, 1986 - 2006.

3.3.5.4 Education

The percent of residents achieving a high school diploma has generally increased since 1986 in Hay River (Figure 3.3-42). In 1986, 54.3% of the population had completed high school, compared to 70.4% in 2006. Data for specific educational levels, such as trade, technical, and university certificates and diplomas were unavailable.

In 2006, the employment rate (i.e., the percentage of persons aged 15 years or older who were working at a job) of those with a high school diploma or greater was 82.6%. Whereas, the employment rate of those with less than a high school diploma was 52.4% (NWT Bureau of Statistics 2010e).



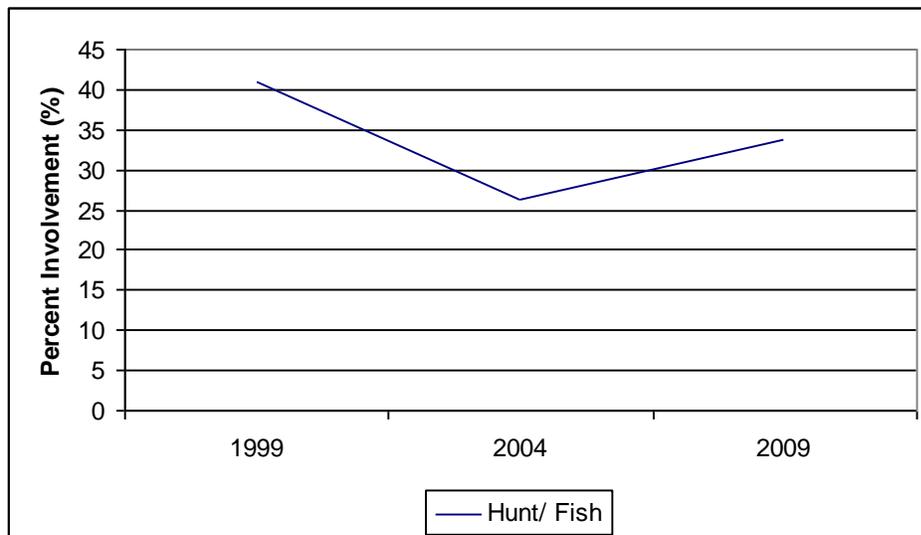
Source: GNWT Bureau of Statistics (2010e)

Figure 3.3-42
Hay River Educational Levels, 1986 - 2006.

3.3.5.5 Traditional Activities

The overall trend for persons 15 and over who hunt or fish is decreasing (Figure 3.3-43). In 1999, 41.0% hunted and fished, compared to 33.7% in 2009 (GNWT Bureau of Statistics 2009c).

Data from 2003 for Hay River indicate that 2.2% of the population trapped, and 14.1% consumed country foods (GNWT Bureau of Statistics 2010c). By 2008, the percentage of households consuming country foods had risen to 15.7% (GNWT Bureau of Statistics 2009b).



Source: GNWT Bureau of Statistics (2009c)

Figure 3.3-43
Hay River Participation in Traditional Activities, 1999 - 2009.

3.3.5.6 Language

The languages spoken in Hay River include English, south Slavey, Chipewyan, and Michif (Legislative Assembly of the Northwest Territories ND(d)). The percentage of Hay River’s Aboriginal population that speaks an Aboriginal language is slowly declining. In 1984, 39.0% of the Aboriginal population could speak an Aboriginal language, this has since declined to 15.9% in 2009 (GNWT Bureau of Statistics 2009a; 2010e).

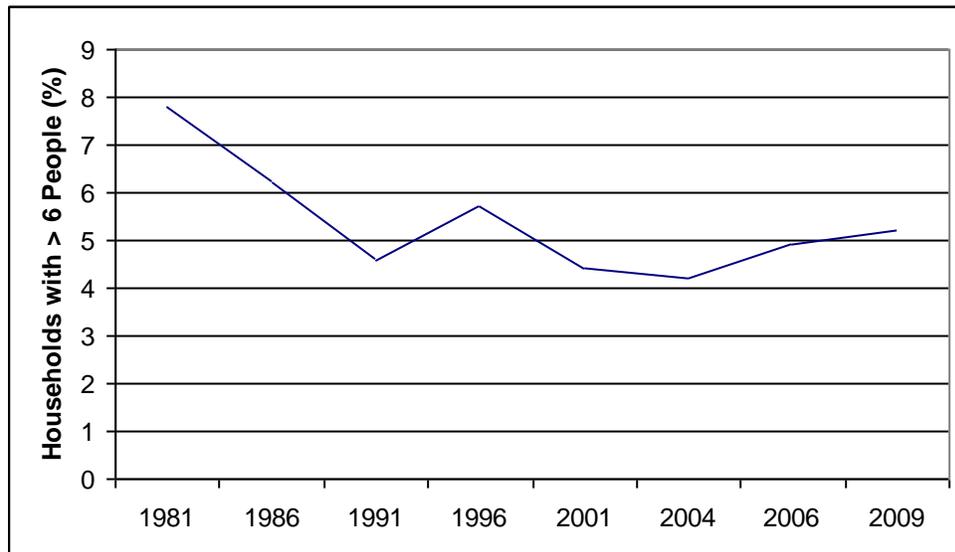
3.3.5.7 Community Services

Community services in Hay River are offered through the Hay River Health and Social Services Authority. Services include a medical clinic, hospital, child welfare facility, care facility, and other social services (GNWT Health and Social Services 2009a). The town has a Class 2 water system with seasonal reservoir. Along with serving its residents, Hay River provides drinking water to the Hay River Reserve by underground HDPE pipe, as well as trucked water service to Enterprise and Kakisa (GNWT Municipal and Community Affairs ND).

Hay River offers educational services through Princess Alexandra School. The community also has recreation, sport, and aquatic facilities.

3.3.5.8 Housing

In 2009, there were 1,349 houses in Hay River; 69.7% were owned. The percentage of households with more than six people has declined since 1981 (Figure 3.3-44). In 1981, 7.8% of households had more than six people living in the household, which declined to 5.2% in 2009 (GNWT Bureau of Statistics 2010e).

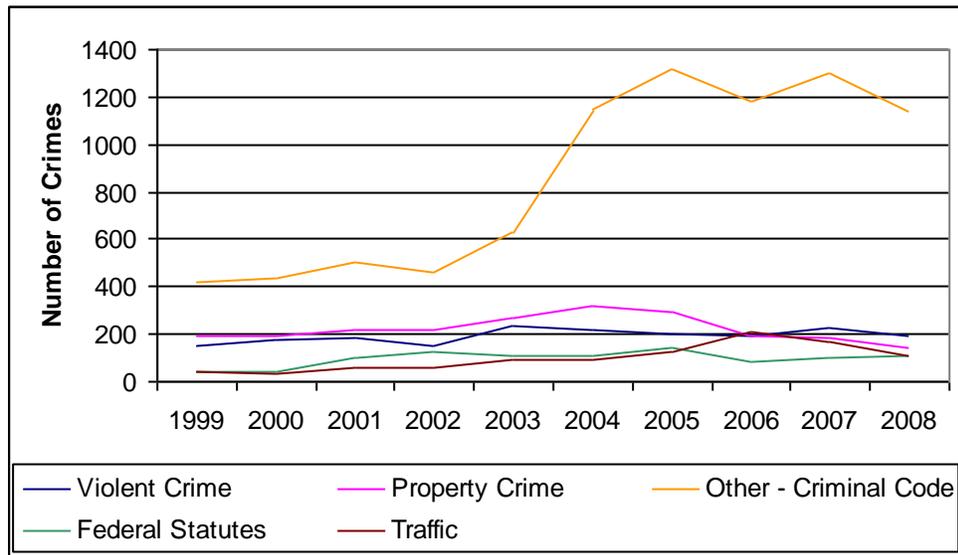


Source: GNWT Bureau of Statistics (2010e)

Figure 3.3-44
Hay River Households with More Than Six People, 1981 - 2009.

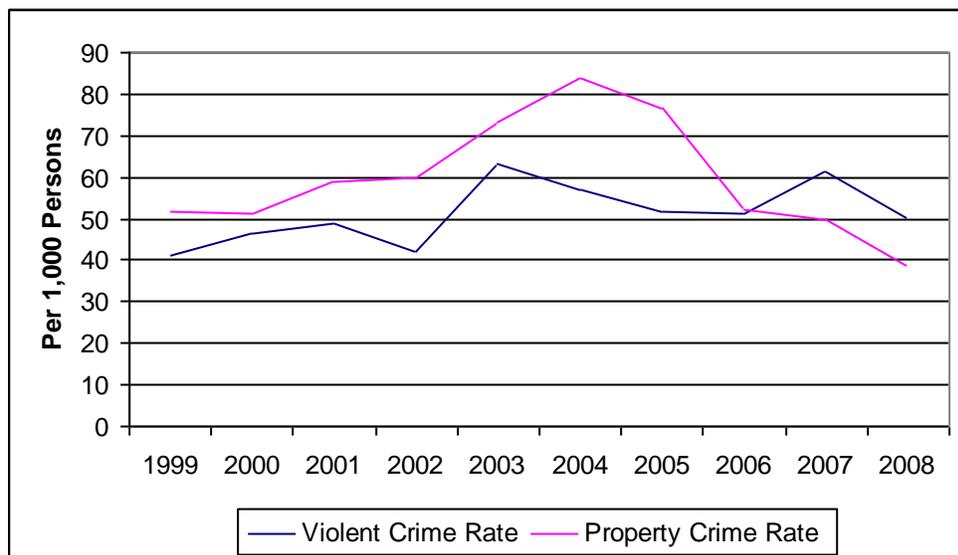
3.3.5.9 Crime

The Hay River RCMP detachment reports crime statistics. Crime levels have generally increased since 1999, with noticeable increases in criminal code crimes between 2003 and 2005 (Figure 3.3-45). Similar trends occurred with the violent crime and property crime rates per 1,000 persons (Figure 3.3-46).



Source: GNWT Bureau of Statistics (2010e)

Figure 3.3-45
Hay River Crimes, 1999 - 2008.

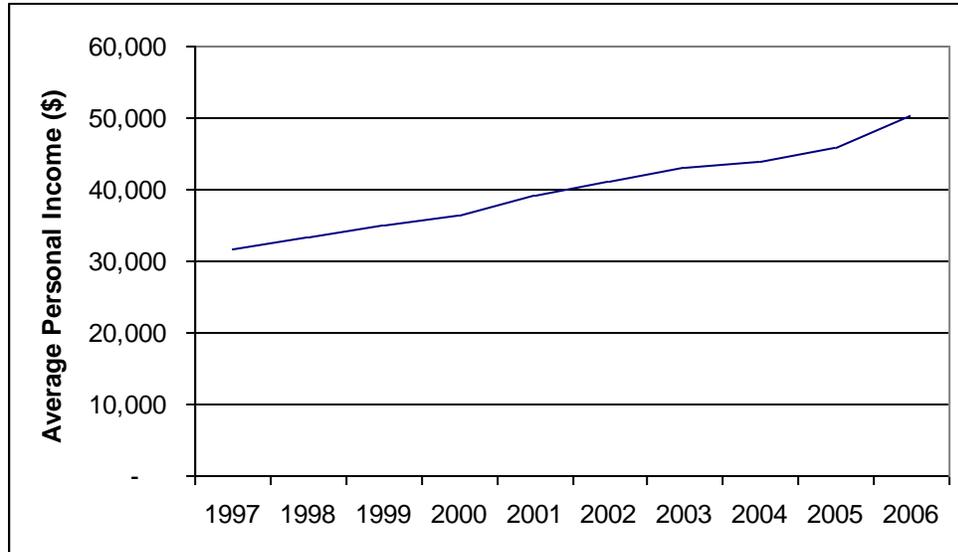


Source: GNWT Bureau of Statistics (2010e)

Figure 3.3-46
Hay River Violent Crime and Property Crime Rates, 1999 - 2008.

3.3.5.10 Income

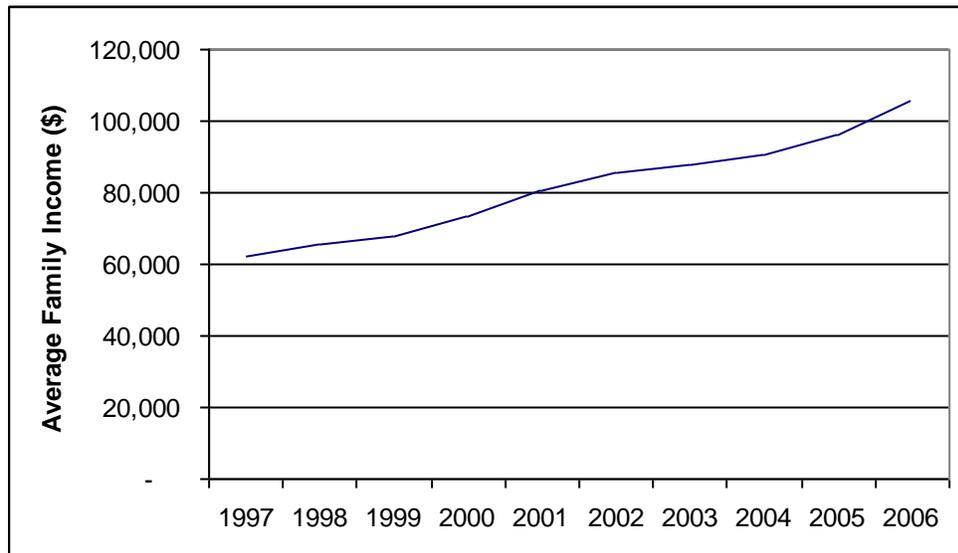
The average personal income for residents of Hay River has increased since 1997 (Figure 3.3-47). Average income in 1997 was \$31,758 and increased to \$50,376 in 2006.



Source: GNWT Bureau of Statistics (2010e)

Figure 3.3-47
Hay River Average Personal Income, 1997 – 2006.

Similarly, the average family income has increased since 1997 (Figure 3.3-48). In 1997, the average family income was \$62,191. This number increased to \$105,661 in 2006.



Source: GNWT Bureau of Statistics (2010e)

Figure 3.3-48
Hay River Average Family Income, 1997 – 2006.

3.3.6 Hay River Reserve

3.3.6.1 Background

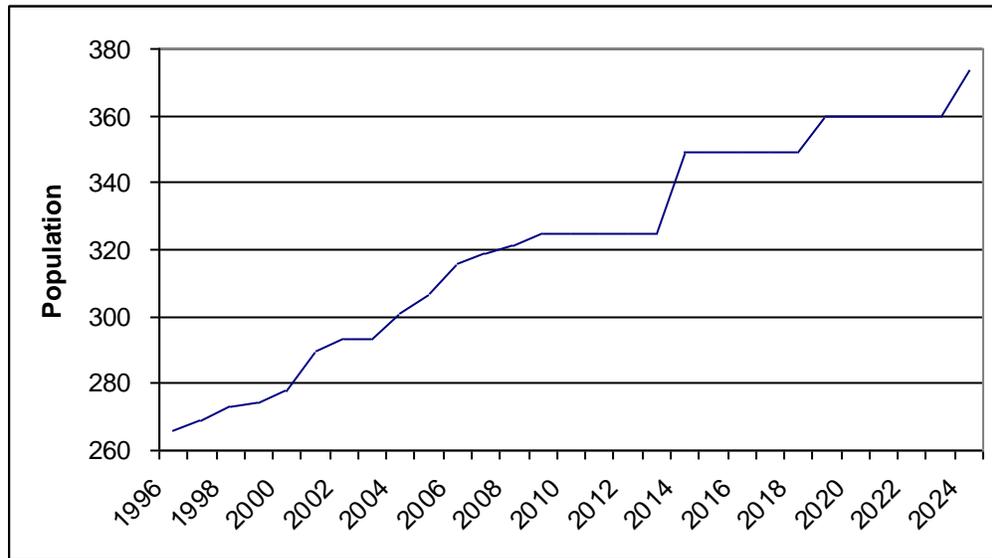
The Hay River Reserve is located on the south shore of Great Slave Lake, on the east bank of the east channel of the Hay River (Figure 3.1-1). The Reserve is located approximately 200 km southwest of Yellowknife by air, and approximately 134 km from the Alberta border via the Mackenzie Highway. The community is located adjacent to the Town of Hay River and is accessible year round by air, road and railroad (Legislative Assembly of the Northwest Territories ND(d)).

The area now known as the Hay River Reserve was traditionally used by the K'atlodeeche Dene as a summer fish camp and abandoned in the winter months for more plentiful hunting lands. Chief Chiatlo established the first permanent settlement on the Hay River in the 1890s. Aside from family cabins, this location (now called Old Village) grew to include both Anglican and Catholic missions, as well as a number of temporary trading posts. Since the 1960s, the population has gradually moved from Old Village, which was subject to flooding, to the new village, which offers higher ground.

In the early 1970s, in anticipation of the increased economic activity associated with the proposed Mackenzie Valley Pipeline, the Town of Hay River attempted to annex land on the east side of the Hay River. In response, the K'atlodeeche First Nation (KFN) Chief and Council lobbied the Department of Indian and Northern Affairs to create a reserve to ensure that more traditional lands were not taken over by the Town. The Hay River Reserve is the first of its kind in the Northwest Territories. It includes 1,818 hectares and is bounded on the south side by Highway 5.

