

WESTERN COPPER HOLDINGS LIMITED
WILLIAMS CREEK COPPER OXIDE PROJECT

VOLUME 2

**COMMUNITY PROFILES AND
SOCIOECONOMIC IMPACT ASSESSMENT**



Hallam Knight Piésold Ltd.
ENVIRONMENTAL CONSULTANTS

WESTERN COPPER HOLDINGS LIMITED
WILLIAMS CREEK COPPER OXIDE PROJECT

VOLUME 2

**COMMUNITY PROFILES AND
SOCIOECONOMIC IMPACT ASSESSMENT**

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1.0 SOCIOECONOMIC DESCRIPTION OF WHITEHORSE

1.1 INTRODUCTION: A HISTORY OF WHITEHORSE

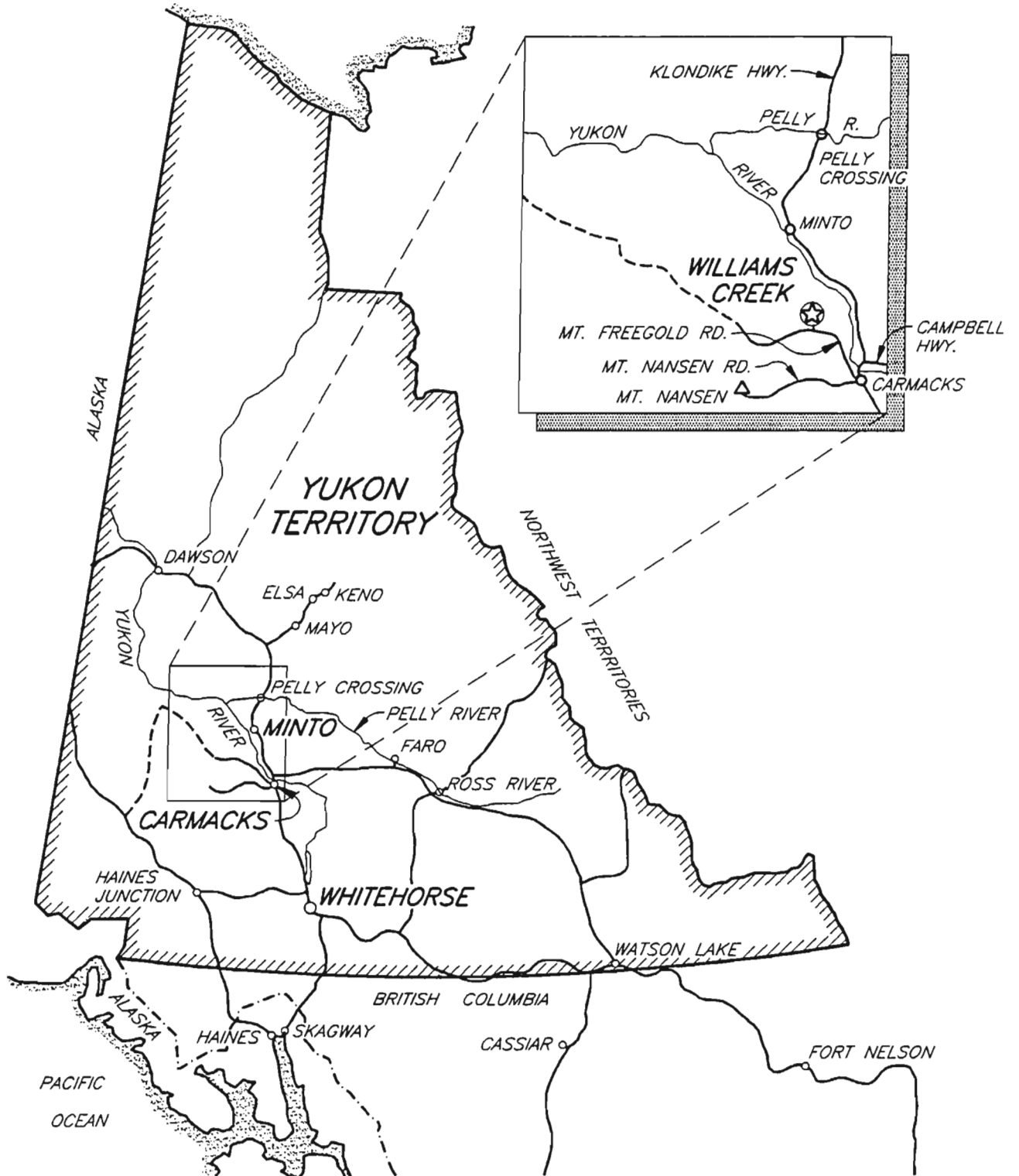
Whitehorse, the capital of Yukon Territory, is located in the south-central portion of the territory (Figure 1.1) on the western bank of the Yukon River, 20 km downstream of its headwaters at Marsh Lake. The city is named for the historic Yukon River rapids which have since been dammed for hydroelectric facilities. The climate of Whitehorse is one of extremes, characterized by short warm summers and long harsh winters. The presence of permafrost has necessitated the development of dual building standards.

Whitehorse is known primarily as a regional service and distribution centre for Yukon Territory and Northern British Columbia. It has historically been at or near the focus of major economic and administrative development since it was established at the turn of the century. The city currently houses a majority (70.1%) of the Territory population, and as such, has become the regional centre in the Yukon. During the Klondike Gold Rush, Whitehorse became the northern inland terminus for the White Pass and Yukon Railway; the community has been closely linked to the trade and transportation industries ever since.

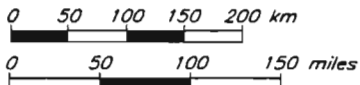
During World War II, the Alaska Highway was constructed through the Yukon to provide an overland supply route to connect the industrial heartland of the U.S.A. to the strategic frontline Alaskan defence installations. Today, the Alaska Highway remains the single most important element in the overall Yukon transportation grid as it has now become economically feasible to extend secondary roads into previously inaccessible resource areas. In the 1940's, Whitehorse's importance as a transportation centre was further enhanced by the construction of the Canal Road/Pipeline, which linked the city with the oil producing community of Norman Wells in the Northwest Territories.

During World War II, Whitehorse was selected as a strategic point on the northwest staging route for military planes and supplies ferried to Alaska, destined for the Far East. This resulted in the construction of the Whitehorse Airport. This airport has since played an integral role in the subsequent growth and development of both Whitehorse and the Yukon.

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LOCATION MAP



CAD FILE: \PROJECT\1000\H1811\FIG1.A1 Plot scale 1=1



Sept. 16, 1993

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FIGURE 1

WILLIAMS CREEK COPPER OXIDE PROJECT

In the 1950's, the population of Whitehorse dropped from its war-time high of 40,000 to 6,000. Already the seat of federal government authority in the Yukon, Whitehorse became the territorial capital in 1953, which resulted in a greater degree of economic stability for the city. From a base population of 6,000 residents in 1955, Whitehorse has grown steadily to its present level of approximately 16,000 inhabitants. With this growth has come a gradual expansion and diversification in the range of economic activities conducted within the city.

The introduction of containerized freight handling by White Pass and Yukon Railway in 1955 revolutionized the commercial goods distribution process in the north and further solidified Whitehorse's already strong position as dominant distribution centre for the territory. The role of Whitehorse as the initial trans-shipment point for outbound Yukon ore concentrates is very important to the community in an economic sense. Although mining, transportation and tourism represent strengths of the industrial sector, Whitehorse remains a government town and as such a substantial number of the city's labour force are engaged in public administration.

1.2 COMMUNITY PROFILE

Whitehorse was amalgamated to include the Whitehorse Metropolitan Area in June 1971 and currently encompasses 413.48 square km. Most major development areas are situated along the Alaska Highway and are thus linked to the downtown core. The city consists of a number of residential and light industrial sections spread over a large area. The downtown core, which is 2 km to the east of the Alaska Highway, and the Marwell industrial areas are located on the west bank of the Yukon River. Downtown Whitehorse consists mostly of central and service commercial sectors, multi-family residents (town houses, apartments and duplexes) and public use areas.