3.3.6.2 Population

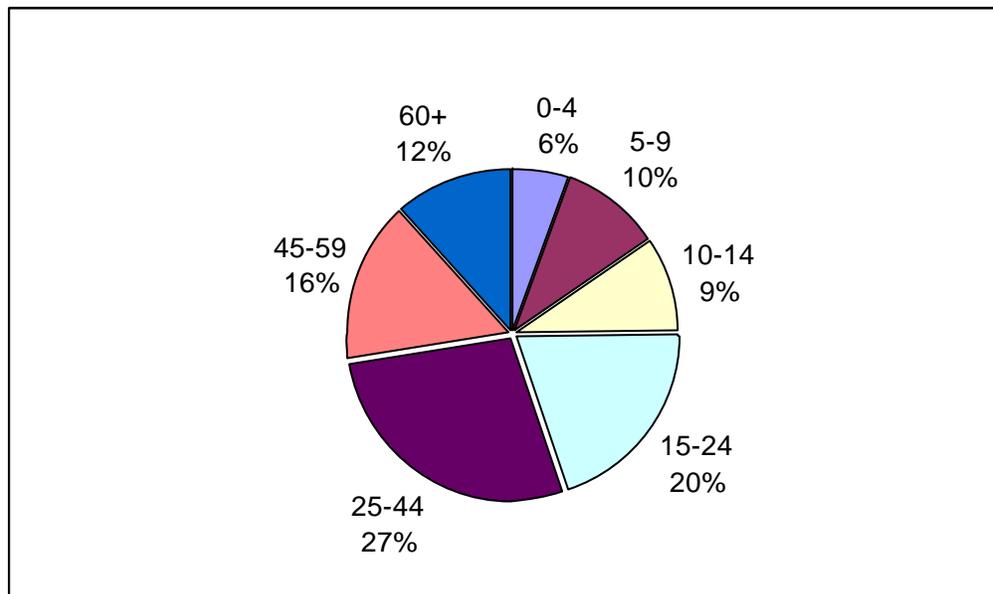
The historic and projected population data for the Hay River Reserve are provided in Figure 3.3-49. The population of the Hay River Reserve has increased from 266 to 325 between 1996 and 2009, indicating an average annual growth rate of 1.6 since 1996 (GNWT Bureau of Statistics 2010f). The population is projected to increase to 360 in 2019 and 374 by 2024. Approximately 99.1% of Hay River Reserve's population is Aboriginal.



Source: GNWT Bureau of Statistics (2010f)

Figure 3.3-49
Hay River Reserve Historic and Projected Population, 1996 – 2024.

The population by age and gender are described in Figure 3.3-50 and Table 3.3-6 respectively. Data indicate that the population of Hay River Reserve is relatively young, with 72% being less than 45 years old. There are a greater number of females than males in the community.



Source: GNWT Bureau of Statistics (2010f)

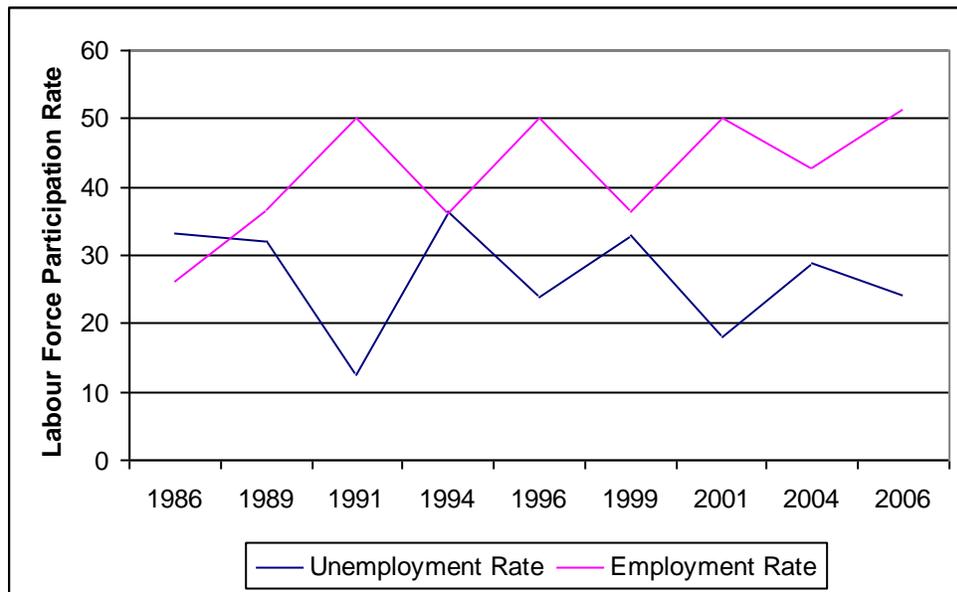
Figure 3.3-50
Hay River Reserve Population by Age Group, 2009.

TABLE 3.3-6: HAY RIVER RESERVE POPULATION BY GENDER, 2009		
Gender	Population	Percent
Male	157	48%
Female	168	52%

Source: GNWT Bureau of Statistics (2010f)

3.3.6.3 Employment

Community employment data for the Hay River Reserve are provided in Figure 3.3-51. In 2006, 215 residents were aged 15 years and older. Employment data indicate that 110 residents were employed, 35 residents were unemployed, and 65 residents were not in the labour force. Of the 145 residents in the labour force, this translates into a participation rate of 67.4% and an unemployment rate of 24.1%. Although there have been significant fluctuations, the general trend indicates an increase in employment since 1986, and a declining unemployment rate (GNWT Bureau of Statistics 2010f).



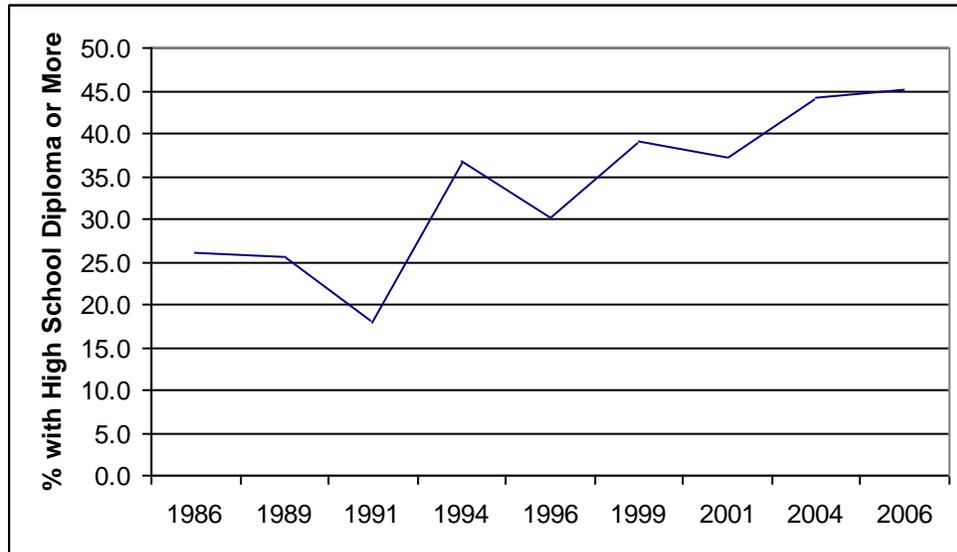
Source: GNWT Bureau of Statistics (2010f)

Figure 3.3-51
Hay River Reserve Employment and Unemployment Rates, 1986 – 2006.

3.3.6.4 Education

The percent of residents achieving a high school diploma has increased since 1986 at the Hay River Reserve (Figure 3.3-52). In 1986, 26.1% of the population had completed high school, compared to 45.2% in 2006 (GNWT Bureau of Statistics 2010f). Data for specific educational levels, such as trade, technical, and university certificates and diplomas are unavailable.

In 2006, the employment rate (i.e., the percentage of persons aged 15 years or older who were working at a job) of those with a high school diploma or greater was 83.3%. Whereas, the employment rate of those with less than a high school diploma was 29.2% (NWT Bureau of Statistics 2010f).



Source: GNWT Bureau of Statistics (2010f)

Figure 3.3-52
Hay River Reserve Educational Levels, 1986 – 2006.

3.3.6.5 Traditional Activities

In 2003, 37.7% of the population hunted and fished, 12.7% trapped, and 71.3% consumed country foods (half or more) (GNWT Bureau of Statistics 2010f).

3.3.6.6 Language

The languages spoken in Hay River include South Slavey, Chipewyan and English (Legislative Assembly of the Northwest Territories ND(e)). The percentage of Hay River Reserve's Aboriginal population that speaks an Aboriginal language was 50.7% in 2004 (GNWT Bureau of Statistics 2010f).

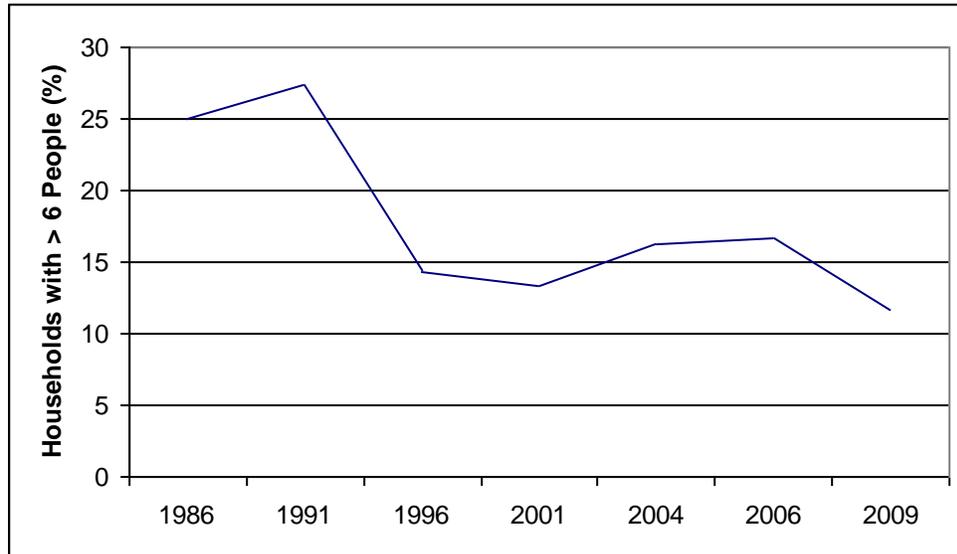
3.3.6.7 Community Services

Community services at the Hay River Reserve are offered through the Hay River Health and Social Services Authority. Services include a health station and social services, which is serviced from Hay River (GNWT Health and Social Services 2009b). Water is provided by underground HDPE pipe from Hay River (GNWT Municipal and Community Affairs ND). Chief Sunrise School on the Reserve offers classes for kindergarten to Grade 12.

The new village boasts a supermarket, gas bar, band office building, school and gym, senior's complex, alcohol/drug treatment center and improved housing (Legislative Assembly of the Northwest Territories ND(e)).

3.3.6.8 Housing

The percentage of households at the Hay River Reserve with more than six people has declined from 25.0% in 1986 to 11.7% in 2009 (Figure 3.3-53) (GNWT Bureau of Statistics 2010f). In 2009, there were 94 houses at the Hay River Reserve; 68.0% were owned.



Source: GNWT Bureau of Statistics (2010f)

Figure 3.3-53
Hay River Reserve Households with More Than Six People, 1981 – 2009.

3.3.6.9 Crime

Crime data are not available specifically for the Hay River Reserve. It is likely that these data are included in the Town of Hay River's data (see Section 3.3.5).

3.3.6.10 Income

Income statistics, such as average personal income or average family income, are not reported for the Hay River Reserve (GNWT Bureau of Statistics 2010f).

3.3.7 Fort Smith

3.3.7.1 Background

The Town of Fort Smith is the southernmost community in the Northwest Territories and is located immediately north of the Northwest Territories/Alberta border (Figure 3.1-1). The town is situated on the shore of the Slave River south of the "Rapids of the Drowned," and is located approximately 322 km southwest of Yellowknife, by air. Fort Smith is accessible year round by air and road (Highway 6) (Legislative Assembly of the Northwest Territories ND(c)).

The Slavey Dene originally occupied the area around Fort Smith. However, by 1870 the Cree occupied the Slave River, which forced the Dene to move north.

In 1874 the Hudson Bay trading post was established near the portage route. Fort Smith's location on the Slave River offered an important link for water traffic between the south and the Mackenzie River valley. The valley was named after Alexander Mackenzie, who had navigated the Slave River in his quest for a route to the Western Ocean. The Fort was named after Donald Alexander Smith, who was a builder of the Canadian Pacific Railway, a Hudson Bay Company governor, and a member of the first Northwest Territories Council.

In 1876 the Roman Catholic Mission was moved to Fort Smith from Salt River; the mission operated a sawmill and a farm. Four years later the Hudson Bay Company built an outpost at the south end of the rapids called Smith's Landing. By this time the southerly Caribou Chipewyan had also moved into the area and signed Treaty No. 8 at Smith's Landing on July 17, 1899.

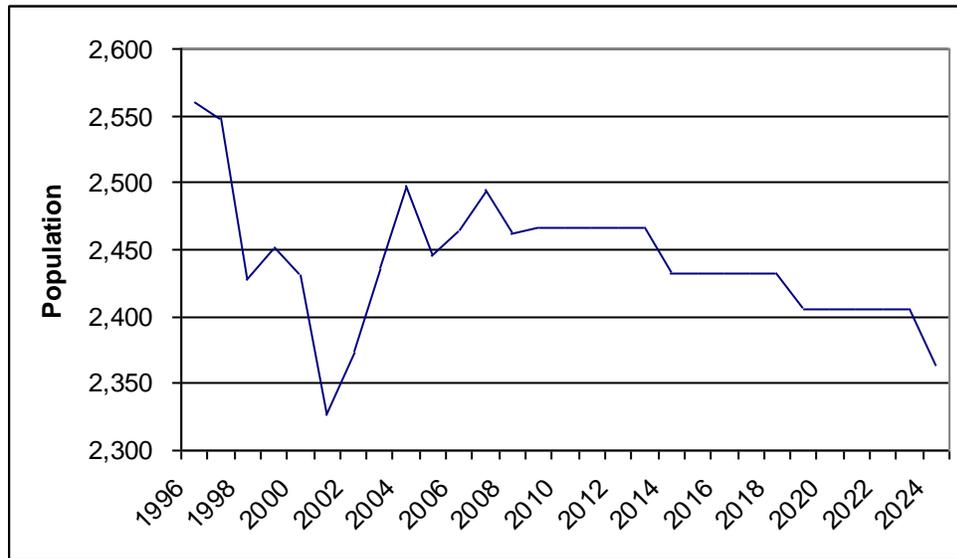
The Northwest Mounted Police established a post at Smith's Landing in 1915 and renamed the place Fort Fitzgerald in honor of the inspector who died on the Dawson Patrol from Fort McPherson in 1911 (Town of Fort Smith 2010). Lumber from the mission's sawmill was used to construct the first hospital and the school a year later. A federal government administration building was built in 1921 and the first court of justice in the Mackenzie District convened in Fort Smith that same year.

Wood Buffalo National Park, located near the community, was founded in 1922 and by the late 1920s Fort Smith began to boom. The opening of a radio station in 1925 and an airport in 1928 brought people and new income to the community. In 1934, many people came to the area in search of Yellowknife's gold and Fort Smith became an important stopover. The Anglican Mission House and Church were built in 1939 to accommodate travelers and residents. In 1942 the United States Army barged soldiers and equipment down the Slave River to build a tractor road to Hay River en route to the Canol Oil Pipe Line Project. Fort Smith became the single-most important transportation and administration centre for the Mackenzie District until 1967 when the Territorial capitol moved to Yellowknife.

Fort Smith has a reputation as a centre of northern education (Town of Fort Smith 2010). In 1968, a Heavy Equipment Operator course was offered at Fox Holes, just west of Fort Smith. In 1969, courses were moved to Fort Smith and the Adult Vocational Training Centre (AVTC) was established, which later became Thebacha College, then Arctic College, and finally Aurora College (Aurora College 2009). Today Fort Smith remains the administrative capitol for the region. Residents rely on hunting, fishing, trapping, and tourism for their livelihood (Legislative Assembly of the Northwest Territories ND(c)).

3.3.7.2 Population

The historic and projected population data for Fort Smith are provided in Figure 3.3-54. Fort Smith's population has decreased from 2,560 to 2,466 between 1996 and 2009, indicating an average annual growth rate of -0.3 since 1996 (GNWT Bureau of Statistics 2010d). In 2001, the population decreased to a low of 2,326. The population is projected to decrease to 2,405 in 2019 and 2,362 by 2024. Approximately 63.1% of Fort Smith's population is Aboriginal.

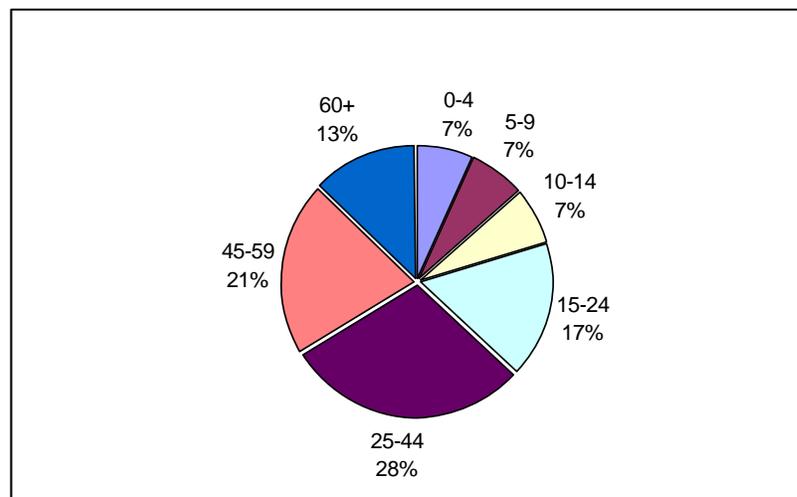


Source: GNWT Bureau of Statistics (2010d)

Figure 3.3-54
Fort Smith Historic and Projected Population, 1996 – 2024.

From 1998 to 2007, there were 27 to 46 births in Fort Smith each year, with an average of 35.2 births per year over the ten year period. The number of teen births ranged from 3 to 8 between 1998 and 2007, with an average of 5.3 teen births per year. The annual death rates have fluctuated between 7 and 20 deaths reported per year between 1997 and 2006.

The population by age and gender are described in Figure 3.3-55 and Table 3.3-7, respectively. Data indicate that the population of Fort Smith is relatively young, with 66% being less than 45 years old. There are a slightly greater number of males than females in the community.



Source: GNWT Bureau of Statistics (2010d)

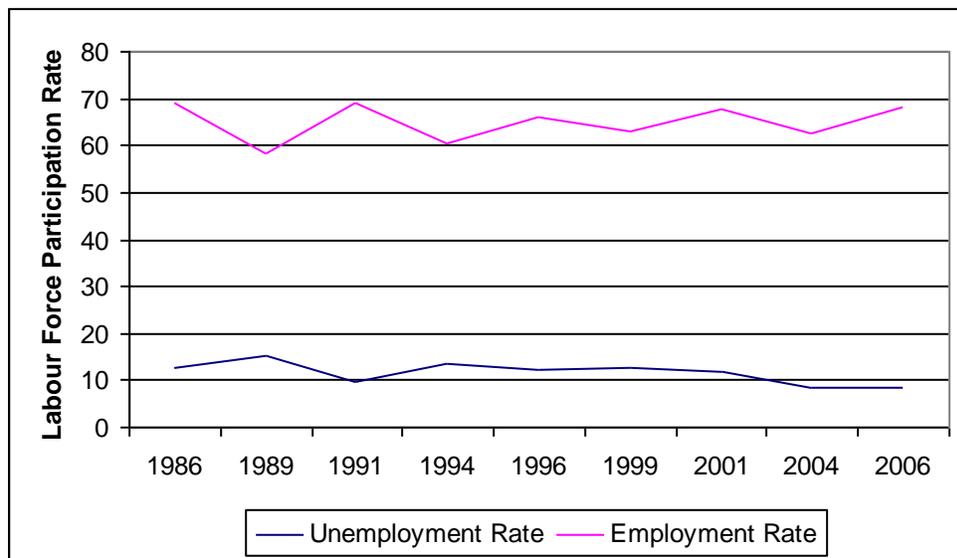
Figure 3.3-55
Fort Smith Population by Age Group, 2009.

TABLE 3.3-7: FORT SMITH POPULATION BY GENDER, 2009		
Gender	Population	Percent
Male	1,244	50.4%
Female	1,222	49.6%

Source: GNWT Bureau of Statistics (2010d)

3.3.7.3 Employment

Community employment data for Fort Smith are provided in Figure 3.3-56. In 2006, 1,790 residents were aged 15 years and older. Employment data indicate that 1,220 residents were employed, 110 residents were unemployed, and 455 residents were not in the labour force. Of the 1,330 Fort Smith residents in the labour force, this translates into a participation rate of 74.3% and an unemployment rate of 8.3%. Since 1986, the general trend for Fort Smith indicates a slight decline in employment over time, with smaller fluctuations over time. Unemployment is also declining (GNWT Bureau of Statistics 2010d).



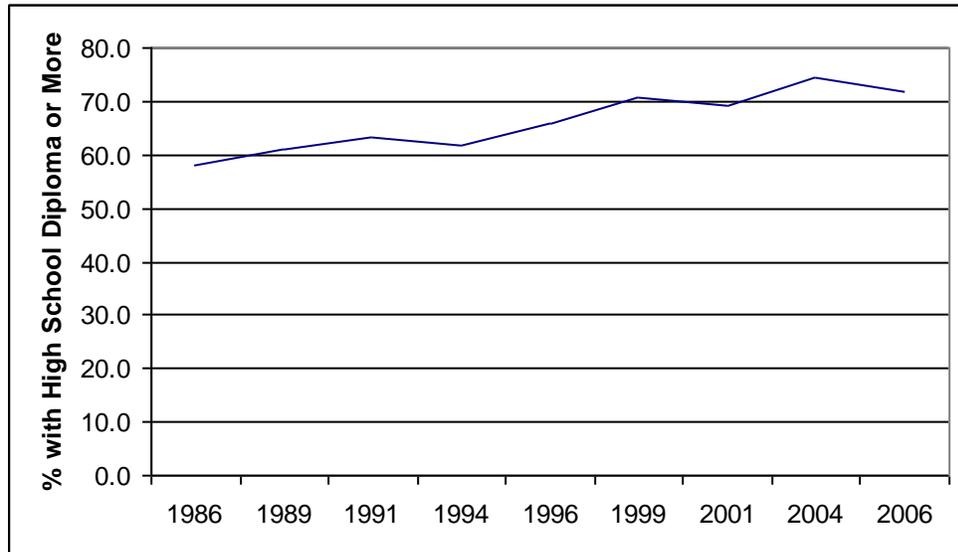
Source: GNWT Bureau of Statistics (2010d)

Figure 3.3-56
Fort Smith Employment and Unemployment Rates, 1986 – 2006.

3.3.7.4 Education

The percent of residents achieving a high school diploma has increased since 1986 in Fort Smith (Figure 3.3-57). In 1986, 58.1% of the Fort Smith population had completed high school, compared to 72.0% in 2006 (GNWT Bureau of Statistics 2010d). Data for specific educational levels such as trade, technical, and university certificates and diplomas were unavailable.

In 2006, the employment rate (i.e., the percentage of persons aged 15 years or older who were working at a job) of those with a high school diploma or greater was 80.2%. Whereas, the employment rate of those with less than a high school diploma was 38.0% (NWT Bureau of Statistics 2010d).



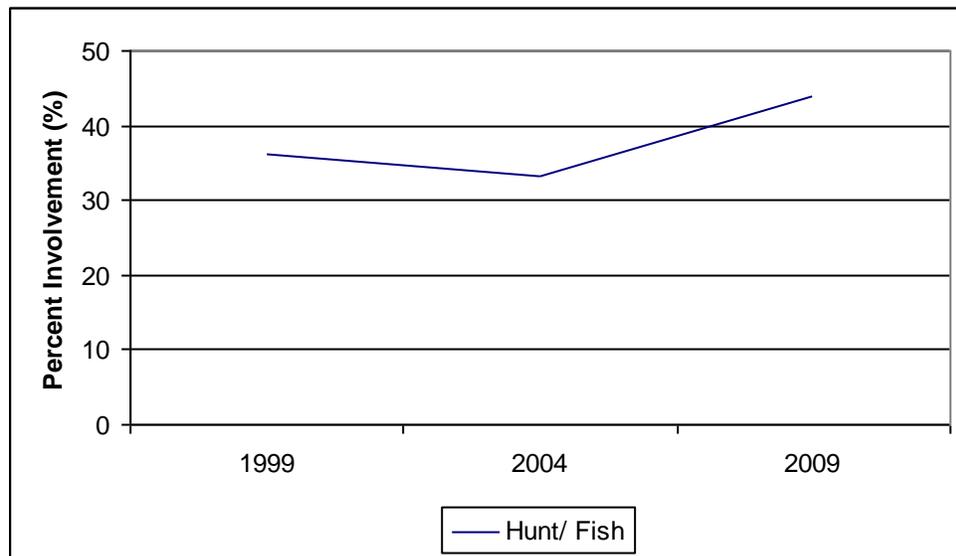
Source: GNWT Bureau of Statistics (2010d)

Figure 3.3-57
Fort Smith Educational Levels, 1986 – 2006.

3.3.7.5 Traditional Activities

The overall trend for persons 15 and over who hunt or fish is increasing (Figure 3.3-58). In 1999, 36.3% hunted and fished, compared to 43.9% in 2009 (GNWT Bureau of Statistics 2009c).

Data from 2003 for Fort Smith indicate that 8.0% of the population trapped, and 26.4% consumed country foods (GNWT Bureau of Statistics 2010c). By 2008, the percentage of households consuming country foods had declined to 22.2% (GNWT Bureau of Statistics 2009b).



Source: GNWT Bureau of Statistics (2009c)

Figure 3.3-58
Fort Smith Participation in Traditional Activities, 1999 – 2009.

3.3.7.6 Language

The languages spoken in Fort Smith include Chipewyan, Cree, Michif and English (Legislative Assembly of the Northwest Territories ND(c)). The percentage of Fort Smith's Aboriginal population that speaks an Aboriginal language has been declining. In 1984, 36.0% of the Aboriginal population could speak an Aboriginal language, this has since declined to 20.4% in 2009 (GNWT Bureau of Statistics 2009a; 2010d).

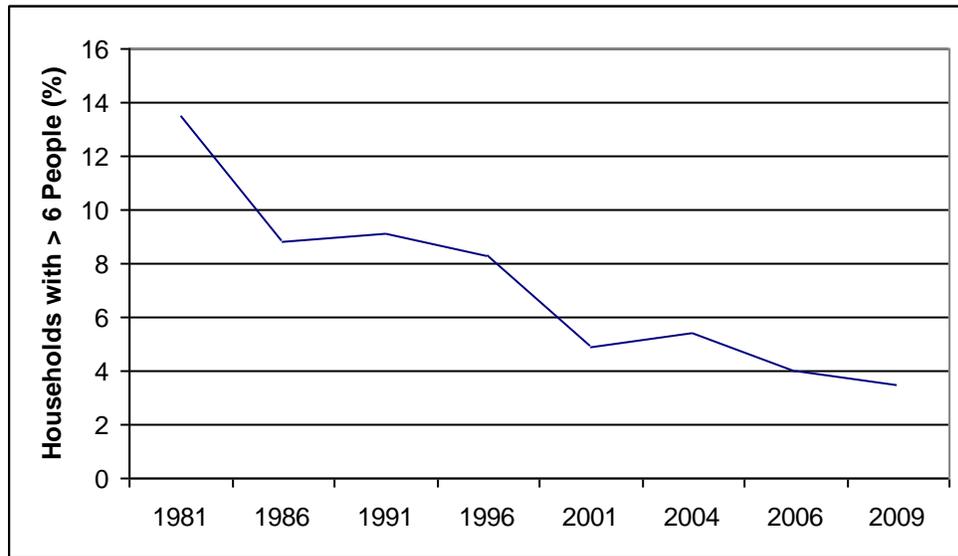
3.3.7.7 Community Services

Community services in Fort Smith are offered through the Fort Smith Health and Social Services Authority. Services include a health centre, child welfare facility, care facility, family violence shelter, multi-purpose facility and wellness centre for mental health and addictions (GNWT Health and Social Services 2009a). The town has a Class 2 water system with seasonal reservoir. Most residences have water and sewer pipe access, with some still using trucked water service (GNWT Municipal and Community Affairs ND).

Fort Smith offers schooling from Kindergarten to Grade 12, as well as the Thebacha campus of Arctic College. The community also has recreation and community centres, restaurants, the Northern Life Museum, the museum ship Radium King, and the park headquarters for Wood Buffalo National Park.

3.3.7.8 Housing

In 2009, there were 883 houses in Fort Smith; 61.8% were owned. The percentage of households with more than six people has declined since 1981 (Figure 3.3-59). In Fort Smith, 13.5% of households had more than six people living in the household in 1981, which declined to 3.5% in 2009 (GNWT Bureau of Statistics 2010d).

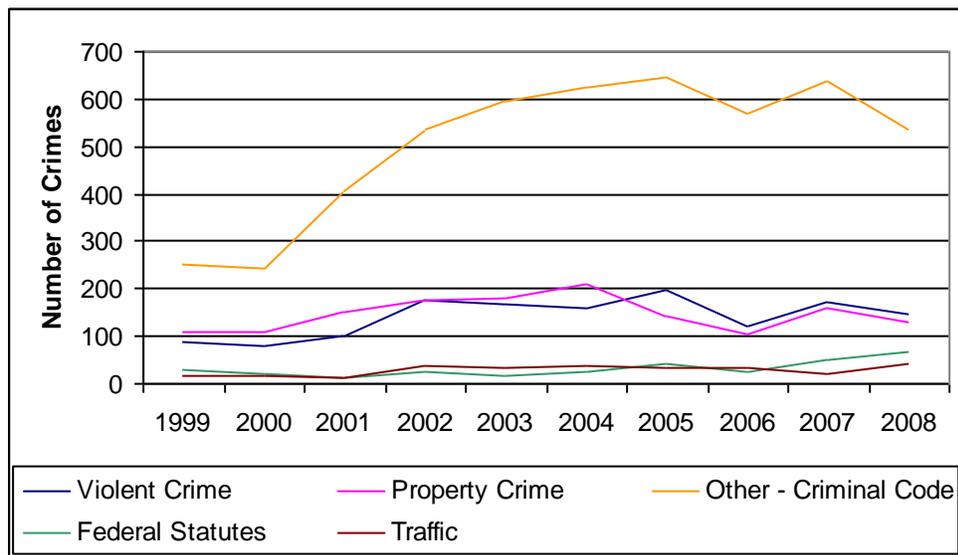


Source: GNWT Bureau of Statistics (2010d)

Figure 3.3-59
Fort Smith Households with More Than Six People, 1981 – 2009.

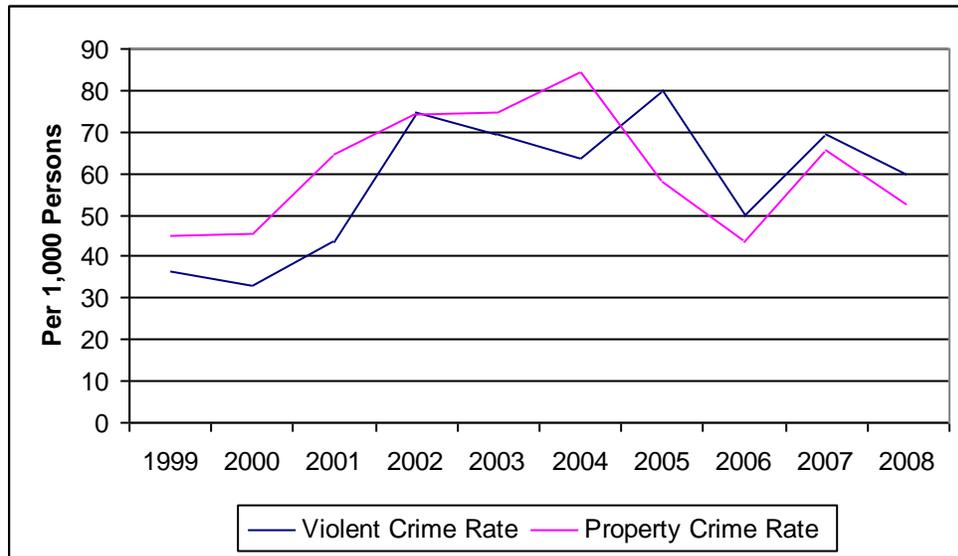
3.3.7.9 Crime

The Fort Smith RCMP detachment reports crime statistics. Crime levels have generally increased since 1999, with noticeable increases in crimes between 2000 and 2002 and between 2006 and 2007 (Figure 3.3-60). Similar trends occurred with the violent crime and property crime rates per 1,000 persons (Figure 3.3-61).



Source: GNWT Bureau of Statistics (2010d)

Figure 3.3-60
Fort Smith Crimes, 1999 – 2008.

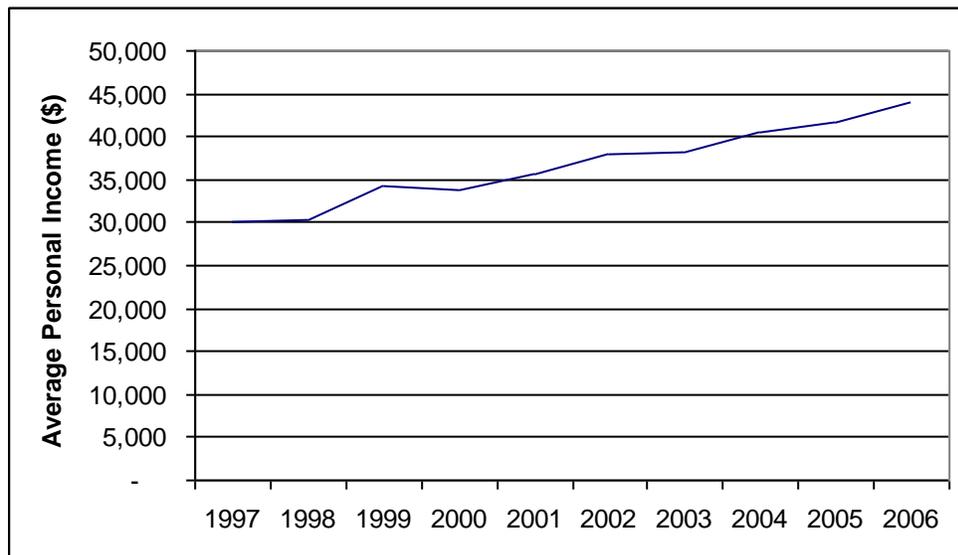


Source: GNWT Bureau of Statistics (2010d)

Figure 3.3-61
Fort Smith Violent Crime and Property Crime Rates, 1999 – 2008.