The large residential district of Riverdale, which is located on the east bank across from the downtown core, is connected by a two-lane bridge. A number of residential areas, Hillcrest, Valleyview, Takhini, Granger and Porter Creek/Crestview are situated on benches above the downtown core and stretch north along the Yukon River. There are a number of rural residential (0.8-2.0 ha lots) subdivisions located within a 20-minute commute of the downtown core (Wolfe

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Creek, Mary Lake to the south, and Pilot Mountain and MacPherson to the north). There are also a number of extended residential areas outside of the city limits, including the hamlets of Mount Lorne and Ibex Valley.

Seven trailer/mobile home parks (LoBird, Kopper King, Casa Loma, MacKenzie, Baranov, Northland and Takhini) are distributed throughout the municipality and provide extensive housing opportunities for mobile dwellings.

Several industrial areas exist in the Whitehorse municipality: the Kulan Industrial Subdivision in Porter Creek, the Hillcrest Industrial subdivision on Burns Road, an area adjacent to the Porter Creek Subdivision on the west side of the Alaska Highway and the McRae Industrial Area.

Most industrial areas are used for service (auto body, equipment sales and rental, warehousing, assembly) and transportation industrial purposes while heavy industrial (manufacturing, fuel and bulk storage, iron works) activity is mostly restricted to the McRae Industrial Area.

1.3 COMMUNITY DEMOGRAPHICS

On Census Day 1991, 16,370 or 91.3% of Whitehorse residents were five years of age and older. The remaining 1,555, or 8.7% were of preschool age (four years and younger). The largest division of the population are represented by the 30 to 39 years age group, comprising 2,020 (11.3%) of the females and 1,900 (10.6%) of the males (Table 1.1).

The population of Whitehorse is growing; census records taken in 1986 and 1991 indicate that the population has increased by 17.9% in this period of time which is substantial compared to a 2.6% increase from 1981 to 1986. Of the 14,814 people five years and older registered in 1981, 4,845 (32.7%) were at the same residence in 1986. Another 4,590 individuals had moved, but were still residents of Whitehorse, 955 had relocated from within the census division and 3,300 had relocated to Whitehorse from other areas of the Yukon Territory or from outside Canada. The most notable influx of people has come from within Canada, but outside of the Yukon Territory (Census 1986).

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Table 1.1

Williams Creek Copper Oxide Project

The Age Distribution of Whitehorse's Population (Census Day, 1991)

Years	Female	%	Male	%
Total	8,725	48.7	9,200	51.3
0-4	720	4.0	835	4.7
5-9	735	4.1	765	4.3
10-14	645	3.6	705	3.9
15-19	615	3.4	655	3.7
20-24	670	3.7	695	3.9
25-29	865	4.8	810	4.5
30-34	1,015	5.7	930	5.2
35-39	1,005	5.6	970	5.4
40-44	825	4.6	870	4.9
45-49	510	2.9	680	3.8
50-54	375	2.1	435	2.4
55-59	260	1.5	305	1.7
60-64	155	0.9	240	1.3
65-74	225	1.3	215	1.2
75 +	110	0.6	90	0.5

Based on 1986 census statistics the vast majority of Whitehorse residents were born in Canada (89.8%). Of those that were born outside Canada, 575 emigrated from the United Kingdom, 550 from other European countries, 345 from the U.S.A. and 165 from Asia. The most commonly spoken language in Whitehorse is English (89.3%) followed by French (3.0%) and German (1.7%) (Census 1991).

Whitehorse's population is very well educated. Only 7.6% (860) have less than a grade 9 education, while 40.6% (4600) have secondary school education (grades 9 to 13) and highschool graduation with a diploma or trades qualification. Approximately 51.9% of the people have some level of post-secondary education, attending university or community colleges. Of the 4,685 with

post secondary education (2,375 males, 2,310 females) the majority hold degrees in engineering and applied science technology (23.9%), commerce (21.2%), social sciences (11.2%), education (9.6%) and health sciences (9.1%).

1.4 EMPLOYMENT AND INCOME

Whitehorse, as the territorial capital, is the administrative centre for the federal, territorial and municipal divisions of government. Government jobs are the main source of employment in the city; 19.9% of the population are currently work in the governmental sector. Territory wide service companies such as NorthwesTel and Yukon Electric Company are the next major employers. Other major employers include trades (17.6%), transportation (13%), storage (13.0%) and construction (7.1%). Other sectors which contribute significantly to regional employment are exploration and mining, commercial and sport fishing, trapping, agriculture, forestry, finance and manufacturing.

The largest component of male workers are employed in managerial and business administration, construction, machining, fabrication, assembling and repairing, and technological, social, religious and related skills (Table 1.2). The majority of female workers are employed in clerical, service and managerial and business administration fields. Ninety-four percent of workers are paid by an employer, while 6% are self-employed.

Unemployment in 1986 averaged 12.3%, comprising 13.1% males and 11.5% females (Census, 1986). Based on more recent data (January 1993) the current labour force is 13,500 and the unadjusted employment rate is 12.5%. Full-time males averaged \$34,500 per year, while full-time females averaged \$24,700 per year and family incomes averaged \$44,000 per year. The 1989 median income for Whitehorse residents was \$23,600.

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Table 1.2

**Williams Creek Copper Oxide Project
Whitehorse Labour Force (Census 1986)**

Occupation	Male	Female
All Occupations	5,025	4,140
Managerial, Administrative	735	425
Teaching	165	310
Medicine, Health	40	205
Technological, Social, Religious, Artistic and Related	525	395
Clerical	320	1510
Sales	390	290
Service	480	805
Primary	345	20
Processing	70	30
Machining, Product Fabrication, Assembling, Repairing	530	35
Construction, Trade	735	20
Transportation, Equipment Operating	390	35
Other	320	65

1.5 INFRASTRUCTURE

The city of Whitehorse is accessible from Edmonton and Vancouver by the Alaska Highway or from Skagway, Alaska, by the Klondike Highway which are both all weather roads. City streets in Whitehorse are mostly paved, although some outlying rural residential roads are gravel. Streets are maintained by the City Public Works Department who provide snow removal and sanding in winter and street sweeping in the spring and summer.

The Whitehorse Airport, which encompasses an area of 433 ha, is located on a bench immediately above the downtown core and is bordered on three sides by residential or light industrial areas. The main runway terminal, which opened in 1985, provides full passenger services. Two lighted paved runways exist: a 2200 metre (7200 feet) main runway and a 1500 metre (5000 ft) secondary runway. A ski strip is available in the winter. Airport facilities include VASIS, VHF and HF communications, directional beacons, VHF omni range, distance measuring equipment, rotating beacon, weather station, fuel and oil, and a twenty-four hour flight station. Whitehorse Air Maintenance Ltd. provides mechanical service.

Air cargo is handled by individual carriers, but no bulk freight capabilities exist. The airport is also a Canada Customs Port of Entry. Flights to and from Whitehorse include: Canadian Airlines, twice daily from Vancouver (passenger and cargo service); Alkan Air, to Dawson, Mayo, Inuvik four times weekly, to Faro and Ross River three times weekly and to Watson Lake as required; Air North, service to Dawson daily, Old Crow three times weekly, Fairbanks, Alaska four times weekly, Juneau, Alaska, three times weekly; Ptarmigan Airlines (in Yellowknife) to Whitehorse three times a week. Six air charter companies also offer plane and/or helicopter service. Float plane facilities are available at Schwatka Lake docks.

Whitehorse was serviced by the Yukon and WhitePass Railway until the early 1980's. Service ran between Whitehorse and Skagway, Alaska, with passengers and freight. It has since been reopened between Skagway and Lake Bennett, Yukon, for tourist traffic during the summer months only.

Greyhound Buslines run a regular service three days a week to Vancouver and Edmonton, with stops in between. Three other local bus lines offer passenger and freight service to points north.

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Three national courier services, Purolator, Loomis, Greyhound Courier Express, and five local firms provide delivery and courier services. Ten trucking companies including Allied Vanlines and Canadian Freightways offer a variety of transport services to the Whitehorse community.

Four taxicab companies are currently operating in Whitehorse, with a total of 41 vehicles. The Whitehorse Transit System operates Monday through Saturday (6:15 am to 7:00 pm, Monday to Thursday, until 10:00 pm on Friday, 8:00 am to 6:00 pm Saturday), but does not operate on Sundays and holidays. The Whitehorse Transit System consists of six bus routes and operates nine full size buses and a Handy-Bus for disabled persons and senior citizens who are unable to use the regular bus.