3.3.7.10 Income

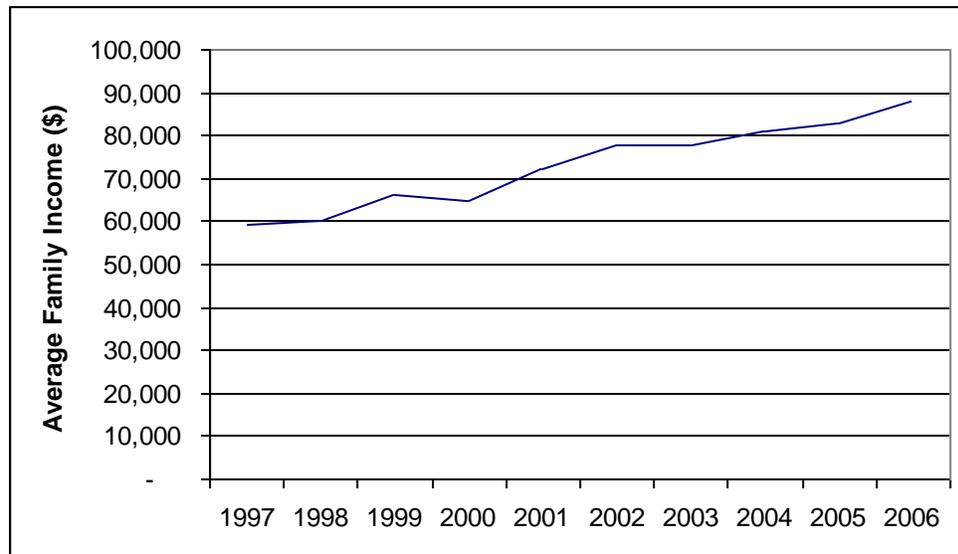
The average personal income for residents of Fort Smith has increased since 1997 (Figure 3.3-62). Average income in 1997 was \$30,208. This number increased to \$44,063 in 2006.



Source: GNWT Bureau of Statistics (2010d)

Figure 3.3-62
Fort Smith Average Personal Income, 1997 – 2006.

Similarly, the average family income has generally increased since 1997 (Figure 3.3-63). In 1997, the average family income was \$59,430. This number increased to \$88,129 in 2006.



Source: GNWT Bureau of Statistics (2010d)

Figure 3.3-63
Fort Smith Average Family Income, 1997 – 2006.

3.4 SOCIO-ECONOMIC CONDITIONS

Every year, NWT diamond mine operators (e.g., BHP Billiton, Diavik and De Beers) provide specific monitoring data to the GNWT for analysis as part of their Socio-Economic Assessment reporting. Departments that review this information are as follows: Health and Social Services; Education, Culture and Employment, Finance, Industry, Tourism and Investment; Justice; Bureau of Statistics; and the NWT Housing Corporation. The results of the analysis are described in the report *Communities and Diamonds: Socio-Economic Impacts in the Communities of Behchoko, Gameti, Whati, Wekwéeti, Dettah, N'Dilo, Lutsel K'e and Yellowknife*, which summarizes trends identified for each socio-economic indicator. Table 3.4-1 identifies the trends observed for each indicator as compared to the communities of Yellowknife and Small Local Communities as defined in the above report (GNWT HSS et al. 2010).

The communities outside of Yellowknife are referred to as “Small Local Communities” and represent the northern Slave Lakes region, including three communities in the RSA (Dettah, N'Dilo and Lutsel K'e. Given their population size and geographical placement, the Small Local Communities are considered adequately representative. The associated trends are used to anticipate social effects in the RSA communities within the Human Environment Assessment.

It is also important to note that there are often multiple spellings for the communities located within the RSA. In particular the Deninu Ku'e First Nation has two different spellings: Deninu Ku'e or Deninu K'ue. The former is predominantly used in this report.

Current socio-economic conditions and relevant trends in Yellowknife and Small Local Communities (SLCs) are described in Table 3.4-1.

TABLE 3.4-1: SOCIO-ECONOMIC INDICATOR TABLE			
Indicator	Observation	Trend	
		Small Local Communities	Yellowknife
Community, Family, and Individual Well-being			
Potential Years of Life Lost (PYLL)	PYLL has remained the same in Yellowknife, but has declined in the Small Local Communities (SLCs).	↓	---
Injuries	Injuries are going down in Yellowknife. No trend in SLCs.	---	↓
Suicides	No trend is noted in Yellowknife or SLCs.	---	---
Communicable Diseases	Sexually transmitted infections (STIs) have gone up in the NWT, including Yellowknife and SLCs. Youth aged 15-24 have been most affected.	↑	↑
Teen Births	The teen birth rate has dropped across the NWT, especially in SLCs.	↓	↓
Single-parent Families	Single-parent families are increasing across the NWT, mostly in SLCs.	↑	---
Child Receiving Services	The rate of children receiving services has gone up in SLCs.	↑	---
Spousal Assault/ Family Violence	It is difficult to draw conclusions about the trend for spousal assault on the basis of rates of reported assault. The number of women and children using shelters has fallen. However, in the NWT, family violence is quite high.	---	---
Total Police-Reported Crimes	The total crime rate in Yellowknife and SLCs is higher than in 1996, primarily due to Other <i>Criminal Code</i> Offences.	↑	↑
Violent Crimes	The violent crime rate has gone up in Yellowknife. No trend is noted in SLCs.	---	↑
Property Crimes	Property crime rates have been declining.	↓	↓
Federal Statute Crimes	Federal statute crimes have gone up in Yellowknife and SLCs; these crimes include drug offences.	↑	↑
Traffic Crime	The trend for traffic crime has decreased in SLCs, but no trends are identified in Yellowknife.	↓	---
Other <i>Criminal Code</i> Offences	The rate of Other <i>Criminal Code</i> crimes has increased in Yellowknife and SLCs.	↑	↑
Home Ownership	Home ownership has grown in Yellowknife. However, growth has slowed since 1996. No trend is noted in SLCs.	---	↑
Crowding	Crowding has gone down in the NWT. They are still highest in SLCs. However, the sharpest drop in crowding has been seen in SLCs.	↓	↓

TABLE 3.4-1: SOCIO-ECONOMIC INDICATOR TABLE			
Indicator	Observation	Trend	
		Small Local Communities	Yellowknife
Core Need	Core need went up in Yellowknife and dropped sharply in SLCs.	↓	↑
Cultural Well-being and Traditional Economy			
Aboriginal Language Use (Youth)	Home-language use of mother tongue has dropped in NWT. No trend is noted for Yellowknife, but may be starting to increase.	↓	---
Trapping	Trapping has increased in SLCs. No trend is noted for Yellowknife.	↑	---
Hunting and Fishing	Hunting and fishing have declined in Yellowknife. These activities have increased in SLCs.	↑	↓
Non-traditional Economy			
Average Income	Average income has been rising for some time, but has risen sharply since 1997. The largest increases have been seen in Yellowknife and SLCs. Average income levels remain lowest in SLCs.	↑	↑
Wage Disparity	The proportion of high- and middle- income earners has gone up across the NWT.	↓	↓
Income Assistance Cases	The income assistance case rate has dropped across the NWT. The drop was sharp in SLCs.	↓	↓
Employment Rate	The employment rate in Yellowknife has gone down. It has gone up in SLCs. More people are working more than 26 weeks periods across the NWT. In SLCs, the percent working more than 26 weeks increased by almost 40%.	↑	↓
Unemployment Rate	The unemployment rate has gone down in SLCs. No trend has been noted in Yellowknife.	↓	---
Participation Rate	The participation rate has gone down in Yellowknife and has increased in SLCs.	↑	↓
High School Completion	More people are completing high school. However, this was true before the diamond mines developed.	↑	↑
Less than Grade 9	The percent of population with less than Grade 9 has gone down across the NWT.	↓	↓
Business Activity	The number of listed businesses in Yellowknife has been declining, but there has been no change in SLCs.	---	
Net Effect on Government			
Net Government Costs	The direction of the trend cannot be stated with certainty. The cost of maintaining program and service levels is going up. Demand for government services is increasing.	---	
Sustainable Development			
Secondary Industry	The cutting and polishing industry is affected by a change in demand as a result of the global economic	---	↑

TABLE 3.4-1: SOCIO-ECONOMIC INDICATOR TABLE			
Indicator	Observation	Trend	
		Small Local Communities	Yellowknife
	crisis. Two of the three diamond processing companies operating in the NWT closed at the end of 2009.		

Source: GNWT 2010

3.5 ECONOMIC ACTIVITY

3.5.1 Local and Regional Business Capacity

Several mines currently operate in the NWT and receive support from local and regional businesses. Support businesses include construction, logistics, contract mining, infrastructure planning, earthworks, large diameter drilling, heavy equipment, heavy equipment simulator/field contract training, mining support services and mining products.

These private businesses are market driven. When the demand increases, businesses typically hire more personnel or work more efficiently to meet the demands. As well, these businesses are likely to expand their geographic territory to support demands in new areas of the NWT. Most businesses operate out of Yellowknife.

3.5.2 Current Economic Activity

3.5.2.1 North Slave Region

The North Slave region has experienced significant economic growth over the last decade. A large number of residents work directly for the major diamond mines, or with companies supplying mining goods and services. Future development of new mines will further expand employment and business opportunities. Opportunities also exist to expand services in retail trade and tourism.

The traditional economy also remains strong in the NWT through hunting, harvesting, and arts and crafts.

Located in the North Slave Region, Yellowknife is the capitol city of the Northwest Territories, accounting for 45% of the NWT's population and approximately 55% of the NWT's income. Approximately 55% of all businesses are located in Yellowknife.

Yellowknife remains the primary administration, supply and transportation center for the North Slave Region. The city has the NWT's largest airport, and is well situated to take advantage of polar routes. Its financial institutions along with the health and education system provide services to a significant area of the NWT.

As North America's diamond capitol, Yellowknife also has a well-developed tourism industry. Efforts are now being made to link diamonds to tourism. The city is already a prime destination for aurora viewing (GNWT ITI NDa).

Blachford Lake Lodge and Conference Resort is an all season eco-resort that offers a variety of outdoor activities year round. It has operated since the mid 1970s. The lodge is located in close proximity to the Thor Lake site (Blachford Lake Lodge and Conference Center ND).

3.5.2.2 South Slave Region

Hay River is the largest community in the South Slave. It is a major transportation hub for the NWT and is one of Canada's largest inland ports. Hay River also has the only rail connection in the NWT.

The region's second largest community is Fort Smith. Once the capitol of the NWT, the community now provides public services to the South Slave region and is a major educational centre. Wood Buffalo National Park, one of the largest National Parks in Canada, is headquartered in Fort Smith.

Parts of the South Slave region are within the Western Canada Sedimentary Basin where oil and gas development potential is significant. The historic Pine Point Mine is located in the South Slave region and is currently being evaluated for re-development by Tamerlane. A number of residents also work at the diamond mines on a rotational basis.

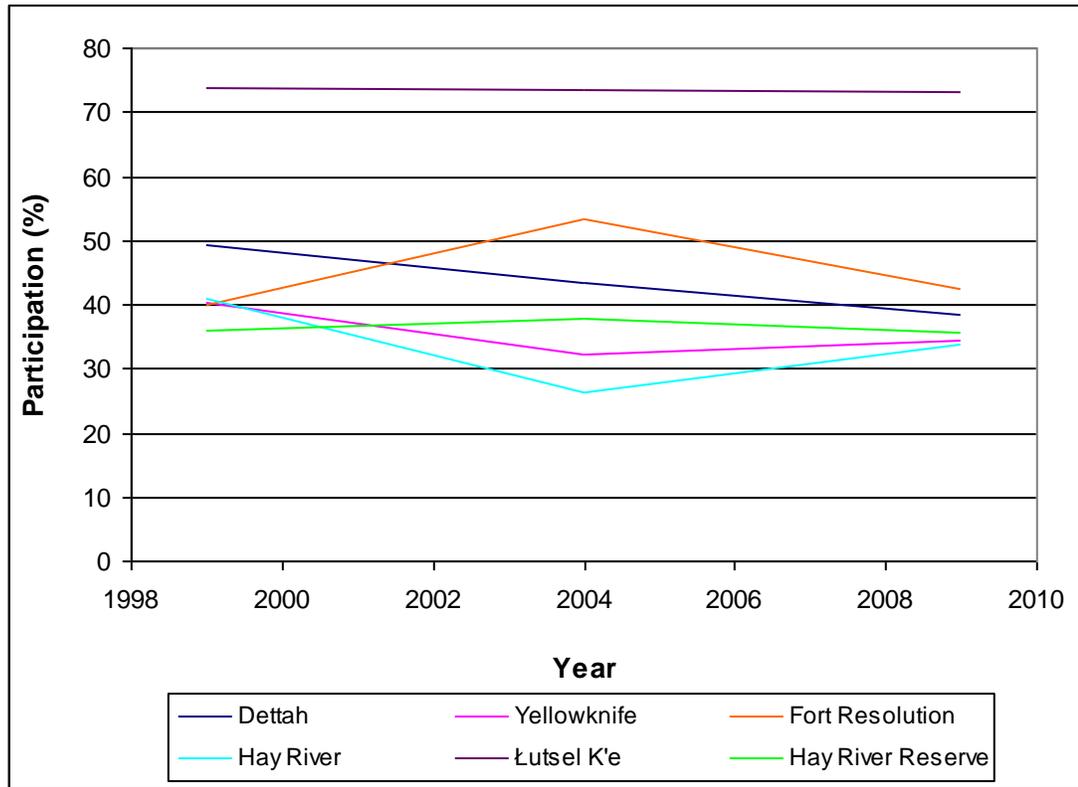
Development plans are also being considered to expand the region's hydro capacity to supply power to the diamond mines. Other industries include tourism, transportation, manufacturing, commercial fishing, forestry, trapping and arts and crafts (GNWT ITI NDb).

3.6 TRADITIONAL HARVESTING ACTIVITIES

Traditional harvesting continues to be an important part of Aboriginal culture in the NWT. In general, however, the percent of persons 15 and over who hunt and fish in the communities surrounding the Thor Lake and Pine Point sites has declined from 1999 to 2009 (GNWT Bureau of Statistics 2010i).

3.6.1 Harvesting Trends in the North and South Slave Region

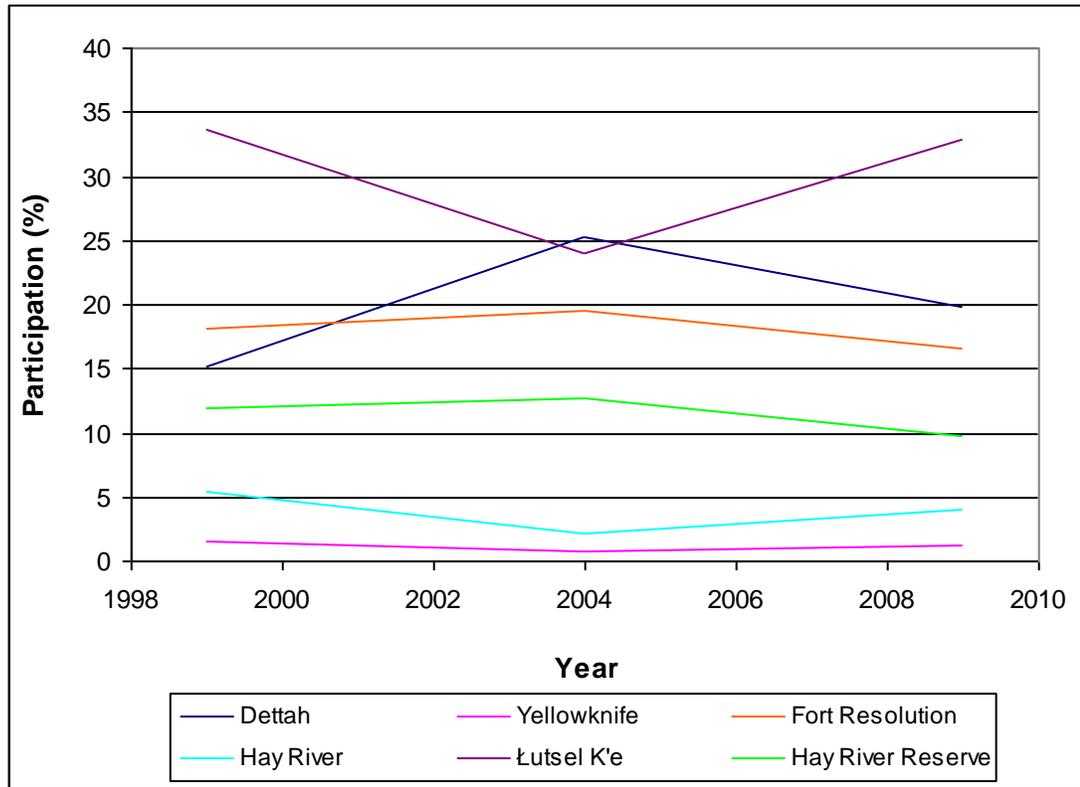
The number of people aged 15 years and over who participate in hunting and fishing activities in the communities located in the region of the proposed Project has been declining since 1999 (Figure 3.6-1) Participation increased in Fort Resolution in 2004 and subsequently declined in 2009. Participation in Hay River and Yellowknife declined in 2004, then increased in 2009 (GNWT Bureau of Statistics 2010i).