1.6 GOVERNMENT, MUNICIPAL AND COMMERCIAL/BUSINESS SERVICES AND AMENITIES

Federal agencies in Whitehorse include: Agriculture Canada, Environment Canada, Department of Fisheries and Oceans, Employment and Immigration Canada, Energy, Mines and Resources Canada, Health and Welfare Canada, Indian and Northern Affairs Canada, National Defence and Public Works.

Territorial agencies represented in Whitehorse include: Community and Transportation Services, Education, Economic Development, Health and Social Services, Renewable Resources and the Yukon Housing Corporation.

Municipal agencies within the city include: City of Whitehorse Parks and Recreation, Public Works, Human Resources, Municipal Services, Bylaw Enforcement, Building Inspection/Maintenance, Animal Control Shelter and two firehalls.

Whitehorse has a broad diversity of local businesses with a variety of goods and services. On the basis of Business License Records, as of April 22, 1993 there were a total of 2,716 businesses registered. A summary is provided in Table 1.3.

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Table 1.3

Williams Creek Copper Oxide Project

Summary of Commercial/Business Services in Whitehorse (April 1993)

Sector	Number of Firms
Arts and Crafts including: Art, Music, Dance, Handicrafts, Photography, Taxidermy, Gunsmith, Seamstress, Tailor, etc.	5
Construction including: Heating, Plumbing, Acoustics, Cleaning, Janitorial, Electrical, Excavating, Paving, Painting, Drywall, Cabinet Making, Tile, Flooring, Window Covering, etc.	220
Engineering, Law, Business Support including: Engineering, Law, Data Processing, Delivery, Courier, Drafting, Office Services, Travel Agents, Consulting, etc.	122
Farming and Forestry including: Gardening, Landscaping, Forestry, etc.	5
Financial and Real Estate including: Accounting Banks, Credit Unions, Tax Services, Insurance, Real Estate, etc.	26
Health, Personal Services and Recreation including: Chiropractor, Dentist, Doctor, Optometrist, Barber, Dry Cleaning, Activities, Instruction, etc.	69
Hospitality including: Hotels, Motels, Restaurants, Cabarets, Lounges, Pubs, Snack Bars, etc.	147
Manufacturing, Fabrication and Repair including: Manufacturing, Equipment Rental, Machining, Welding, Appliances, Electrical Equipment, Electronics, Sawfiling, Sharpening, etc.	73
Trade and Commerce including: Direct Sales, Mail Order, Bakery, Home and Garden Supplies, Clothing, Fabrics, Groceries, Jewelry, Home Entertainment, Sporting Goods, etc.	398
Transportation, Communications and Utilities including: Automobile Parts and Sales, Auto Repair, Bus, Rail, Boat Charter, Service Stations, Taxi, Trucking, Warehousing, Printing and Publishing, Radio, Television, etc.	130

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The major retail outlets located in Downtown Whitehorse are the Qwanlin Mall (12 stores), Yukon Plaza and Main Street. There are also neighbourhood plazas in the Riverdale and Porter Creek Subdivisions.

1.7 UTILITIES

Local, long distance and mobile telephone services for the community of Whitehorse are provided by NorthwesTel Inc. Electrical power is provided by the Yukon Energy Corporation (a Territorial Crown corporation) via the Yukon Electrical Company Ltd. Hydro-electric power is generated from the Whitehorse Rapids and Aishihik Stations and is supplemented by diesel power generators. Natural gas energy is not available in Whitehorse.

The Whitehorse municipal water supply comes from the Selkirk Aquifer and Yukon River/Schwatka Lake wells. Rural subdivision residents rely on private wells or water delivery.

Whitehorse maintains 450 km of sanitary mains, 180 km of storm drains and three waste water treatment systems. Wastewater treatment for the subdivisions of Riverdale, Downtown, Hillcrest, Valleyview, Marwell, Takhini and Granger consist of a four cell lagoon system located on the east side of the Yukon River. The Porter Creek and Crestview subdivisions have a two cell and four cell lagoon treatment system, respectively. Approximately 350 houses within the city limits use septic fields.

The entire wastewater treatment system is currently under review to improve the effluent quality, the main focus being the Porter Creek and Downtown Whitehorse systems. The city plans to install secondary treatment cells and a long term storage area for a once annual discharge.

The city maintains a weekly garbage collection service. A 15.5 ha municipal garbage disposal facility is located 8 km west of the city centre, between Takhini and Porter Creek.

1.8 COMMUNICATIONS

Whitehorse is served by the Whitehorse Star Daily (published daily), the Yukon News (published Wednesday and Friday), the Northern Courier, and the Aurore Boreale. The Northern Journal is a monthly publication, serving Yukon Territory residents. In addition, Ye Sa To Communications publishes the Dann Zha Magazine, which addresses issues that concern the Yukon First Nations People.

Three radio stations exist; CKRW (AM), CHON 98.1 (FM) and CBC FM, all locally produced. In addition, a radio station sponsored by Yukon Tourism, CKYN 96.1, offers information and entertainment to visitors, and broadcasts from mid-May to mid-September.

Local television stations include CBC North, Northern Native Broadcasting, WHTV Cable (30 channels and eight FM signals) and International Communications Corporation (satellite rebroadcasts of three channels). Additional pay services such as Super Channel and the Family Channel are also available through the local television service.

1.9 LAW ENFORCEMENT, COURTS AND FIRE PROTECTION

Whitehorse's RCMP headquarters is staffed with 35 officers plus approximately 35 administration staff and is equipped with 12 patrol vehicles. Whitehorse is the law enforcement administration centre for the territorial justice department. The court house has three Territorial Judges, two Supreme Court Judges and two Justice of the Peace. A regular Territorial Court circuit serves other communities every two months, while the Supreme Court is available on a necessity basis. Whitehorse has a minimum security correction facility and a Young Offenders Detention Facility which are both located in the Takhini subdivision.

There are two fire halls serving the community (one downtown and one in the Takhini subdivision) with a combined firefighting staff of 22 full-time and 20 volunteers. Support vehicles include two fire suppression trucks per station, with one spare, and additional service vehicles.

1.10 HEALTH AND EDUCATION

Whitehorse General Hospital acute care facility has an approved 78-bed capacity, and is staffed by 2 surgeons, 1 obstetrician/gynaecologist and 26 doctors. Specialists make regular visits to the city. The hospital is equipped to perform general, short-stay surgery and has physiotherapy facilities. The nursing staff consists of 110 nurses; 70 RN and 40 CNA (90% are full-time). All 26 general practitioners maintain practices outside the hospital. In addition, the community of Whitehorse is served by several clinics, one physiotherapist, nine dentists and an orthodontist.

In 1992 Whitehorse had a public school enrolment of 3,974 students in one primary (125 enrolled), six elementary (2150 enrolled), three junior secondary (844 enrolled) and one senior secondary (776 enrolled) school. French immersion programs are offered at elementary, junior and senior secondary levels, plus an exclusively French-speaking school offers kindergarten to Grade 9 (79 enrolled). The average student:teacher ratio for the Whitehorse school system in 1992 was 15:1.

The Yukon College consists of 12 community campuses, plus the Whitehorse Corrections Facility and Council for Yukon Indians Friendship Centre. A total of 850 full-time and 2400 part-time students attend. Community campus courses are based on GED and college preparation continuing education. Courses are not set, but rather are supplied as a need is identified. The Whitehorse Amygdagit Campus offers Year One and Two University entrance courses and a number of full diploma and certificate programs. The number of courses vary with each program: academic (university entrance), 120 courses; Developmental Studies (GED, college preparation), 43 courses; Professional Studies, 215 options; and Native Teacher/Language Program, 22 options.

1.11 HOUSING AND VACANCY RATE

As of April 1993, the number of occupied dwelling units in Whitehorse totalled 6,195 with approximately 59% being owner occupied. Whitehorse is one of the few Canadian communities in which such a large proportion of the occupied dwellings are rented (41%). Additionally, a relatively high proportion of the local housing stock falls under the categories of mobile homes and

apartments (37%), while single detached houses, semi-detached houses and row houses comprised 59%, 7% and 5% of the dwelling units, respectively.

Current statistics indicate that on average a single house in Whitehorse sells for approximately \$112,000 (Yukon Statistical Revue, 1992). On average, mobile home units, including a lot, sell for \$81,000.

The vacancy rate of all units combined in Whitehorse for the second quarter of 1992 was 2.8%. For bachelor suites, the vacancy rate declined from 11.5% to 4.8%, while the one-bedroom vacancy rate decreased from 5.4% to 4.6% and the two-bedroom vacancy rate remained constant at 0.8%. Vacancy rates were highest in the Porter Creek and Hillcrest suburb developments. Median rental rates for all units in Whitehorse was \$575 for the second quarter of 1992.

1.12 RECREATION

The municipality of Whitehorse offers a variety of outdoor activities including fishing, hunting, skiing (cross-country and down-hill), snow-mobiling, dog mushing, canoeing, hiking, biking, camping, baseball, soccer, football, track and field, racquet sports and orienteering.

Public facilities in and around the community include two ice arenas, 30 outdoor rinks, one swimming pool, one ski chalet, a curling rink with eight sheets, one shooting range, world class cross-country ski trails, one downhill ski area, two 18-hole golf courses, 30 playground parks, two softball complexes, several boat marinas, a float plane dock, an oval auto race track, a motocross track, a sled dog race track, squash and racquet ball courts, tennis courts, soccer fields, numerous baseball diamonds and a bowling alley.

There are many active arts organizations in Whitehorse, including several performing and visual arts groups, a choral society and an historical society. Cultural facilities available include a library, museums of Yukon history, historical archives, two movie theatres and two small performing arts theatres. The Yukon Arts Centre, which opened in May 1992, comprises a 430 seat auditorium and an art gallery capable of handling national travelling exhibits.

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Whitehorse hosts more than 250 service clubs, sports clubs, youth organizations, business and professional associations, organizations devoted to those with special needs as well as other special interest groups. Whitehorse also has a wide range of religious organizations and churches.

Annual festivals include the Yukon Sourdough Rendezvous, the Whitehorse/Yukon Trade Show, an Arts Festival, the Frostbite Musical Festival, the Northern Storytelling Festival, the Yukon Quest 1000 Mile Sleddog Race, the Klondike Road Relay (Skagway to Whitehorse) and Discovery Day celebration.

2.0 SOCIOECONOMIC DESCRIPTION OF CARMACKS

2.1 COMMUNITY PROFILE

Named after George Washington Carmack, one of the co-discoverers of Klondike gold, Carmacks was established in 1892 as a riverboat fuelling station. It also acted as a major stopping point on the Overland Trail that linked Whitehorse with Dawson City. Carmacks is located on the Klondike Highway on the banks of the Yukon River at the junction with the Robert Campbell Highway (Figure 1.0). The nearest communities to Carmacks are Minto Landing and Pelly Crossing (Appendix I) which are located approximately 75 and 108 km to the north, respectively. Carmacks is accessible by the Campbell Highway which travels northeast to Faro, Ross River and Watson Lake and by the Klondike Highway which travels southeast to Whitehorse, 186 km away.

Although the Little Salmon Carmacks First Nation Lands (Appendices II, III and IV) are concentrated on the north bank of the Yukon River, many members of the First Nation live in the village of Carmacks which is located on the south bank of the river and is joined by a bridge. The municipality of Carmacks comprises an area of 17.23 square km, most of which is residential land with limited commercial and industrial areas. A majority of the residential dwellings are located west and north of the village core, while the commercial and industrial sites are south and east. A main road through town crosses the Nordenskiöld River and meets the Mt. Freegold road.

2.2 COMMUNITY DEMOGRAPHICS

The village of Carmacks has a population of 449 people (Yukon Bureau of Statistics, 1992); the largest portion of the community being between the ages of 25 and 34 (24.7%) (Table 2.1a). Carmacks has a young community; 80% of the residents are 34 years of age or younger. The female to male ratio in Carmacks is 1:1.11 (Table 2.1b). The majority of Carmacks residents are members of the Little Salmon Carmacks First Nation (Appendix IV), while the remainder are primarily of mixed European descent. The most common language spoken is English (85.7%), but many of the residents also speak Athapaskan. Note that the Yukon Bureau of Statistics (1992)

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data gives a higher population for Carmacks than that quoted by Census Canada (1986) as a result of differences in reporting.

As of the 1986 Census most of the residents of Carmacks were born in the Yukon (60.7%). Of the 250 residents (5 years and older) registered in the 1986 Census, 40.0% were residents of Carmacks in the previous Census, 50% had moved to Carmacks from within the territory, and 10.0% had moved to Carmacks from within Canada.

Approximately 60% of the Carmacks population (15 years and older) had completed secondary school (grades 9 to 13) and/or had obtained a trade certificate, and 23.7% of the population had acquired some degree of post-secondary education. Of those individuals with post-secondary degrees (25 females, 35 males) the majority of certificates were in the areas of physical education (58.3%) and engineering/applied science technology (16.7%). According to 1986 Census data 23.7% of the 190 registered residents of Carmacks, 15 years and older, had less than a grade nine education.

Table 2.1a

Williams Creek Copper Oxide Project

Population Distribution of Carmacks (Yukon Bureau of Statistics 1992)

Age	Number of People	%
Total	449	100.0
0-4	53	11.8
5-9	35	7.8
10-14	29	6.5
15-24	74	6.5
25-34	111	24.7
35-44	60	13.4
45-54	35	7.8
55-64	31	6.9
65+	21	4.7

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Table 2.1b

Williams Creek Copper Oxide Project

Population Distribution of Carmacks (Census 1986)

Age	Female	%	Male	%	Total
Total	135	47.4	150	52.6	285
0-4	15	5.4	15	5.4	30
5-9	15	5.3	20	7.0	35
10-14	10	3.5	10	3.5	20
15-19	10	3.5	10	3.5	20
20-24	10	3.5	15	5.4	25
25-34	30	10.5	30	10.5	60
35-44	10	3.5	20	7.0	30
45-54	10	3.5	15	5.4	25
55-64	5	1.8	10	3.5	15
65-74	0	0	5	1.8	5
75+	5	1.8	0	0	5

2.3 EMPLOYMENT AND INCOME

Census Canada (1986) reports that the main employment sectors in Carmacks are service (16.7%), construction (16.7%), mining (8.3%) and clerical (8.3%). Employment is also offered by forestry (5.6%), teaching (5.6%), repair (5.6%) and social sciences (5.6%) (Table 2.2). Within these sectors the most common occupation for men is the construction industry, and for women is the service industry (Census 1986). The 1989 median income for Carmacks residents was \$10,300. Total income reported for Carmacks for 1990 was \$4.3 million (Table 2.3).

Based on insurance claims for 1992 the un-adjusted unemployment rate for Carmacks was 8.9% (Yukon Bureau of Statistics, 1992). This value, however, does not take into consideration people who are supported by social assistance or are not looking for employment. Yukon Health and Social Services reports 51 cases of social assistance for 1992/1993.

Table 2.2
Williams Creek Copper Oxide Project
Carmacks Labour Force (August 1988)

Total Labour Force (15 years and older)	180
Managerial	5
Social Sciences	10
Religion	5
Teaching	10
Health	5
Clerical	15
Sales	5
Service	30
Forestry	10
Mining	15
Repair	10
Construction	30
Equipment and Operators	5
Other crafts	5

Note: Figures rounded off to the nearest 5.

Table 2.3

Williams Creek Copper Oxide Project

Income Reported by Source of Income (Statistics Canada, 1990)

Source of Income	Total (millions of Dollars)
Wages/Salaries/Commissions	3.3
Self-Employment	0.0
Interest	0.1
Family Allowance Benefits	0.1
Unemployment Insurance Benefits	0.4
Pensions	0.2
Child Tax Credits	0.1
Federal Sales Tax Credits/ GST Credits	0.0
Non-Taxable Income/ Provincial Tax Credits	0.1
Total Income	4.3

2.4 GOVERNMENT, MUNICIPAL AND COMMERCIAL/BUSINESS SERVICES AND AMENITIES

Federal services in the Village of Carmacks include RCMP, Northern Affairs Resource Management Office (three winter staff, summer staff for firefighting) and a health centre.

Territorial Government services include the Yukon Housing Corporation, a highway maintenance camp, the Yukon College campus, an elementary/secondary school and a campground. An airfield is located approximately 15 km northeast of town on the Robert Campbell Highway, but no passenger or cargo facilities exist at the site.

Municipal services include a town administration and operating staff, a volunteer fire protection staff, and a sewage treatment plant.