Source: GNWT Bureau of Statistics (2010b)

Figure 3.6-1
Participation in Hunting and Fishing Activities, 1999 – 2009

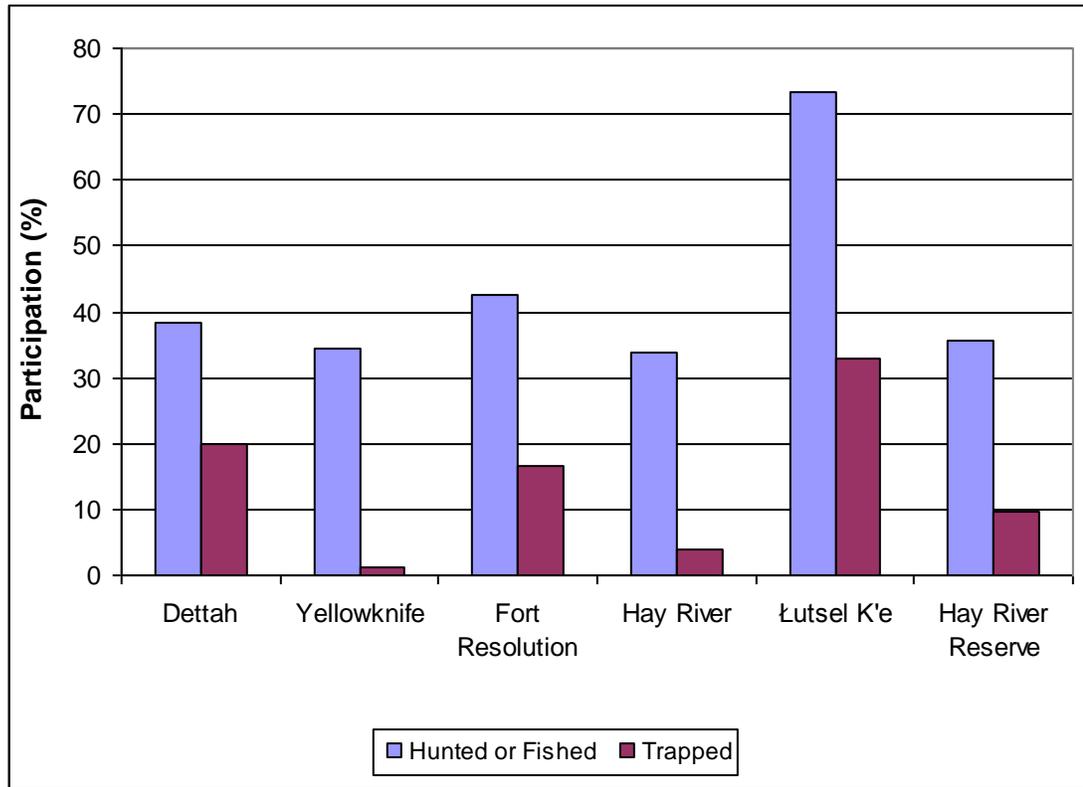
In most of the surrounding communities, with the exception of Dettah, the percentage of persons 15 years and over participating in trapping activities has decreased from 1999 to 2009. Figure 3.6-2 shows the trapping participation rate in Dettah increased from 15.1% in 1999 to 19.8% in 2009 (GNWT Bureau of Statistics 2010b).



Source: GNWT Bureau of Statistics (2010i)

Figure 3.6-2
Participation in Trapping Activities, 1999 – 2009

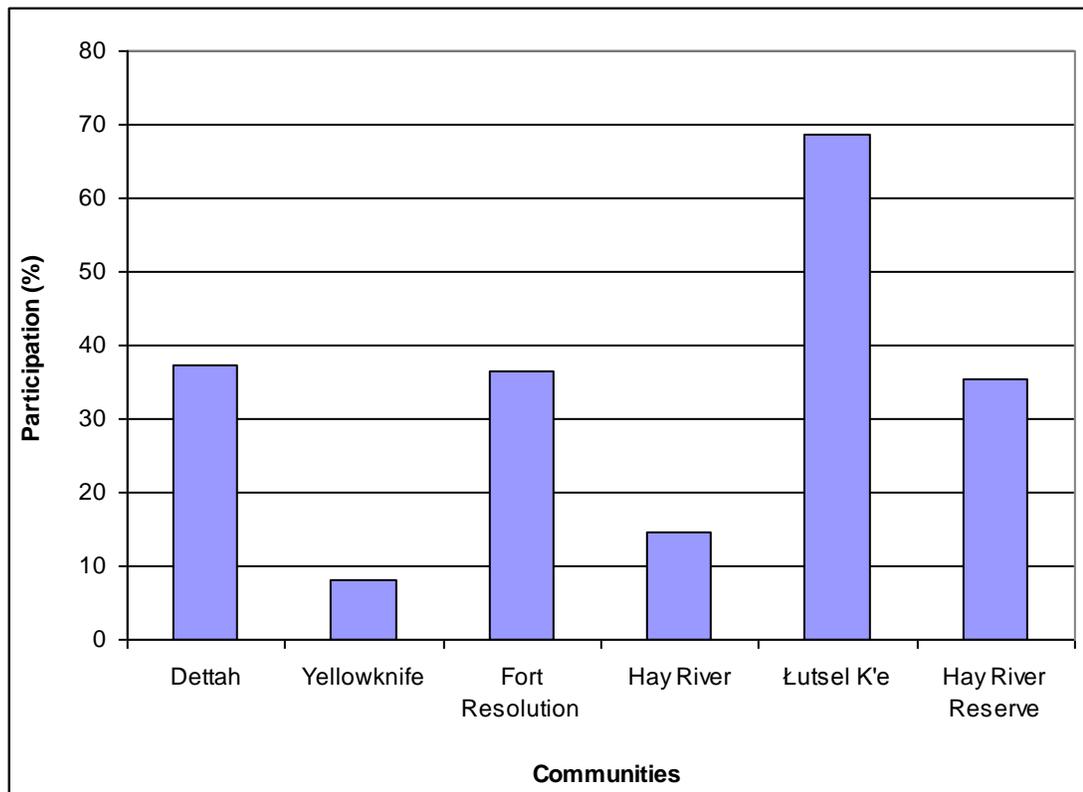
When comparing the percentage of persons 15 years and over who participate in hunting and fishing or trapping, it appears that hunting and fishing are the favoured activities. In all of the communities surrounding the two Project sites, the participation rate for hunting and fishing far exceeded the participation rate for trapping (Figure 3.6-3; GNWT Bureau of Statistics 2010i).



Source: GNWT Bureau of Statistics (2010j)

Figure 3.6-3
Participation in Hunting or Fishing and Trapping Activities, 2008

The percentage of Aboriginal persons who hunted in 2008 was highest in Lutsel K'e at 68.7% (Figure 3.6-4). The community with the lowest percentage of Aboriginal persons who hunted was Yellowknife at 8.1% (GNWT Bureau of Statistics 2010j).



Source: GNWT Bureau of Statistics (2010j)

Figure 3.6-4
Aboriginal Persons Who Hunted or Fished, 2008

3.6.2 Yellowknives Dene First Nation

The percentage of Aboriginal persons who hunted in 2008 was highest in Łutsel K'e at 68.7%. The community with the lowest percentage of Aboriginal persons who hunted was Yellowknife at 8.1% (GNWT Bureau of Statistics 2010i).

3.6.2.1 Wildlife

The Traditional Knowledge Study conducted by EBA (2011a) indicated that harvesting occurred historically and/or currently in the geographic North Slave region (EBA 2011a).

Fifteen of the 17 participants reported that the animals harvested in the Thor Lake site area and/or greater general area include: black bear, barrenland caribou, moose, beaver, fox, lynx, marten, mink, muskrat, otter, rabbits, squirrels, wolf, wolverine, upland game birds and waterfowl (Table 3.6-1).

Three participants noted that many people avoid harvesting in the Thor Lake site area because of the mine. One person in this group said that the area was avoided because the minerals there are dangerous and the water in the site area should not be used (EBA 2011a).

When asked about the former Pine Point Mine site area, two participants reported knowledge of animals harvested in the greater site area including: moose, fox, lynx, martin, mink, otter, wolf and wolverine. One participant noted that they did not hunt or trap in the site area because the area was contaminated from the former Pine Point Mine (EBA 2011a).

TABLE 3.6-1: ANIMALS HARVESTED IN GEOGRAPHIC NORTH SLAVE REGION	
Type	Local Name
Game Mammals	<ul style="list-style-type: none"> • Barrenland Caribou • Black Bear • Buffalo/Bison (introduced species/harvested west of Yellowknife) • Moose • Muskox • Whitetail Deer (harvested at Wool Bay)
Fur-bearing Mammals	<ul style="list-style-type: none"> • Beaver • Coyote • Fox (red, cross, blue and white) • Lynx • Marten • Mink • Muskrat • Otter • Rabbit • Squirrel • Weasel • Wolf • Wolverine
Birds	<ul style="list-style-type: none"> • Upland Game Birds (all types) • Waterfowl (all types)

Source: EBA (2011a)

Fourteen of the 17 participants indicated that harvesting practices have changed during their lifetime. The most frequently mentioned change was a decrease in animal (mammals and birds) populations. Participants also discussed population cycles, animal health/quality, traditional lifestyle and harvesting methods, economics and environmental changes. A summary of participants' observations organized by theme in order of frequency is included in Table 3.6-2.

TABLE 3.6-2: ANIMAL HARVESTING CHANGES OVER TIME	
Theme	Participant Observations
Animal Populations and Cycles	<ul style="list-style-type: none"> • There are hardly any animals as compared to the historical past. There used to be plenty of furs out there; • There are fewer birds than in the historical past. Magpies are killing the smaller birds; • There are fewer black bear than in the historical past; • There are fewer caribou than in the historical past; • There are fewer lynx than in the historical past; • There are fewer moose than in the historical past; • There are fewer muskrats than in the historical past; • There are fewer rabbits than in the historical past; • There are more beavers than in the historical past. The beaver dams are blocking waterways and causing the low water levels in Great Slave Lake; • There are more wolves now than in the historical past. They are not being hunted enough and are hurting the moose population; • Caribou don't migrate south anymore because of the burnt areas in the North Slave region; • Bald eagles are not returning to Tigoti/Campbell Lake; and • Deer have been harvested in the geographic North Slave region. They were not in the region in the historical past.
Animal Health/Quality	<ul style="list-style-type: none"> • The quality of caribou has changed. The caribou calf hides used to be really strong. Now they are thinner, have sores and the hair falls off the hide; • The animal quality has changed. One fox had thin hair on its belly. One wolf had a sore on it (was donated to DENR); and • Caribou meat is not fat like it used to be in the historical past.
Traditional Lifestyle and Harvesting Methods	<ul style="list-style-type: none"> • Government conservation has restricted caribou hunting; • People don't hunt as much as compared to the historical past; • People don't use caribou clothes as compared to the historical past; • People historically shared food. People sell meat now; and • Leg hold traps were historically used to trap. The new Connie Bear traps are harder to set and are dangerous for trappers.
Economics	<ul style="list-style-type: none"> • Fewer people trap as compared to the historical past because the fur price is too low for the amount of work required.
Environmental Changes	<ul style="list-style-type: none"> • The mines are scaring the moose away from the area.

Source: EBA (2011a)

Note: Themes are listed in order of frequency from most frequent theme to least frequent theme

3.6.2.2 Fish

Fish are traditionally harvested throughout the geographic North Slave region. All of the seventeen interviewed participants indicated that they either historically or currently harvest fish in the region (EBA 2011a). An alphabetized list of the fish harvested in the geographic North Slave region is included in Table 3.6-3.

TABLE 3.6-3: FISH HARVESTED IN GEOGRAPHIC NORTH SLAVE REGION	
Local Name	
<ul style="list-style-type: none"> • Burbot/Ling Cod/Loche/Mariah • Catfish • Cisco/Tullibee • Grayling/Bluefish • Inconnu • Jackfish/Pike 	<ul style="list-style-type: none"> • Lake Trout • Lake Whitefish (~10 species) • Pickerel/Walleye • Smelt • Suckers

Source: EBA (2011a)

Participants of the Traditional Knowledge Study were also asked about their knowledge of fish harvested in Thor Lake, Big Buffalo River and Great Slave Lake near the Pine Point Mine site area. When asked about Thor Lake, eight participants reported knowledge of fish harvested in Thor Lake. Three of these participants did not report specific knowledge. The other five participants reported fish including: grayling, jackfish/pike, lake trout, lake whitefish, and pickerel, see Table 3.6-4.

Participants were also asked about their knowledge of fish harvested from Big Buffalo River, located south of Great Slave Lake and west of the former Pine Point Mine site. One participant identified catfish, grayling, jackfish/pike, lake trout, lake whitefish, pike and suckers as being harvested from the river (EBA 2011a). It should be noted, however, that grayling, lake trout and pickerel/walleye were not captured in Thor Lake during the Stantec baseline studies.

The southern Great Slave Lake near the Pine Point Mine site area was also discussed. Participants reported that catfish, grayling, inconnu, jackfish, lake trout, lake whitefish, pickerel and suckers are harvested from the Great Slave Lake's southern region (EBA 2011a).

TABLE 3.6-4: FISH IDENTIFIED IN SITE AREA WATERBODIES	
Waterbody	Identified Fish
Thor Lake	<ul style="list-style-type: none"> • Jackfish/Pike • Lake Whitefish
Big Buffalo River	<ul style="list-style-type: none"> • Catfish • Grayling • Jackfish/Pike

TABLE 3.6-4: FISH IDENTIFIED IN SITE AREA WATERBODIES	
Waterbody	Identified Fish
	<ul style="list-style-type: none"> • Lake Trout • Lake Whitefish • Suckers
Great Slave Lake (near former Pine Point Mine site)	<ul style="list-style-type: none"> • Catfish • Grayling • Inconnu • Jackfish/Pike • Lake Trout • Lake Whitefish • Pickerel/Walleye • Suckers

Source: EBA (2011a)

Participants were asked if fish harvesting has changed during their lifetime. Thirteen of the 17 participants cited specific changes. Participants' most frequent observations were related to changes in fish health/quality over time. Participants also discussed changes related to fish populations, YKDFN traditional lifestyle and harvesting methods, and industry. A summary of participant observations by theme in order of frequency is listed in Table 3.6-5.

TABLE 3.6-5: FISH HARVESTING CHANGES OVER TIME	
Theme	Participant Observations
Fish Health/Quality	<ul style="list-style-type: none"> • When the Giant Mine and Con Mine put tailings into the lakes the fish were affected. They became soft. The fish closest to the mine were softer. Once mining shut down, the fish started getting healthy; • The fish texture has changed within a certain radius around Yellowknife. The fish were historically hard and now they are soft because of pollution from the Giant Mine; • People don't set nets around Yellowknife because the fish are soft; • The fish were bigger in the historical past. The water quality has changed. It is not good; • Some fish are soft and the head is smaller than usual; • The fish guts are dark in colour. They are not healthy; • Have noticed that white fish have spots on their nose in the fall; • Have noticed little white spots on the skin of fish when cutting them up; and • The fish at Blackfoot Lake (also called Cressy Lake) were historically very good. Noticed the last time nets were set there that the fish were very soft and told people not to eat fish from there.
Fish Populations	<ul style="list-style-type: none"> • There are hardly any fish as compared to the historical past because the water is getting low. • The lake trout are getting fished-out from the inland lakes (including

TABLE 3.6-5: FISH HARVESTING CHANGES OVER TIME	
Theme	Participant Observations
	Blatchford Lake); <ul style="list-style-type: none"> • There were many lake trout and inconnu around Yellowknife Bay before the fish camps. The fishery closed in the 1980s and now lake trout and inconnu are coming back and being caught outside of Dettah; and • Since the Giant Mine and commercial fishing shut down, lake trout are coming back to the north shore.
Traditional Lifestyle and Harvesting Methods	<ul style="list-style-type: none"> • Fewer people harvest fish now than in the historical past; • More people have jobs in the wage economy than are on the land. People who work at the mines set nets less than part-time; and • Barbless hooks are used now.
Industry	<ul style="list-style-type: none"> • Four companies had commercial fisheries in the 1950s; • There used to be fish camps at Ptarmigan Point and Wolf Bay in the 1950s and 1960s. The fishery closed in the 1980s; • Hay River has the only fish plant that's open now.

Source: EBA (2011a)

Note: Themes are listed in order of frequency from most frequent theme to least frequent theme

3.6.2.3 Plants

Trees and berries located in the proposed Project areas were identified by Traditional Knowledge Study participants. The Thor Lake and former Pine Point Mine site areas were generally described as containing many of the same types of trees and berries. Two participants noted that the trees located in the former Pine Point Mine site area were “big” as compared to those located in the Thor Lake site area. The trees and berries identified by participants are listed alphabetically by their local names in Table 3.6-6.