Carmacks is serviced by two gas stations (one with automotive repair service), two general stores, a postal service, one hotel (with lounge), one motel, two restaurants, a year round helicopter charter and several small construction operators. Greyhound Buslines service the community on its route to Dawson City. There are no taxis serving the Village of Carmacks.

2.5 UTILITIES

A 138 kv power line with stepdown transformers provides the residential and commercial areas of Carmacks with power. Phone service is available through a NorthwTel microwave station. The local water supply is currently of questionable quality and thus many home owners have drilled their own wells. The Little Salmon Carmacks First Nation has a communal well system that supplies water to approximately 20% of the population. A sewage treatment plant of 20,000 gallons/day capacity serves the Village of Carmacks and usually operates at 75% capacity. The Little Salmon Carmacks First Nation operates septic fields for their houses. A solid waste landfill is located approximately 2 km south of Carmacks and is operated jointly by the Village of Carmacks and Little Salmon Carmacks First Nation.

2.6 COMMUNICATIONS

Carmacks receives the same radio stations as Whitehorse; CKRW (AM), CHON 98.1 (FM) and CBC FM. Television reception is limited to CBC North and Northern Native Broadcasting. There are no local newspapers published in Carmacks, but Whitehorse newspapers are available at local stores within the village.

2.7 LAW ENFORCEMENT, COURTS AND FIRE PROTECTION

The Carmacks RCMP station is staffed with three officers (no administration staff) and is equipped with two vehicles. A new station is being built, which will be staffed by upwards of 20 personnel. There is a local Justice of the Peace and the Territorial Court circuit visits every two months. There are no correctional facilities in the local area.

Both the Little Salmon Carmacks First Nation and the Village of Carmacks have a volunteer fire fighting organization consisting of 11 volunteers which is supported by two fire suppression trucks.

2.8 HEALTH AND EDUCATION

The Carmacks Health Centre serves the Village of Carmacks and is staffed by two full-time nurses and one part-time receptionist. Emergency cases, that require the services of a doctor, are transported to Whitehorse General Hospital by ambulance.

In 1992 the Tantalus School in Carmacks had an enrolment of 94 students from kindergarten to grade 12. The student:teacher ratio was 8.5:1.

Yukon College has a campus in Carmacks which is situated in a mobile trailer. The campus plans to move into the new Little Salmon Carmacks First Nations Administration Building. The majority of classes are academic upgrading and GED with some college preparation. Additional courses

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underway are computer assisted learning and project management (construction). As of April, 1993, enrolment was 15 full time and 16 part time students.

2.9 HOUSING AND VACANCY RATE

There is a zero vacancy rate in the Village of Carmacks. Housing is at a shortage and the average price for a 128 square metre (1200 square foot) winterized bungalow averages approximately \$120,000. Based on 1986 Census information there were 80 occupied dwellings in Carmacks, 94% of these were single detached homes. Of these, 40 units were owner occupied and 40 were rented.

2.10 RECREATION

The Village of Carmacks offers many of the same outdoor activities as Whitehorse: fishing, hunting, skiing, canoeing, hiking, snowmobiling. Recreational facilities include a swimming pool (summer use only), an outdoor ice rink, a two sheet curling rink, a community hall, cross-country ski trails, a baseball diamond, a school library and gym, one tennis court, a park and playground and a campground with a dock, boat launch and 20 campsites.

3.0 LITTLE SALMON CARMACKS FIRST NATION PROFILE

3.1 INTRODUCTION

The following section provides a social profile of the Little Salmon Carmacks First Nation. It also attempts to briefly examine the opinions and concerns of the First Nation members regarding the proposed Western Copper Holdings Ltd. Williams Creek Project. An in depth discussion of the Little Salmon Carmacks First Nation history and the traditional land use of its members is presented in Appendix II.

3.2 LITTLE SALMON/CARMACKS FIRST NATION INFRASTRUCTURE

The right to vote is extended to First Nation members over 16. The Chief and Council are elected to two year terms. The last election was conducted in January 1993:

CHIEF: Eric Fairclough

COUNCILLORS: Brent Albert, Vera Charlie, Joseph O'Brien, Leta Blackjack

ELDER COUNCILLOR: Roddy Blackjack

YOUTH COUNCILLOR: Darla Skookum

FIRST NATION STAFF

First Nation Manager: Viola Mullett

First Nation Manager assistant: Velma Albert

NNADAP Workers: Joseph O'Brien (Co-ordinator)
Darlene Johnson (Assistant)

Capital Projects Manager: Maynard Wiens

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Secretary/Receptionist:	Rita Berry
Welfare Administration:	Norma Gull Lorraine O'Brien (Casual)
Community Education Co-ordinator:	Alma Wrixon
CMHC Housing Manager:	Joyce Gage
Bookkeepers:	Bernice Evans Evelyn Tisiga (Assistant)
Land Claims Workers:	Terry Billy (Co-ordinator) Johnny Sam (Researcher/Mapper) Michael Tom (Researcher/Mapper) Wilbur Smarch (Researcher/Mapper) Michael Vance (negotiator) Trudy Tom (Secretary)
Court Worker:	Elizabeth Anderson
Community Liaison Officer:	Jane Sheldon
Community Health Representative:	Mary Tulk
Janitors:	Rachael Tom Agnes Washpan Marion Skookum
Self-Government Co-ordinator Officer Trainee:	Cathy Cochrane
Economic Development Co-ordinator Officer Trainee:	Fred Blanchard
Economic Development Officer:	Tim Gooding
Health Clerk/Receptionist:	Sonya Skookum

3.3 DEMOGRAPHICS

A total of 431 beneficiaries are currently (December, 1993) registered as Little Salmon Carmacks First Nation members and 235 beneficiaries reside in the Carmacks area. Table 3.1 provides a population distribution of the Little Salmon Carmacks First Nation members. The largest age group represented is the 25-34 years sector and it constitutes 27% of the population.

3.4 EMPLOYMENT AND INCOME

3.4.1 Current Employment

Thirty-three members are currently employed at the First Nation office (on staff) (3 non-members are employed by the First Nation). In addition, 1 contractor is hired for water delivery, 1 contractor for garbage removal and 1 contractor is hired for sewage pump-out service. Various contractors are hired for maintenance.

Three members (in addition to 3 non-members) are employed at the Northern Tutchone Trading Post, including 2 part-time clerks and 1 full-time clerk. The Northern Tutchone Trading Post is owned by the Little Salmon Carmacks First Nation and is comprised of a store, which sells groceries, sundry items and crafts, a post office and a bank (CIBC). In addition, 1 member is currently employed at the Tatchun Centre Store.

Two members are currently employed at Health and Social Services (Yukon Territorial Government).

Three members are part-time instructors at the Yukon College Campus in Carmacks (includes 2 Northern Tutchone language instructors). One member is a teacher at the Tantalus School and 2 members are Northern Tutchone language instructors at the Tantalus School.

Table 3.1
Population Characteristics
(First Nation members in the Carmacks area, October 1993)

Age	Male	Female
0-4 years	14	9
5-9 years	9	9
10-14 years	9	19
15-19 years	12	12
20-24 years	11	9
25-34 years	30	21
35-44 years	16	16
45-54 years	7	7
55-64 years	8	8
65-74 years	2	4
75 years and over	2	1
Total	120	115

Seven members are currently employed in the construction of band houses, including 3 contractors and 4 additional employees. Four members are currently employed in the contract for brushing power lines and the upgrading of Freegold Road for the mine, including 1 contractor and 3 additional employees. Two members operate Berdoe Enterprises, a privately owned company which has been in operation for 9 years. The company provides services such as road construction and hauling and employs 6 members during the summer.

Tatli Wilderness Enterprises, which is owned by two First Nation members, is currently not operating. During operation, it offered trail rides to tourists. Due to lack of clients Tatli Wilderness Enterprises has ceased operation, but now operates a brushing/slashing business clearing brush for trails and roads.

Two First Nation members were employed by Western Copper Holdings Ltd. to operate the SX-EX pilot plant from September 15 to December 17, 1993.

3.4.2 Unemployment Insurance Claims

As of October 1993, thirty-three unemployment insurance claims are recorded for the village of Carmacks, including both first nation members and non-members (Canada Employment & Immigration).

3.4.3 Social Assistance

Approximately 50 Little Salmon Carmacks First Nation members are currently receiving social assistance. Approximately 16 individuals are unemployable, either due to old age or disabilities. Some recipients have not qualified for unemployment insurance because they have not accumulated the adequate number of weeks during seasonal work. The number of recipients has increased from 30 to 50 in the last 3 to 4 years.