TABLE 3.6-6: IDENTIFIED TREES AND BERRIES IN PROPOSED PROJECT AREAS	
Trees	
Thor Lake Site Area	<ul style="list-style-type: none"> • Birch • Jack Pine • Pine • Poplar • Spruce (white, black, and greenwood) • Tamarack • Willows (many types)
Former Pine Point Mine Site Area	<ul style="list-style-type: none"> • Birch • Jack pine • Pine • Spruce • Willows (many types)

TABLE 3.6-6: IDENTIFIED TREES AND BERRIES IN PROPOSED PROJECT AREAS	
Berries	
Thor Lake Site Area	<ul style="list-style-type: none"> • Bearberries (along shore) • Blackberries (different than the Blackberries down south) • Blueberries (along shore) • Cloudberries (along shore and in muskeg areas) • Cranberries (along shore) • Gooseberries/Thornberries • Mooseberries (along shore) • Raspberries (in creeks) • Saskatoons • Strawberries
Former Pine Point Mine Site Area	<ul style="list-style-type: none"> • Blueberries • Cloudberries/Knuckleberries • Cranberries • Gooseberries • Raspberries • Saskatoons

Source: EBA (2011a)

Participants were also asked if they knew of any plants that are poisonous or harmful to animals and/or humans in the geographic North Slave region. Three participants indicated that some plants, flowers, roots and mushrooms located in the region are harmful to humans. One of these participants specifically identified a plant named “sasquatch berry” that was described as having an orange berry with a black dot, white center and black pit. This individual indicated that the plant could be eaten by animals, but should not be eaten by humans. The names of the other flowers, roots and mushrooms were not specified (EBA 2011a).

3.6.3 Deninu Ku’e First Nation and Fort Resolution Metis Council

The community of Fort Resolution is located on the south shore of Great Slave Lake in the South Slave region. The Deninu Ku’e and Fort Resolution Metis have used the geographic South Slave region, since time immemorial (EBA 2011b).

3.6.3.1 Wildlife

The Traditional Knowledge Study conducted by EBA (2011b) identified that harvesting occurred historically and/or is occurring in the geographic South Slave region. While specific harvesting practices varied, participants generally indicated that fur-bearing animals are typically harvested from late fall through spring, game animals are harvested year-round when they are available, waterfowl are typically harvested from spring till late fall, and game birds are normally harvested year-round when they are available (EBA 2011b).

Eighteen of the 19 participants reported that animals are harvested in the former Pine Point Mine site area and/or greater general area, including: black bear, buffalo, cougar, moose, woodland caribou, beaver, coyote, fisher, fox (many types), hare, lynx, marten, mink, muskrat, otter, skunk, squirrels, weasel, whitetail deer, wolf, wolverine, upland game birds and waterfowl (Table 3.6-7).

TABLE 3.6-7: ANIMALS HARVESTED IN GEOGRAPHIC SOUTH SLAVE REGION	
Type	Local Name
Game Mammals	<ul style="list-style-type: none"> • Black Bear • Cougar (new the area) • Moose • Muskox (moving south as far as east side of Taltson River) • Whitetail Deer (new to the area) • Wood Buffalo • Woodland Caribou*
Fur-bearing Mammals	<ul style="list-style-type: none"> • Beaver • Coyote • Fisher • Fox (many types) • Lynx • Marten • Mink • Muskrat • Otter • Squirrel • Weasel • Wolf • Wolverine
Birds	<ul style="list-style-type: none"> • Upland Game Birds (all types) • Waterfowl (all types)

Source: EBA (2011b)

When asked about the Thor Lake site area, thirteen participants reported knowledge of animals harvested in the site area and/or greater general area including: barrenland caribou, black bear, moose, beaver, coyote, fisher, fox (arctic and other types), hare, lynx, marten, mink, muskrat, otter, skunk, squirrel, weasel, wolf, wolverine, upland game birds (all types) and waterfowl (all types). Another participant observed that there were historically very few marten and beaver on the north side of Great Slave Lake and that now the populations seem to be mixed (EBA 2011b).

All but three participants indicated that harvesting practices have changed during their lifetime. The most frequently mentioned change was a decrease in animal (mammals and birds) populations. Participants also discussed population cycles, traditional lifestyle and

harvesting methods, economics and environmental changes. A summary of participants' observations organized by theme in order of frequency is included in Table 3.6-8.

TABLE 3.6-8: ANIMAL HARVESTING CHANGES OVER TIME	
Theme	Participant Observations
Animal Populations and Cycles	<ul style="list-style-type: none"> • There seem to be fewer animals now than in the historical past; • The caribou population is smaller than in the historical past; • There are fewer moose now than there were about five years ago. All of the animals move around. The moose will be back; • There are fewer fur-bearing animals than in the historical past; • There are fewer ducks than in the historical past. There were hardly any ducks this year (2010); • Did not hear any birds or frogs this spring (2010); • There are more whitetail deer and porcupines than in the historical past; • There are more cranes now than in the historical past; • Some animals seem to move around; • Marten and lynx trapping is cyclical (applies to all trapping populations); • Bird populations cycle; • The marten have gone north; • Muskrats have not been around for a long time. Up to 800 muskrats were historically trapped each year. The last big trap in Taltson River was in 1975; • There were historically many geese in Rocher River and the larger Pine Point area. Now they have moved to Fort Providence; • The geese and duck migration routes have changed. During the last 10 years, the larger flocks of ducks and geese are detouring along the Mackenzie River. Smaller flocks still come through; • Grizzlies are starting to come south as far as Yellowknife and the Mackenzie Highway; • Muskox are moving as far south as the east side of Taltson River; and • There are cougar and whitetail deer now. Historically they were not in the area.
Traditional Lifestyle and Harvesting Methods	<ul style="list-style-type: none"> • More people trapped/harvested historically; and • Fewer people use the land now than in the historical past.
Economics	<ul style="list-style-type: none"> • Trapping is a dying thing because people cannot financially depend only on trapping; • Trapping was historically subsidized. Trapping is still subsidized, but the incentive has not increased with the cost of living; • Fur prices have gone down significantly; • People depend on social programs more than they depend on

TABLE 3.6-8: ANIMAL HARVESTING CHANGES OVER TIME	
Theme	Participant Observations
	animals as compared to the historical past; and <ul style="list-style-type: none"> • Many children are trapping now. There is a lot of government trapping assistance for them;
Environmental Changes	<ul style="list-style-type: none"> • Wildlife was bountiful before the Pine Point Mine. Now it is not; • The Delta was rich with muskrats before the Bennett Dam was built; and • The water from the Pine Point Mine affected trapping during the “Pine Point Mine years.” Now trapping is starting to recover.

Source: EBA (2011b)

Note: Themes are listed in order of frequency from most frequent theme to least frequent theme.

3.6.3.2 Fish

Fish are traditionally harvested throughout the geographic South Slave region. All of the interviewed participants indicated that they either historically or currently harvest fish in the region. An alphabetized list of the fish harvested in the geographic South Slave region is included in Table 3.6-9.

TABLE 3.6-9: FISH HARVESTED IN GEOGRAPHIC SOUTH SLAVE REGION	
Local Name	
<ul style="list-style-type: none"> • Burbot/Ling Cod/Loche/Mariah • Chub • Chum/Dog Face Salmon • Cisco/Tullibee (used to feed dogs) • Goldeye • Grayling/Bluefish (in the Providence area) • Inconnu • Jackfish/Pike 	<ul style="list-style-type: none"> • Jumbo Whitefish • Lake Trout • Lake Whitefish • Pickerel/Walleye • Rainbow Trout (very rarely migrate into the water system) • Suckers (longnose, red, and silver)

Source: EBA (2011b)

Participants of the Traditional Knowledge Study were also asked about their knowledge of fish harvested in Big Buffalo River, Great Slave Lake near the Pine Point Mine site area and Thor Lake. When asked about Big Buffalo River, all of the participants reported that fish are harvested in Big Buffalo River including: burbot/ling cod/loche/mariah, cisco/tullibee, goldeye, grayling, inconnu, jackfish/pike, lake trout, lake whitefish, pickerel/walleye and suckers (Table 3.6-10). One participant noted that all of the fish harvested from Great Slave Lake are found at the mouth of Big Buffalo River.

Participants were also asked about their knowledge of fish harvested from Great Slave Lake near the Pine Point Mine site area. Participants identified burbot/ling cod/loche/mariah, chubs, chum/dog face salmon, cisco/tullibee, goldeye, grayling, inconnu, jackfish/pike, jumbo whitefish, lake trout, lake whitefish, pickerel/walleye, rainbow trout (very rarely

migrate into the water system) and suckers (longnose, red, and silver) as being harvested from the Big Buffalo River (Table 3.6-10).

Thor Lake was also discussed. Five participants reported knowledge of fish harvested from Thor Lake. One of these participants indicated that “there should be lake whitefish, jack fish and probably lake trout” in Thor Lake. One participant reported that lake trout and lake whitefish are present in “that area,” and one participant identified fish including: grayling, jackfish, lake whitefish and suckers as being harvested from Thor Lake. The other two participants in this group did not report specific knowledge. The fish reported by participants are listed in Table 3.6-10. It should be noted, however, that grayling, lake trout and pickerel/walleye were not captured in Thor Lake during the Stantec baseline studies.

TABLE 3.6-10: FISH IDENTIFIED IN SITE AREA WATERBODIES	
Waterbody	Identified Fish
Big Buffalo River	<ul style="list-style-type: none"> • Burbot/Ling Cod/Loche/Mariah • Cisco/Tullibee • Goldeye • Grayling • Inconnu • Jackfish/Pike • Lake Trout • Lake Whitefish • Pickerel/Walleye • Suckers
Great Slave Lake (near former Pine Point Mine site)	<ul style="list-style-type: none"> • Burbot/Ling Cod/Loche/Mariah • Chubs • Chum/Dog Face Salmon • Cisco/Tullibee • Goldeye • Grayling • Inconnu • Jackfish/Pike • Jumbo Whitefish • Lake Trout • Lake Whitefish • Pickerel/Walleye • Rainbow Trout (very rarely migrate into the water system) • Suckers (longnose, red, and silver)
Thor Lake	<ul style="list-style-type: none"> • Jackfish/Pike • Lake Whitefish • Suckers

Source: EBA (2011b)

Participants were asked if fish harvesting has changed during their lifetime. Fourteen of the 19 participants cited specific changes. Participants' most frequent observations were related to changes (both decreases and recent increases) in fish populations. Participants also discussed changes related to fish cycles, fish health/quality, DKFN and FRMC traditional lifestyle and harvesting methods, industry and environmental changes. A summary of participant observations by theme in order of frequency is listed in Table 3.6-11.

TABLE 3.6-11: FISH HARVESTING CHANGES OVER TIME	
Theme	Participant Observations
Fish Populations and Cycles	<ul style="list-style-type: none"> • There are fewer fish than in the historical past; • There are fewer inconnu runs than in the historical past; • Did not historically catch lake trout in geographic South Slave region (~40 years ago). Started catching lake trout ~4-5 years ago; • There were more lake trout before the Pine Point Mine. The lake trout are starting to come back now; • The fish seem to run earlier than in the historical past; • Lake whitefish run a little bit later than in the historical past; • The fish runs used to be separate (especially lake white fish and inconnu). Now the runs are all mixed together; and • The 2010 fish harvest was very good.
Fish Health/Quality	<ul style="list-style-type: none"> • The fish were very firm historically. The fish are soft now some years; • The fish started having worms ~1967-1968; • The fish have worms (likely due to climate change); • The fish from Great Slave Lake taste different than in the historical past; and • Some fish are mushy and have sores.
Traditional Lifestyle and Harvesting Methods	<ul style="list-style-type: none"> • Many more people fished historically; • People used to set hooks on the lake (~50 years ago). Now they do not. People don't want to punch the ice anymore; • People used to fish to feed dogs. People don't use dogs like they used to; and • People dry fish but they do not depend on fish like they used to.
Industry	<ul style="list-style-type: none"> • There was a lot of commercial fishing historically. Now there is not.
Environmental Changes	<ul style="list-style-type: none"> • The water has changed (i.e. water level and dam activity).

Source: EBA (2011b)

Note: Themes are listed in order of frequency from most frequent theme to least frequent theme.

3.6.3.3 Plants

Trees and berries located in the proposed Project areas were identified by Traditional Knowledge Study participants. The former Pine Point Mine and Thor Lake site areas were generally described as containing many of the same types of trees and berries (EBA 2011b).

When asked about the former Pine Point Mine site area, one participant reported that there are no trees or berries in the proposed Project footprint at the former Pine Point Mine site area. This person noted that some trees have started to grow back in the perimeter area but that berries have not grown back. Another person reported that cranberries are located between the former Pine Point Mine and Great Slave Lake. This participant noted that berries have not grown the same since a satellite crashed in the larger area in 1978. Another person noted changes in berry growth. This person reported that there are fewer berries now than in the historical past (EBA 2011b).

When asked about the Thor Lake site area, five participants reported that the trees in the Thor Lake site area are “short” or smaller than the trees in the former Pine Point Mine area. One of these participant reported that the trees are shorter because the terrain is rocky at the proposed site area. The trees and berries identified by participants are listed alphabetically by their local names in Table 3.6-12.

TABLE 3.6-12: IDENTIFIED TREES AND BERRIES IN PROPOSED PROJECT AREAS	
Trees	
Former Pine Point Mine Site Area	<ul style="list-style-type: none"> • Alder • Aspen • Birch • Jack pine • Pine (black) • Poplar (balsam, black, and white) • Spruce (black and white) • Tamarack/Larch • Willows (many types – diamond willows used to smoke moose hides)
Thor Lake Site Area	<ul style="list-style-type: none"> • Alder • Birch • Jack pine • Pine (black) • Poplar (black and white) • Spruce (black and white) • Tamarack/Larch • Willows (many types)
Berries	
Former Pine Point Mine Site Area	<ul style="list-style-type: none"> • Bearberries • Blueberries • Chokecherries

TABLE 3.6-12: IDENTIFIED TREES AND BERRIES IN PROPOSED PROJECT AREAS	
	<ul style="list-style-type: none"> • Cloudberrries • Cranberries • Currants (black and red) • Gooseberries • Juniper Berries/Crowberries/Crow Buds • Loganberries • Mooseberries/High Bush Cranberries • Raspberries • Saskatoons • Strawberries
Thor Lake Site Area	<ul style="list-style-type: none"> • Bearberries • Blueberries • Cranberries • Crowberries • Currants (black) • Gooseberries • Loganberries • Mooseberries • Raspberries • Rose Hips/Rose Buds • Saskatoons • Strawberries

Source: EBA (2011b)

Participants were also asked if they knew of any plants that are poisonous or harmful to animals and/or humans in the geographic South Slave region. Nine participants indicated that some plants, berries, flowers, roots and mushrooms located in the region are harmful to humans. Specifically identified plants included: a red mushroom with white spots (specific name not given), baneberries/bearberries (poisonous if eaten), rat root (one type is harmful, specific name not given), rose hips (cause “itchy arse” if too many are eaten), and a large pink water flower (poisonous if eaten raw, specific name not given). The names of the other flowers, roots and mushrooms mentioned were not specified (EBA 2011b).

3.6.4 Lutsel K’e Dene First Nation

Lutsel K’e is a small community located approximately 200 km east of Yellowknife on the East Arm of Great Slave Lake. The Lutsel K’e Dene First Nation (LKDFN) has used the East Arm area of Great Slave Lake, including the Thor Lake Project’s proposed Project sites, since time immemorial (EBA 2011c).

3.6.4.1 Wildlife

The Traditional Knowledge study conducted by EBA (2011c) indicated that harvesting occurred historically and/or currently in the East Arm area of Great Slave Lake. While specific harvesting practices varied, participants indicated that fur-bearing animals are

typically harvested from late fall through spring, game animals are harvested year-round when they are available, waterfowl are typically harvested in the spring and fall, and game birds are normally harvested year-round (EBA 2011c).

Eleven of the 13 participants reported that animals are harvested in the Thor Lake site area and/or greater general area. Participants discussed the Thor Lake site area as being part of the greater geographic area that is used for hunting and trapping. The animals identified as being harvested at the Thor Lake site and/or greater general area include barrenland caribou, black bear, moose, beaver, fox, lynx, marten, mink, muskrat, otter, rabbits, squirrels, weasel, wolf and wolverine (Table 3.6-13).

When asked about the former Pine Point Mine site area, six participants reported knowledge of animals harvested in the greater site area. The animals identified as being harvested in the former Pine Point Mine site and/or greater general area include: black bear, moose, wood buffalo/bison, woodland caribou, beaver, fox (white, red and cross), lynx, marten, mink, muskrat, porcupine, squirrel, weasel, wolf, wolverine, upland game birds (including ptarmigan, spruce and grouse) and waterfowl (including ducks and geese) (EBA 2011c).