3.5 HEALTH AND SOCIAL SERVICES

3.5.1 Health Services

The Carmacks Health Centre (Health and Welfare Canada) serves the Village of Carmacks and the Little Salmon Carmacks First Nation. It is situated in Carmacks and is staffed by two full-time nurses and one part-time receptionist. Emergency cases, that require the services of a doctor, are transported to Whitehorse General Hospital by ambulance.

3.5.2 First Nation Services

The Little Salmon/Carmacks First Nation receives and administers funds to supply First Nation members with social assistance. The First Nation has administered its own social programs for a decade. This has included In-home Adult Care, Elders Firewood, and Basic Needs Assistance.

The National Native Alcohol and Drug Addictions Program (NNADAP) began operation in Carmacks in 1982 and is run by the Little Salmon Carmacks First Nation. Two First Nation members are presently employed as NNADAP counsellors; Joseph O'Brien (co-ordinator) and Darlene Johnson (assistant). The facility is located on the north bank of the river, south-east of the Northern Tutchone Trading Post.

NNADAP workers provide counselling services to First Nation members with drug and alcohol addictions. Most receiving counselling are court ordered with very few seeking counselling on their own. Approximately ten individuals are currently involved in the program. Those requiring further treatment are sent either to the Crossroads Treatment Centre in Whitehorse, or to one of two treatment facilities in Alberta. The number of people seeking counselling has been increasing over the past several years.

The NNADAP also organizes a women's support group and a men's support group. The NNADAP facility and the First Nation band office both provide a "Safe home" for women facing violence at home. No daycare facilities are currently available.

Facilities are also provided by the First Nation for members currently awaiting a court trial. It provides an alternative to jail. Facilities are located at Airport Lake.

3.5.3 Yukon Territorial Government Services

Health & Social Services in Carmacks currently employs 7 people (includes both full-time and part-time employment) of which two are members of the Little Salmon Carmacks First Nation.

The services provided to the community of Carmacks (to both First Nation members and non-members) by Health & Social Services are as follows:

- Social assistance (approximately 25 current recipients of social assistance)
- Child protective services
- Adoptive services
- Child in care services
- Senior services
- Family services
- Emergency measures
- Fostering services
- Juvenile justice
- Administration of office
- Alcohol and Drug Services (approximately 25 people currently receiving counselling)

- Vocational rehabilitation

- Home care

Note: The First Nation issues social assistance to their own members.

3.6 UTILITIES

Water and sanitation services in the village are currently in a transition phase, from the old system of trucked water and out-houses to a new system of piped water with septic fields and proper drainage. The Little Salmon Carmacks First Nation has a communal well system that supplies water to 15-20% of the population. They operate septic fields for their houses.

A transmission line runs from the Whitehorse dam, administered by Yukon Electrical Company Ltd. There is also an auxiliary local diesel generator.

Garbage is hauled by the First Nation for its members to a community solid waste land-fill located approximately 2 km south of Carmacks that is operated jointly by the LSCFN and the Village of Carmacks.

3.7 COMMUNICATIONS

The Carmacks area receives the same radio stations as Whitehorse; CKRW (AM), CHON 98.1 (FM) and CBC FM. Television reception is limited to CBC North and Northern Native Broadcasting. There are no local newspapers published, but Whitehorse newspapers are available at local stores within the Village of Carmacks.

3.8 INFRASTRUCTURE

Road access is via the paved all-weather Klondike Highway. The unpaved all-weather Robert Campbell Highway is a second route.

Mail is trucked in three times a week. The Canadian Imperial Bank of Commerce, situated in the Northern Tutchone Trading Post, is open once a week in the summer and two times a week in the winter.

There is no regular airline service, but a year round helicopter charter company has a base in Carmacks. Greyhound Buslines service the area on its route to Dawson City. Transportation trucks and couriers that serve the Yukon Territory are available upon request.

Community infrastructure for First Nations is funded by Indian and Inuit Affairs. The Little Salmon/Carmacks First Nation receives money for operation of roads, water, sanitation, community buildings and fire protection.

3.9 LAW ENFORCEMENT AND FIRE PROTECTION

The RCMP detachment consists of three officers: a corporal, a constable and an Indian special constable, and two vehicles. There are no correctional facilities in the local area.

Fire protection consists of a fire chief and 10 volunteers with two pumper-trucks, hoses, ladders, breathing apparatus, portable pump and two 6,700-litre water tanks (one in town and one in the First Nation village).

3.10 HOUSING AND CURRENT INVENTORY OF BUILDINGS

CMHC Dwellings:	23
Band Houses:	62
(under construction)	2
Houses privately owned	2
Houses in the Bush	2
Total # of Dwellings:	91

Other Buildings:

- First Nation Office Building (includes Yukon College Campus and laundromat)
- Heritage Hall
- NNADAP Centre
- Previous Yukon College Building (possibly for use as Day Care centre in the future)
- Previous First Nation Office Building (possibly will be demolished or used as youth centre in the future)
- garages (2)
- watershed (1)
- Northern Tutchone Trading Post (building is not on crown land, but is owned by the First Nation); houses a store, a post office and a bank (CIBC)
- Buildings at Airport Lake (a kitchen and 3 cabins)

3.11 EDUCATION

Currently, less than 10% of the First Nation members have a Grade 12 diploma and less than 10% have pursued a post secondary education.

Those individuals who have gone on to post secondary education have pursued studies in the areas of renewable resources, commerce and teaching.

The Tantalus School includes kindergarten through to grade 12. Approximately 52% of the current enrollment (K-Gr. 12; as of December 7, 1993) is First Nation members. Of the 4 students in Gr. 12, 3 are First Nation members.

The Yukon College campus is located in the First Nation office building and has been in operation in the Carmacks area for 7 or 8 years. Forty First Nation members are currently enrolled, including 10 full-time students in the development studies program and 6 full-time students in a three-week mill operation course.

The mill operator course was offered at the college in Fall 1993. The mill operator course introduced the students to the position of mill operator in a copper extraction mill. Six individuals enrolled and successfully completed the course. Western Copper Holdings Ltd. supported the initiative to provide mill operator training. There are plans to offer further practical courses such as mine pre-production training (3 weeks) in the near future.

3.12 LANDS

The Traditional area of the Little Salmon Carmacks First Nation is 22478.6 sq km (8679 sq mi). The quantum interim selected miles are 2590 sq. km (1000 sq. mi). This area has been temporarily designated as claimed land, but is currently under review as to whether it qualifies as category A or B settlement lands. The land claims map (Fig. 3.1) shows a number of coloured blocks "R Blocks." These are rural land selections which are separated into two categories:

- Category A Settlement Land - surface & subsurface rights
- Category B Settlement Land - surface rights

"R Blocks" are presently under the review process.