TABLE 3.6-13: ANIMALS HARVESTED IN EAST ARM AREA OF GREAT SLAVE LAKE	
Type	Local Name
Game Mammals	<ul style="list-style-type: none"> • Barrenland Caribou • Black Bear • Grizzly Bear (harvested in the Barrenlands) • Moose • Muskox (harvested in the Barrenlands and at Rocher River) • Whitetail Deer (new to the area) • Wood Buffalo/Bison
Fur-bearing Mammals	<ul style="list-style-type: none"> • Beaver • Fox (red, cross, and white) • Lynx • Marten • Mink • Muskrat • Otter • Porcupine • Rabbit • Squirrel • Weasel • Wolf • Wolverine
Birds	<ul style="list-style-type: none"> • Upland Game Birds (all types) • Waterfowl (all types)

Source: EBA (2011c)

All but one participant indicated that harvesting practices have changed during their lifetimes. The most frequently mentioned change was a decrease in animal (mammals and birds) populations. Participants also discussed harvesting population cycles, traditional lifestyle and harvesting methods, economics and environmental changes. A summary of participants' observations organized by theme in order of frequency is included in Table 3.6-14.

TABLE 3.6-14: ANIMAL HARVESTING CHANGES OVER TIME	
Theme	Participant Observations
Animal Populations and Cycles	<ul style="list-style-type: none"> • There seem to be fewer and fewer caribou; • There used to be many, many caribou “like the ground was moving.” That is never seen now; • Wolves, grizzly, wolverines and people are killing the caribou; • There are fewer fur-bearing animals and big game now than in the historical past; • There are fewer ducks and geese than in the historical past; • Some animal populations, like rabbits, cycle. Some years there are many and sometimes there are none; • Fires have burned the area and many animals have moved out; • Caribou have moved farther away; • Muskox are migrating further south than in the historical past; • Whitetail deer are moving into the area; and • Caribou migration has changed. Caribou no longer swim across the lake to migrate. The caribou may use a different route now.
Traditional Lifestyle and Harvesting Methods	<ul style="list-style-type: none"> • Fewer people harvest than in the historical past; • One reason people do not trap as much is because the new Connie Bear Traps are harder to set; • The traditional lifestyle has changed. People would leave from Lutsel K’e by boat to Reliance to harvest caribou and dry it. Women and children would be at Pike’s Porch near Reliance. Men would hunt for 3-4 days, come back, rest, and then go hunting again. People would come back to Lutsel K’e and share the meat and tell stories about the hunt; • People historically trapped from Yellowknife and Fort Resolution all the way up the East Arm for white fox. Now people do not trap as much; • The younger generation is not interested in traditional activities as compared to the historical past; and • Skidoos are now used to hunt instead of sled dogs.
Economics	<ul style="list-style-type: none"> • Fewer people trap because fur is not worth anything anymore.
Environmental Changes	<ul style="list-style-type: none"> • The water level in Great Slave Lake dropped in 1972. The level rose again afterwards but is now lower again; and • Industry has affected the caribou. The caribou travel over crushed rock and boulders left from industry. It breaks their legs

TABLE 3.6-14: ANIMAL HARVESTING CHANGES OVER TIME	
Theme	Participant Observations
	because it is not natural.

Source: EBA (2011c)

Note: Themes are listed in order of frequency from most frequent theme to least frequent theme.

3.6.4.2 Fish

Fish are traditionally harvested throughout the East Arm area of Great Slave Lake. All of the interviewed participants indicated that they either historically or currently harvest fish in the region. An alphabetized list of the fish harvested in the East Arm of Great Slave Lake is included in Table 3.6-15.

TABLE 3.6-15: FISH HARVESTED IN EAST ARM AREA OF GREAT SLAVE LAKE	
Local Name	
<ul style="list-style-type: none"> • Burbot/Loche/Mariah • Cisco/Tullibee • Goldeye • Grayling • Herring • Inconnu • Jackfish/Pike 	<ul style="list-style-type: none"> • Jumbo Whitefish • Lake Trout • Lake Whitefish • Pickerel/Walleye • Rocky Mountain Whitefish • Salmon (once in the while) • Suckers (red and silver)

Source: EBA (2011c)

Participants of the Traditional Knowledge Study were also asked about their knowledge of fish harvested in Thor Lake, Big Buffalo River and Great Slave Lake near the Pine Point Mine site area. When asked about Thor Lake, most participants indicated that they did not have first-hand knowledge of fish in Thor Lake. Three participants reported that fish are present in Thor Lake including: jackfish, lake trout and lake whitefish (Table 3.6-16). Within this group one participant indicated that although fish are present, they are not harvested from Thor Lake. Another participant in this group reported that fish are present but that they did not know of anyone harvesting fish from Thor Lake anymore (EBA 2011c).

Participants were also asked about their knowledge of fish harvested from Big Buffalo River, located south of Great Slave Lake and west of the former Pine Point Mine site. Participants identified inconnu, jackfish, lake whitefish, mariah, and suckers as being harvested from the river (Table 3.6-16). One participant reported that lake whitefish use the Big Buffalo River as a spawning ground (EBA 2011c).

Great Slave Lake near the former Pine Point Mine site area was also discussed. One participant noted that Great Slave Lake's southern region was historically fished commercially. This participant added that when it was commercially fished that mostly lake whitefish and inconnu were harvested. Another participant reported that there were historically many lake trout in Great Slave Lake's southern region. This individual added

that now there are few to none. The fish identified by participants as being harvested in Great Slave Lake near the former Pine Point Mine site area are listed in Table 3.6-16.

TABLE 3.6-16: FISH IDENTIFIED IN SITE AREA WATERBODIES	
Waterbody	Identified Fish
Thor Lake	<ul style="list-style-type: none"> • Jackfish/Pike • Lake Whitefish
Big Buffalo River	<ul style="list-style-type: none"> • Burbot/Loche/Mariah • Inconnu • Jackfish/Pike • Lake Whitefish (spawn in Big Buffalo River) • Pickerel/Walleye • Suckers
Great Slave Lake (near former Pine Point Mine site)	<ul style="list-style-type: none"> • Burbot/Loche/Mariah • Cisco/Tullibee • Grayling • Jackfish/Pike • Jumbo Whitefish • Lake Trout • Lake Whitefish • Pickerel/Walleye • Suckers (red and silver)

Source: EBA (2011c)

Participants were asked if fish harvesting has changed during their lifetimes. Nine of the 13 participants cited specific changes. Similar to animal harvesting, participants' most frequent observations were regarding changes in fish populations over time. Participants reported both decreases and increases in fish populations during their lifetimes. One participant noted that the summer of 2010 was the best summer for fishing in 30 years. This individual reported that the lake was calm almost all summer, and that as a result, nature was more bountiful in general. Participants also identified changes related to fish population cycles, fish health/quality and LKDFN traditional lifestyle. A summary of participant observations by theme in order of frequency is listed in Table 3.6-17.

TABLE 3.6-17: FISH HARVESTING CHANGES OVER TIME	
Theme	Participant Observations
Fish Populations	<ul style="list-style-type: none"> • There are fewer fish than in the historical past; • Lake Trout are disappearing; • 2010 was the best fishing summer in 30 years. The lake was calm almost all summer so nature was more bountiful in general; • There are just as many or more fish than in the historical past; • There are more fish now in the East Arm than in the historical

TABLE 3.6-17: FISH HARVESTING CHANGES OVER TIME	
Theme	Participant Observations
	<p>past because there has not been commercial fishing in the East Arm area for a long time;</p> <ul style="list-style-type: none"> • The fish populations seem to move. One day the nets are full and the next day they are empty; and • Lake Trout are now found near Fort Resolution and Old Fort Rae. They were not there in the historical past.
Fish Health/Quality	<ul style="list-style-type: none"> • Many fish have sores on them; and • The fish are getting skinnier.
Traditional Lifestyle	<ul style="list-style-type: none"> • Fewer people harvest fish as compared to the historical past; and • The younger generation is not as motivated to fish as compared to the historical past.

Source: EBA (2011c)

Note: Themes are listed in order of frequency from most frequent theme to least frequent theme.

3.6.4.3 Plants

Trees and berries located in the proposed Project areas were identified by Traditional Knowledge Study participants. The Thor Lake and former Pine Point Mine site areas were generally described as containing many of the same types of trees and berries. Five participants noted that the trees located in the former Pine Point Mine site area were typically taller and bigger than those located in the Thor Lake site area. One of these participants indicated that the trees in the Thor Lake site area were smaller because the terrain is rockier than in the former Pine Point Mine site area. The trees and berries identified by participants are listed alphabetically by their local names in Table 3.6-18.

Participants were also asked if they knew of any plants that are poisonous or harmful to animals and/or humans in the East Arm area of Great Slave Lake. No poisonous plants were identified. One participant noted that the animals instinctively know what to eat and what not to eat. Another participant indicated that although cloudberry are not poisonous, that they knew of some people in the barrenlands who ate too many of them and became sick (EBA 2011c).

TABLE 3.6-18: IDENTIFIED TREES AND BERRIES IN PROPOSED PROJECT AREAS	
Trees	
Thor Lake Site Area	<ul style="list-style-type: none"> • Birch • Jack Pine • Pine (many types) • Poplar • Spruce (black, greenwood, silver, and white) • Tamarack • Willows (many types)
Former Pine Point Mine Site Area	<ul style="list-style-type: none"> • Birch

TABLE 3.6-18: IDENTIFIED TREES AND BERRIES IN PROPOSED PROJECT AREAS	
	<ul style="list-style-type: none"> • Jack pine • Poplar • Spruce • Willows (many types)
Berries	
Thor Lake Site Area	<ul style="list-style-type: none"> • Blackberries • Blueberries • Cloudberries/Knuckleberries • Cranberries • Gooseberries • Mooseberries • Raspberries • Strawberries/Little Hearts
Former Pine Point Mine Site Area	<ul style="list-style-type: none"> • Bearberries • Blueberries • Cloudberries/Knuckleberries • Cranberries • Gooseberries • Mooseberries • Raspberries • Saskatoons • Strawberries/Little Hearts

Source: EBA (2011c)

3.7 HERITAGE RESOURCES

3.7.1 Human History in the Region

Three different groups of Northeastern Athapaskan speakers historically utilized the Great Slave Lake. Early explorers and ethnographers identified these groups as the Chipewyan, the Dogrib Indians, and the Yellowknives Indians. These groups were all nomadic hunter-gatherers and occupied the forest-tundra to different degrees, mostly hunting barrenground caribou.

The Yellow-knives and the Dogrib people typically occupied the land to the north and northwest of Great Slave Lake. The Chipewyan typically occupied the land to the southeast. All three groups lived a nomadic lifestyle following their food source, barrenground caribou (Akaitcho Treaty 8 ND).

Archaeological Background of the Region

In 1949, MacNeish carried out pioneering surveys in the Great Slave Lake area and established the initial prehistoric sequences in the Mackenzie region (Cinq-Mars and Martijn 1981:32). His work was continued by Noble, who surveyed the Great Slave Lake area, especially to the north and east, over four summers from 1966 to 1969. In August 1968,

Noble (1971:103) canoed west along the north shore “to the upper end of the Hearne Channel,” where he recorded the McKinley Point site (Kab-1), 10.5km east of Thor Lake. It is not known if he examined the proposed dock area of the Thor Lake Project.

The McKinley Point site, the closest recorded site to Thor Lake, is on a narrow isthmus and consists of the remains of two hearths as well as a projectile point base and scraper. The site was assigned to the Waldron River Complex and dated to A.D. 500 to 900 (Noble 1971; Archaeological Survey of Canada: Archaeological Site Form, KaPb-1).

Noble (1971, 1981) had outlined the general cultural history of central Mackenzie region on the basis of his work, as well as that carried out by other archaeologists. The central Mackenzie was occupied by northern Paleo-Indians shortly after deglaciation 7000 years ago. Several complexes from the Northern Plains appeared between 3000 B.C. and A.D. 200 although they are poorly represented. Between 1300 to 600 B.C., the Canadian Tundra Tradition, derived from Arctic Paleo-Eskimos, reached as far south as northern Saskatchewan and Manitoba.

Finally, about 500 B.C., the Taltheilei Shale Tradition appeared which Noble (1981:102) considers to be the major ancestral Athapaskan tradition. It is characterized by “the prolific use of gray siliceous shales...while elsewhere to the east, quartzite provides the most readily accessible material” (Noble 1981:103). White quartz, basalt, red jasper and various cherts were also utilized, although their frequency of use varied through time (Noble 1971: 110-115). The tradition consists of ten successive complexes extending into the historic period, circa A.D. 1840 (Noble 1971).

Noble was able to correlate the various Taltheilei Shale complexes, partially on the basis of their positions on the raised beach lines of eastern Great Slave Lake. These features are the result of isostatic rebound. The ten successive complexes are found from 1.5 to 19m above present lake level. This uplift, however, is much reduced at the western end of the lake, where sites dating to 900 B.C. are only 3.4m above shoreline, instead of well over 19m as found in the east. The difference led Noble to suggest the presence of one or more geomorphological “hinges” west of the major site at Taltheilei Narrows, 80km east of Thor Lake (Melville et al. 1989).

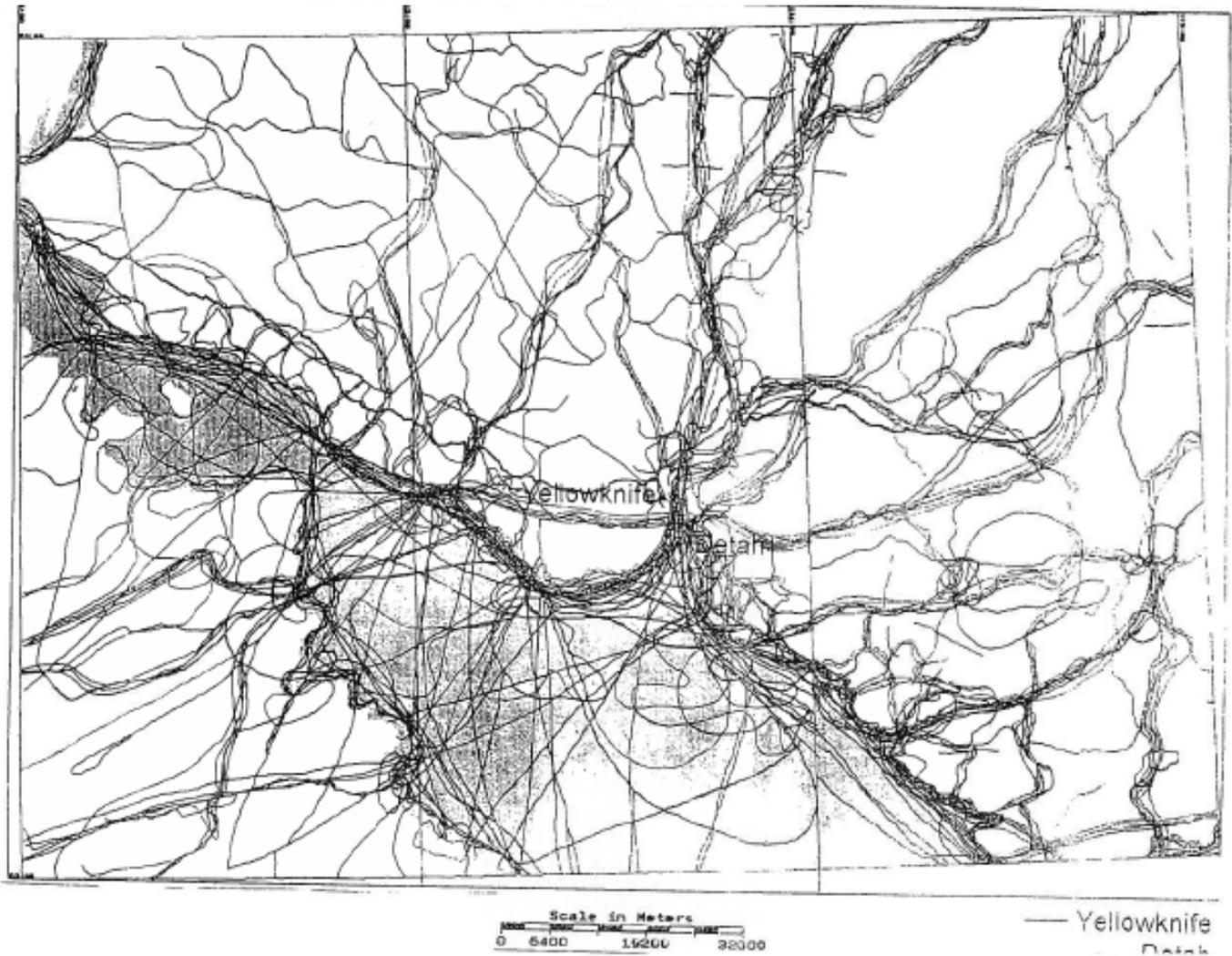
Ethnohistoric Background

The Taltheilei Shale Tradition lies “across much of the historic Yellowknife-Chipewyan homeland” (Noble 1981:102). The Yellowknives were a Chipewyan regional group who lived in an area from the Coppermine River south to modern Yellowknife, and east to the upper Thelon and Back Rivers (Gillespie 1981b:285, Figure 1). On the basis of the appearance of regional variations, Noble (1977:68) suggests the Chipewyan and Yellowknife separated after A.D. 200.

The Yellowknives were first recorded at Fort Churchill as early as 1721 (Gillespie 1981b:286). Conflicts with their western neighbours, the Dogribs, led to their gradual decline after the establishment of local trading posts in the early 1800s. They were further depleted by epidemics and began to amalgamate and intermarry with the Dogribs to the west and the Chipewyan to the east. Today, they no longer have “an identifiable dialectal or

ethnic identity” (Gillespie 1981b:285) and are known only from the historic record (Melville et al. 1989).