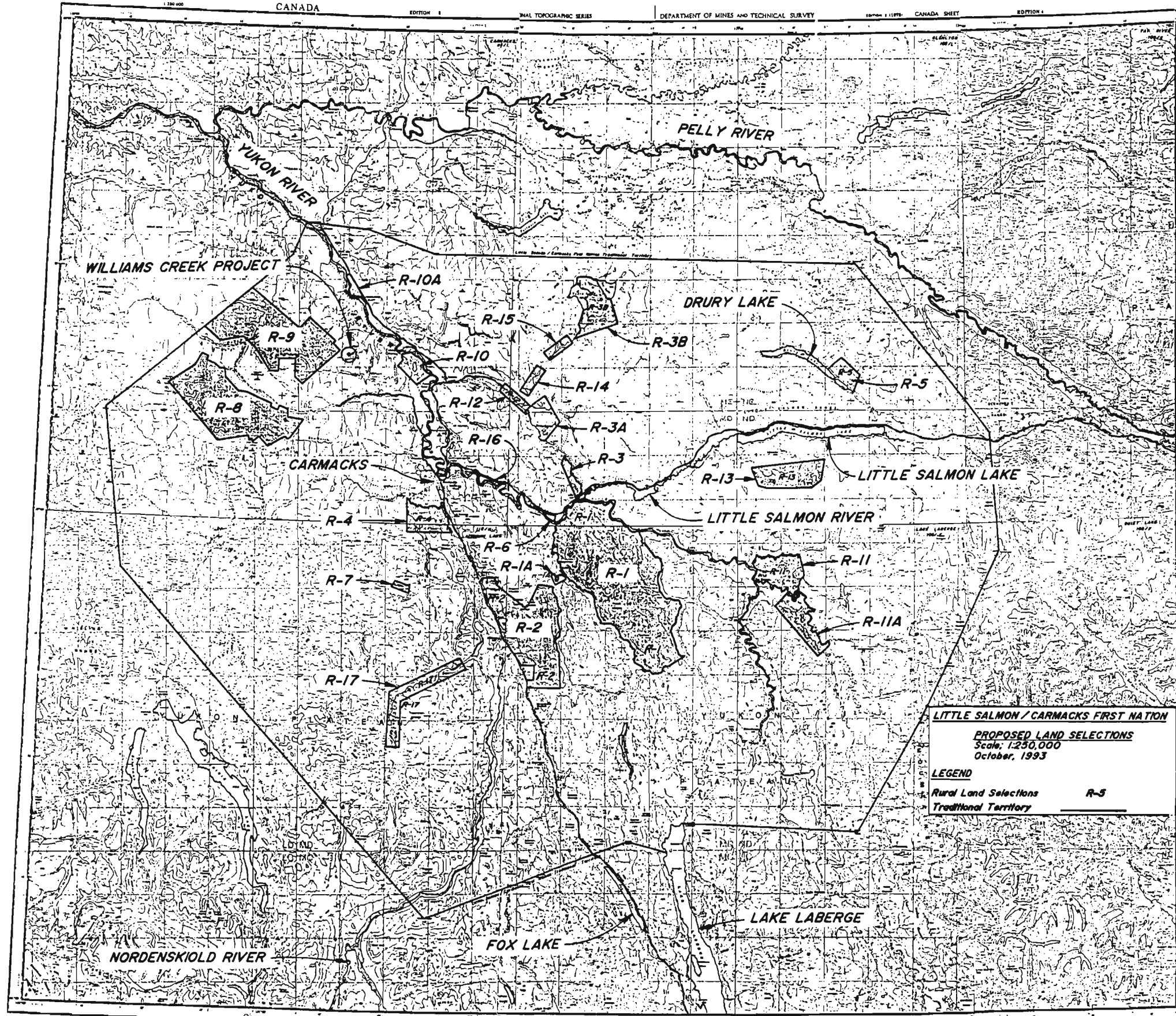
3.13 OPINIONS/CONCERNS REGARDING THE EFFECTS OF THE WILLIAMS CREEK COPPER OXIDE PROJECT ON THE LITTLE SALMON CARMACKS FIRST NATION

A number of Little Salmon Carmacks First Nation Members and several other residents of the Carmacks community were interviewed regarding their opinions/concerns about the Williams Creek Copper Oxide Project. They were asked how they felt the proposed project would affect the Little Salmon Carmacks First Nation. Some of those opinions are given below.

The following individuals participated in the interview:

Paul Taylor (Yukon College)

WESTERN COPPER HOLDINGS LTD.
WILLIAMS CREEK PROJECT
LITTLE SALMON CARMACKS FIRST NATION LAND CLAIMS



LITTLE SALMON / CARMACKS FIRST NATION
PROPOSED LAND SELECTIONS
 Scale: 1:250,000
 October, 1993

LEGEND
 Rural Land Selections R-5
 Traditional Territory

CAD FILE: \PROJECT\1000\W1811\25181.Plot 1-1

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Darlene Johnson (NNADAP)
Joseph O'Brien (NNADAP)
Tim Gooding (First Nation Staff)
Viola Mullet (First Nation Staff)
Jane Jack (Village Office)
Clyde Blackjack
Joyce Gage
Health & Welfare - Health Centre
R.C.M.P.

The Yukon College is interested in working with Western Copper Holdings Ltd. in order to prepare further training programs such as the mill operator course which will provide specific training programs. It is hoped that the company will work with the college and pass on information which would assist in this regard.

Many individuals felt that there are both positive and negative aspects of the proposed Williams Creek project. On the one hand, it could provide an opportunity for Carmacks to grow. There are few opportunities for employment in Carmacks and the mine could provide employment opportunities for those currently without work. On the other hand, the influx of new people (miners & their families) could have a negative effect on the Little Salmon Carmacks First Nation people. They feel that the First Nation community is in the process of healing and that the influx of new people (miners) may disrupt the advances that have been made. There are many severe social problems already in the native community such as alcohol and drug abuse. In a mining community more alcohol and drugs may become available. Several people were also concerned about the influence of single males (working at mine and living in community) on young girls with low self esteem (unwanted pregnancies).

Several individuals expressed the desire for a more in-depth study completed on the social impacts of the mining project on the First Nation community.

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WILLIAMS CREEK COPPER OXIDE PROJECT

One individual interviewed expressed concerns about the environment. He has worked previously in several mines and observed that the mine sites were left in poor condition after closure. He feels that abandoned mines should be cleaned up and that waste materials should be removed and that the site should be revegetated. He indicated that most elders are concerned about the effects of a mine on the environment and are often concerned about chemicals escaping into the environment. He also voiced some concern about animals affected by the mining operation (i.e. the animals would move out of the area).

Health and Welfare Canada were concerned about increased alcohol and drug abuse and increased violence (e.g. rape, unwanted pregnancies). They were apprehensive about additional health needs of new people in community as well as occupational health & safety (i.e. accidents, injuries at mine site) and felt that additional staff would be required.

The RCMP voiced concern about the increase in the law enforcement workload with influx of people to the community. They feel that they will probably require an increased staff as they are currently dealing with over 500 complaints per year.

Several individuals were enthused by the prospect of a local mining operation and were very interested in the opportunities for employment.

Throughout the development of the proposed Williams Creek Copper Oxide Project, Western Copper Holdings Ltd. has endeavoured to maintain a cooperative and interactive association with the Little Salmon Carmacks First Nation. A partial list of the consultations between individuals involved in the project and the First Nation are presented in Appendix III.

4.0 SOCIOECONOMIC IMPACT ASSESSMENT

Based on the evaluation of existing socioeconomic conditions within the communities of Whitehorse and Carmacks provided in Sections 1.0 and 2.0, the following section addresses the socioeconomic implications of the Williams Creek Copper Oxide Project.

As a relatively large, well established community, and a contemporary regional centre for the Yukon, Whitehorse, located approximately 250 km to the southeast of the Williams Creek Project area, has sufficient infrastructure to absorb any impacts that are expected to arise from the proposed mining development. Carmacks, located approximately 38 km southwest of the project area is significantly smaller, and consequently the impacts would be proportionately greater.

Until recently, the mining industry provided a major economic base for the communities of Whitehorse, Faro and Watson Lake. With recent industry closures the remaining mining operations in Yukon are limited to placer mining, which seasonally employs approximately 700 people and provides the Yukon Territory with \$25 million annually (Yukon Chamber of Mines, 1993). Comparably, hardrock mining produced \$214 million of revenue in 1990. The mining industry provides a significant contribution to both the regional economy and the well-being of these communities. The economic benefits of the Williams Creek Project would include export earnings, direct and indirect/induced employment, contracting opportunities and revenue to municipal, territorial and federal governments.

4.1 EMPLOYMENT AND LABOUR FORCE

The preliminary manpower requirements for the Williams Creek copper mine and the processing plant are presented in Tables 4.1 to 4.5, respectively. Labour estimates are based on a 12 hour shift, four-day on/four-day off schedule. During the first year of mining, operations are expected to require a total of 90 people; 53 people engaged in mine production and a further 37 associated with the processing plant. The number of employees is expected to increase each year until it reaches a peak in year eight of production at which time operations will require approximately 136 people.

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Indirect jobs will result from expenditures on goods and services such as transportation, explosives, drilling and camp services. Induced jobs (those created by a demand for goods and services by direct and indirect employment of the mine) will encompass a broad spectrum of modern economic necessities, ranging from government services to consumer goods. The B.C. Mining Association (Annual Report, 1991) estimates that each direct job in mining results in one an additional job within the territory (or province) and another job within Canada. Based on this assessment, 136 mining jobs associated with the Williams Creek Project will produce an additional 272 indirect/induced jobs within the country, 136 of those in the Yukon. This figure does not include employment created as a result of exploration and construction. The total potential direct, indirect and induced employment created by the Williams Creek Copper Oxide Project will be approximately 408 jobs.