Participants of the Traditional Knowledge Studies noted that groups of people historically lived along the shoreline of Great Slave Lake. It was also noted that there are important historic and current travel routes on the Great Slave Lake between Yellowknife, Fort Reliance, and Lutsel K’e. Some of these trails can be seen in Figure 3.7-1 from the Yellowknives Dene First Nation report “A History”. The Dene Nation Mapping Project is currently developing a comprehensive map of all the trails utilized in the Great Slave region (EBA 2011a,b,c).



Source: Yellowknives Dene First Nation (1997)

Figure 3.7-1
Community Trails of Weledeh Yellowknives Dene

3.7.2 Archaeology Study

Introduction to Study

An archaeology study of the Thor Lake area was conducted in 1988 as part of the *Thor Lake Environmental Baseline Survey* (Melville et al. 1989). The archaeological study was conducted to determine the cultural resources present at or within the Thor Lake Project site. The following were the objectives of the survey:

- review the relevant literature;
- examine, on foot, areas which might have been used as campsites whether in the historic period or in pre-contact times;
- record the locations and characteristics (e.g. size and nature of terrain) of sites found; and
- recover samples of exposed artifacts.

The study focused on areas proposed for construction, and areas where disturbances had already occurred. Artifacts found on disturbed sites indicated potential cultural site locations and the need for further testing. Selected areas adjacent to the mine site were analyzed to determine the importance of the area during prehistoric times, in particular, the north shore of Great Slave Lake.

The north shore of Great Slave Lake immediately south of Thor Lake is of special archaeological interest. There are few protected locations conducive to camping along the shore because it is marked by sudden relief, rising as much as 70 m within 0.5 km of the shoreline. Topographical maps and local information indicate that the most desirable sheltered locations occur at the mouths of the Francois and Beaulieu Rivers, some 15 and 28km to the west, respectively, or at McKinley Point, 10.5 km east. According to topographic maps, the beach and point of land marking the start of the road from Great Slave Lake to Thor Lake would have provided one of the few accessible camp spots between these locations.

Specific areas examined include:

- the docking area on Great Slave Lake, including the beach, the point of land to the southeast, between the water and the road and the first 100m of road;
- the first 2 km of the road to Great Slave Lake (between the proposed mine site and Fred Creek);
- the mine site proper;
- the area between Thor and Cressy Lakes, especially the shoreline of Thor Lake;
- the high rock ridges adjacent to the mine site, including the north shore of Cressy Lake and south shore of Den Lake; and
- the construction camp present at that time, including the road leading to the mine.

Survey Methods

The survey methods used in the archaeology study included surface surveys; pedestrian transects and limited subsurface testing. The most common method used was surface surveys. Surface examinations were made of flat exposures of bedrock and soil, although the latter occurred rarely. Sections of lichen were occasionally lifted in order to examine the underlying bedrock. A total of four widely-spaced pedestrian transects were made across disturbed portions of the mine site, two running north-south and two east-west. Areas between transects considered to be potential heritage sites were also examined. Limited subsurface testing was carried out adjacent to places where artifacts were recovered at the docking site on Great Slave Lake. Further information on survey methods can be found in the full archaeology study in Appendix E for this report (Melville et al. 1989).

Site Results

Three sites were recorded. The Reg site (KaPb-4) consists of prehistoric and recent material found at the docking area and adjacent road at Great Slave Lake. The Lori site (KaPb-3) is a prehistoric lithic debitage scatter on the crest of the high ridge south of Den Lake and east of the mine site. The Strathcona site (KaPb-2) is the disused diamond-drilling exploration camp at the west end of Thor Lake. It was recorded for future archaeological reference. Four artifacts were collected, all from the Reg site: three white quartz bi-face fragments and one bone hide flesher (Melville et al. 1989).

The Reg Site

The Reg site is located on a small point on the north shore of Hearne Channel, Great Slave Lake, 10.5km west of McKinley Point. The site extends from the northwest end of a small beach along the point of land (south), and east to the beginning of a short section of flat bedrock shore. It stretches from the shore up a moderate slope to the road, which parallels the shore at about 10m elevation above the shoreline.

Artifacts were found at two separate localities. The first, area one, consists of the undisturbed northern half of beach and extends inland for 90 paces. The area was not examined further inland since it was expected that development would not occur this far from shore. Area two consists of the point of land immediately south of the beach. It is about 100 paces across and extends 100 paces inland to the road (Melville et al. 1989).

The Reg Site – Area One

Several recent camp fires were found on and below the exposed gravel beach ridge where the first scattered trees appear. However, there was no sign of recent intensive use.

A white quartz biface fragment (KaPb-4.1) (see Figure 6.4 of the Archaeology Study found in Appendix E) was found 19 paces inland, on the surface of the gravel on the shore side of the old beach ridge. Although visibility was good along the bare ridge, no other lithic materials were found.

Another white quartz biface fragment (KaPb-4.2) (see Figure 6.4 of the Archaeology Study found in Appendix E) was found in the root mat of a tree-throw 48 paces from shore and 4 paces north of the stream (Melville et al. 1989).

The Reg Site – Area Two

Five or six small scattered bone fragments were found along the north edge of the road. These had been damaged by the road-building equipment and it was not clear if they were originally there as a result of human or natural activities. Near the bone fragments, but on the south edge of the road, was a biface fragment (KaPb-4.4) (see Figure 6.4 of the Archaeology Study found in Appendix E), and a piece of shatter, both of white quartz. Although there was extensive subsurface exposure along both sides of the road, no other material was found (Melville et al. 1989).

The Lori Site

The Lori site (KaPb-3) consists of a scatter of white quartz debitage, on the highest crest of a rock ridge, 0.5km southeast of the mine site (see Figure 6.2 of the Archaeology Study found in Appendix E). Seven flakes and pieces of shatter were found scattered over an area 20 paces in diameter. A modern cairn had been built on the southwest corner of the scatter. Thus any rocks which might have been a part of a cultural feature, such as a tent ring or fireplace, were displaced. However, the surrounding lichen patches were broken up, increasing the visibility of the substrate. Thus the seven pieces of debitage were probably all or nearly all of the artifacts that were in the area.

A piece of white quartz resembling a core was found at the base of the ridge 150 paces west of the Lori site. It was lying on the surface of a lichen patch, so it was not possible to determine if it was a core carried in from elsewhere, or if it was the result of prospecting activities. Although the substrate visibility was good in the area, no other material was found (Melville et al. 1989).

The Strathcona Site

The Strathcona site (KaPb-2) is the modern diamond-drilling exploration camp on the west end of Thor Lake, 100 paces east of its outlet to Fred Lake (see Figure 6.2 of the Archaeology Study found in Appendix E). A pace map was made of the site to indicate the locations and functions of specific features (e.g. hearths, refrigerator pit). This information might be of interest to future archaeological work in the area (Melville et al. 1989).

For further discussion of the findings at each site see the Archaeology Study found in Appendix E.

The Study Area

It was expected that more prehistoric materials would be found in the study area. The docking area provides a suitable camping spot for canoe travel, and the high ridges bordering the mine site are also suitable travel routes. Despite the dense vegetation cover, especially lichen, there were ample exposed areas which indicated, by the absence of artifacts, that the area has seen little use.

The Reg site on Great Slave Lake seems to have been seldom used, perhaps because it lies halfway between McKinley Point and the mouth of the Francois River, within a day's travel of each other. As well, lengthy occupation of the site may not have occurred because access

to the interior is limited over the steep hilly shore. Regardless of cause, the site seems to have been little used either in the prehistoric past or recently.

It was not expected that material would be found at the mine site, since it is situated on low-lying ground with nothing to attract people to it. Although the area had been extensively disturbed, the amount of soil removed was often small and there were ample opportunities for investigation. Nothing was found at the mine site proper or on adjoining outcrops of flat bedrock.

A check was made to see if people had been using the general area. High ridges which provided escape from the insects ease of travel and observation points were examined. Similarly, lake shores and creeks which might have provided camp spots or, to some degree, fisheries, were also examined. The only material was at the Lori site which, as mentioned, was probably the result of a single lithic reducing activity, marking a brief stop at one of the best observation spots in the area.

People probably made little use of the area because there were excellent access routes into the interior by means of the nearby Francois and Beaulieu Rivers. The former leads to Blachford Lake and others immediately to the north, and the latter leads to the MacKay Lake system some 250km northeast. This was the route taken by Hearne and his Chipewyan party on their return south from the Arctic Ocean in 1771 (see Figure 6.6 of the Archaeology Study found in Appendix E).

Hearne (1958) wrote that his group stopped at, or near, the mouth of the Beaulieu River on December 24, 1781 and spent “some days in hunting beaver.” Today, people from Yellowknife visit the area to hunt moose.

Hearne then crossed the lake to the south through the Simpson Islands, where they, “lost much time in hunting deer and beaver, which were very plentiful on some of the islands....The lake is stored with great quantities of very fine fish; particularly between the islands....”As well, Taltheilei Narrows, 80km east, “was and continues to be a major fishery” (Noble 1977:71).

Thus, desirable sources or resources, as well as transportation routes to the interior, lay outside the mine site area. Since there are no specific attractions, and the expanse of land is so great, it is not surprising that few sites were found in the study (Melville et al. 1989).

3.7.3 Yellowknives Dene First Nation

Significant sites in the proposed Project site areas were discussed in the Traditional Knowledge Study conducted by EBA for the Yellowknives Dene First Nation. Participants were asked if they knew of any people who historically lived in the proposed Thor Lake site area. Sixteen of the 17 participants reported knowledge of people who historically lived in the proposed Thor Lake site area and/or greater area. One participant noted that groups of people historically lived all along the shoreline of Great Slave Lake at Hearne Channel. This individual added that there are important travel routes all over Great Slave Lake between Yellowknife, Fort Reliance and Lutsel K'e that people historically and currently use (EBA 2011a).

Participants cited specific locations where people historically lived and/or had cabins including Beaulieu River, Blatchford Lake, Buckham Lake, Drybones Bay (village), Francois Bay (village), Francois River, Grace Lake, Gros Cap (village), McKinley Point, Moose Bay, Narrows (by Plummers Lodge), Narrow Island (village), Thor Lake, and Whitman Lake (EBA 2011a). (No definition of “historical” was provided to participants. Therefore, participants’ responses also included reference to people that currently or for the past one to two generations had cabins, or used these areas i.e., Blachford Lake, Buckham Lake, and Whitman Lake).

When asked about the former Pine Point Mine site area, four participants indicated that people historically lived in the site area and/or greater area. Within this group, participants reported that people historically lived at Little Buffalo River and along the entire south shore of Great Slave Lake. One participant noted that 25 communities historically lived around Great Slave Lake, and that it was likely that one was located near the proposed site area (EBA 2011a).

Participants were also asked if they knew of areas of cultural significance in the proposed Project areas. Thirteen of the 17 participants identified significant cultural sites in the greater Thor Lake site area. Two participants identified significant cultural sites in the greater former Pine Point Mine site area. The identified significant cultural sites are alphabetically listed in Table 3.7-1.

TABLE 3.7-1: SIGNIFICANT CULTURAL SITES IDENTIFIED IN PROPOSED PROJECT AREAS	
Project Area	Participant Observations
Greater Thor Lake Site Area	<ul style="list-style-type: none"> • Beaulieu River; • Drybones Bay (graves (2)); • Francois Bay (historic village, graves (2), old cabins and spiritual site); • Francois River (grave); • Greater Thor Lake Site Area (used extensively for trapping and hunting); • Gros Cap (grave); • McKinley Point (graves); • Narrow Island (historic village); • Narrows (graves located along shore); • Unmarked Graves (located all along shore); • Unnamed Spiritual Site (located between proposed Thor Lake site and Great Slave Lake); and • Willow Lake (spiritual site located west of Thor Lake by Tommy Bay).
Greater Former Pine Point Mine Site Area	<ul style="list-style-type: none"> • Unmarked Graves (located in unspecified locations along the shore); and • Fort Resolution (treaty site - located east and outside of the “greater” area).

Source: EBA (2011a)

Note: “Greater” is meant to denote the area immediately surrounding the proposed Project area (e.g., approximately 50 km from the center of the proposed Project site).

3.7.4 Deninu Ku’e First Nation and Fort Resolution Metis Council

Significant sites in the proposed Project site areas were discussed in the Traditional Knowledge Study conducted by EBA. Participants were asked if they knew of any people who historically lived in the proposed former Pine Point Mine site area. Eighteen of the 19 participants reported knowledge of people who historically lived in the former Pine Point Mine site area and/or greater area. Six of these participants generally reported that people historically lived, travelled and harvested throughout the greater site area and southern shoreline of Great Slave Lake (EBA 2011b).

The other twelve participants cited specific locations where people historically lived and/or had cabins including: Big Buffalo River (at the mouth), Dawson Landing, Little Buffalo River (village), Paulette Bay (village), Pine Point (historic Town), Sulphur Point, Stony Island, and an area near the golf course where historic cabins are located (EBA 2011b).

When asked about the Thor Lake site area, fifteen participants reported knowledge of people that historically lived in the site area and/or greater area. Within this group, ten participants generally reported that people historically lived, travelled and harvested throughout the greater site area and northern shoreline of Great Slave Lake. One of these participants noted that people from Lutsel K’e and Fort Resolution historically met in the greater area to hunt. The other five participants cited specific locations where people historically lived and/or had cabins including: Gros Cap (population died during 1920s influenza epidemic), Narrow Island (historic mine and camp), Simpson Islands (old fishing camp built by Hay River Fisheries), Thor Lake (larger area) and the northern shore of Great Slave Lake to Yellowknife (EBA 2011b).

Participants were also asked if they knew of areas of cultural significance in the proposed Project areas. Eight of the 19 participants identified significant cultural sites in the greater former Pine Point Mine site area. Seven participants identified significant cultural sites in the greater Thor Lake site area. The identified significant cultural sites listed in Table 3.7-2.

TABLE 3.7-2: SIGNIFICANT CULTURAL SITES IDENTIFIED IN PROPOSED PROJECT AREAS	
Project Area	Participant Observations
Greater Thor Lake Site Area	<ul style="list-style-type: none"> • Beaulieu River (graves); • Grave (located east of Thor Lake site area); • Graves (located in unspecified locations along the lakeshore) • Greater Thor Lake Site Area (unspecified sites); • Stony Island (graves (4), additional graves located on mainland across from Stony island); and • Talthelei Narrows (grave located near airport and fishing lodge).
Greater Former Pine Point Mine Site Area	<ul style="list-style-type: none"> • Big Buffalo River (grave); • Greater Pine Point Mine Site Area (used for touring, biking and quadding activities); • Little Fishery (graves (2) – located up the slough near Slave River); • Log Cabins (shaped like teepees – located in Greater Pine Point Mine area); • Mission Island (graves (26)); and • Graves (located in unspecified locations along lakeshore).

Source: EBA (2011b)

Note: “Greater” is meant to denote the area immediately surrounding the proposed Project area (e.g., approximately 50 km from the center of the proposed Project site).

3.7.5 Lutsel K'e Dene First Nation

Significant sites in the proposed Project site areas were discussed in the Traditional Knowledge Study conducted by EBA. Participants were asked if they knew of any people who historically lived in the proposed Thor Lake site area. Two of the participants responded “no.” The other 11 participants generally indicated that although they did not know of anyone who historically lived at the specific Thor Lake site, that people lived and travelled extensively throughout the greater area to hunt (e.g., follow the caribou population), trap and gather (EBA 2011c).

Participants cited specific locations in the greater Thor Lake site area where people historically lived and/or had cabins including Beaulieu River, Blanchet Island, Francois Bay, Gros Cap, Keith Island, Narrows (east of the proposed Thor Lake site), Narrow Island, Simpson Islands, Taltheilei Narrows and the entire north shore of Great Slave Lake (EBA 2011c).

When asked about the former Pine Point Mine site area, three participants indicated that people historically lived in the site area and/or greater area. Within this group, participants noted that people historically lived in the town of Pine Point when the former Pine Point Mine was in operation. One participant reported that homes were historically located in the area before they were born, and another participant indicated that a cabin is located at the mouth of Big Buffalo River (EBA 2011c).

Participants were also asked if they knew of areas of cultural significance in the proposed Project areas. Eight of the 13 participants identified significant cultural sites in the greater Thor Lake site area. Two participants identified significant cultural sites in the greater former Pine Point Mine site area. The identified significant cultural sites are alphabetically listed in Table 3.7-3.

TABLE 3.7-3: SIGNIFICANT CULTURAL SITES IDENTIFIED IN PROPOSED PROJECT AREAS	
Project Area	Participant Observations
Greater Thor Lake Site Area	<ul style="list-style-type: none"> • All Land (valued as culturally significant in its entirety); • Beaulieu River (used extensively for trapping and hunting); • Blachford Lake; • Cabins, Camps and Hunting Areas (cabins and camps located along entire north shore of Great Slave Lake/not inland); • McKinley Point (used as main travel route and marker); • Unnamed Site located in the Narrows (located east of the proposed site); and • Unmarked Graves (may be present in area because people were historically buried where they died).
Greater Former Pine Point Mine Site Area	<ul style="list-style-type: none"> • Moose and Fishing Areas.

Source: EBA (2011c)

Note: “Greater” is meant to denote the area immediately surrounding the proposed Project area (e.g., approximately 50 km from the center of the proposed Project site).