Current unemployment rates for Whitehorse and Carmacks (sections 1.4 and 2.3) indicate that there is a surplus of people seeking employment. Due to the recent mining industry closures in the Yukon and northern B.C., approximately 800 people with some mining related training and experience are available for employment. In addition, several transport companies involved with the transport of ore and mining supplies have reduced their employment roles. Combined, as many as 1,000 people associated with the mining industry are currently unemployed. Thus, the required complement of staff for the Williams Creek Copper Oxide Project could be filled entirely from within the Yukon labour force.

Whitehorse and Carmacks are expected to be the primary sources of skilled workers for the Williams Creek Project. It is expected that there will be substantial relocation of Yukon populace due to current mine shutdowns in the Faro and Watson Lake areas. Some of these individuals, notably contractors, are expected to relocate in or near Whitehorse and find employment in other industry sectors. When the Williams Creek Project begins construction and, subsequent mine production, it is probable that some individuals will wish to leave their jobs in other industries to seek employment at the mine. At that time an equivalent number of replacement employees will have to be recruited from current unemployment roles or elsewhere from within the Yukon to fill the vacancies created. Many of these individuals may be recruited from current unemployment roles, with skill upgrading.

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Table 4.1

Williams Creek Copper Oxide Project

Projected Manpower Requirements for the Proposed Williams Creek Copper Oxide Project- Mine, Year 1 (Subject to Revision)

Persons	Total No.	Rate (\$1000/Year)	Year Cost (X \$1000)
Manager	1	90	90
Mine & MNTC Supervisor	1	75	75
Mine/Crusher Foreman*	4	40	160
Loader Operators*	4	33	132
Mine Geologist	1	45	45
Dozer Grader*	4	33	132
Drillers*	2	33	66
Blasters*	2	33	66
Truck Drivers*	12	33	396
Utility Truck Driver*	2	33	66
Mechanics Welders*	8	36	288
Lube/Service*	2	33	66
Helpers (6 MT)	4	25	100
Surveyor	1	45	45
Draftsman	1	45	45
Crusher Operators*	4	33	132
TOTAL	53		2437 (Including 28% Fringe Benefits)

* work for 8 months out of 12.

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Table 4.2

Williams Creek Copper Oxide Project

Projected Manpower Requirements for the Proposed Williams Creek Copper Oxide Project- Mine, Year 2-3 (Subject to Revision)

Persons	Total No.	Rate (\$1000/Year)	Year Cost (X \$1000)
Manager	1	90	90
Mine & MNTC Supervisor	1	75	75
Mine/Crusher Foreman*	4	40	160
Loader Operators*	6	33	198
Mine Geologist	1	45	45
Dozer Grader*	4	33	132
Drillers*	4	33	132
Blasters*	2	33	66
Truck Drivers*	20	33	660
Utility Truck Driver*	2	33	66
Mechanics Welders*	12	36	432
Lube/Service*	2	33	66
Helpers (6 MT)	4	25	100
Surveyor	1	45	45
Draftsman	1	45	45
Crusher Operators*	4	33	132
TOTAL	69		3128 (Including 28% Fringe Benefits)

* work for 8 months out of 12.

WILLIAMS CREEK COPPER OXIDE PROJECT

Table 4.3

Williams Creek Copper Oxide Project

Projected Manpower Requirements for the Proposed Williams Creek Copper Oxide Project- Mine, Year 4-6 (Subject to Revision)

Persons	Total No.	Rate (\$1000/Year)	Year Cost (X \$1000)
Manager	1	90	90
Mine & MNTC Supervisor	1	75	75
Mine/Crusher Foreman*	4	40	160
Loader Operators*	8	33	264
Mine Geologist	1	45	45
Dozer Grader*	4	33	132
Drillers*	6	33	198
Blasters*	2	33	66
Truck Drivers*	36	33	1188
Utility Truck Driver*	2	33	66
Mechanics Welders*	16	36	576
Lube/Service*	4	33	132
Helpers (6 MT)	4	25	100
Surveyor	1	45	45
Draftsman	1	45	45
Crusher Operators*	4	33	132
TOTAL	95		4242 (Including 28% Fringe Benefits)

* work for 8 months out of 12.

WILLIAMS CREEK COPPER OXIDE PROJECT

Table 4.4

Williams Creek Copper Oxide Project

Projected Manpower Requirements for the Proposed Williams Creek Copper Oxide Project- Mine, Year 7-8 (Subject to Revision)

Persons	Total No.	Rate (\$1000/Year)	Year Cost (X \$1000)
Manager	1	90	90
Mine & MNTC Supervisor	1	75	75
Mine/Crusher Foreman*	4	40	160
Loader Operators*	8	33	264
Mine Geologist	1	45	45
Dozer Grader*	4	33	132
Drillers*	6	33	198
Blasters*	2	33	66
Truck Drivers*	40	33	1320
Utility Truck Driver*	2	33	66
Mechanics Welders*	16	36	576
Lube/Service*	4	33	132
Helpers (6 MT)	4	25	100
Surveyor	1	45	45
Draftsman	1	45	45
Crusher Operators*	4	33	132
TOTAL	99		4411 (Including 28% Fringe Benefits)

* work for 8 months out of 12.

WILLIAMS CREEK COPPER OXIDE PROJECT

Table 4.5

Williams Creek Copper Oxide Project

**Projected Manpower Requirements for the Proposed
Williams Creek Copper Oxide Project- Processing Plant (Subject to Revision)**

Persons	Total No.	Rate (\$1000/Year)	Year Cost (X \$1000)
SX/EW Supervisor	1	75	75
SX/EW Acid Foreman	4	50	200
SX Operators	4	45	180
EW Operators	4	45	180
EW/Heap Helpers	4	36	144
Chemist	1	55	55
Lab Technician	4	45	180
Maintenance/Electrical	4	45	180
Accountant	1	45	45
Purchasing	1	50	50
Warehouse	1	45	45
Secretary	4	30	120
Acid Plant	4	45	180
TOTAL	37		1634
TOTAL FOR 9 YEARS			44947

4.2 POPULATION

Assuming that 48% (133) of the direct and indirect jobs created by the Williams Creek Project will be filled by residents of Whitehorse and Carmacks, 52% (139 jobs) are expected to be filled by workers recruited from other Yukon communities. Since it is expected that the entire workforce can be filled by residents of the Yukon, the impact of the Williams Creek Project on the total population of the Yukon is expected to be minor. However, it is expected that because a vast majority of the work force required for the project will reside in Whitehorse and Carmacks, impacts to these two communities, particularly Carmacks, will be significantly greater.

4.2.1 Carmacks

Of the 136 direct jobs created by the Williams Creek Project approximately 60% (82 jobs) of those are expected to be filled by people residing in or moving to Carmacks. Based on current data it is assumed for this analysis that 100% of the unemployed residents (18) and approximately 40% of those individuals receiving social assistance (20) could be employed by this project. The remaining 44 jobs would be filled by people moving into Carmacks in response to job opportunities.

For the purposes of this analysis it is assumed that of the 44 people moving into Carmacks in response to direct jobs opportunities created by the Williams Creek Project, 20% of the jobs (9) will be filled by singles and the remaining 80% of the jobs (35) will be filled by people with families. It is assumed that a family comprises on average 3.7 persons and that approximately 80% of the families will have one-wage earner and the remainder will have two-wage earners. On this basis, the number of people moving to Carmacks in response to the Williams Creek Project will be: 9 singles, 27 single-income families and 4 double-income families, resulting in a population growth of 124 people. Of the total estimated population increase 53 will be children; 15 of pre-school age and 38 from grades one to twelve.

4.2.2 Whitehorse

It is expected that the remaining 54 direct jobs and all 136 indirect jobs created within the territory would be filled by Whitehorse residents as the city is the main industrial service centre for the area. For this analysis, it is assumed that 50% of the direct/indirect jobs (95) taken by people living in Whitehorse will be filled by individuals currently residing in the city and the remainder (95) will be filled by people moving into the city.

For the purposes of this analysis it is assumed that of the people moving into Whitehorse in response to job opportunities created by the Williams Creek Project (both direct and indirect), 20% of the jobs (19) will be filled by singles and the remaining 80% of the jobs (76) will be filled by people with families. On the basis of normal distribution approximately 30% of the families will have one wage earner and the remainder will have two wage earners. On this basis, the number of people moving to Whitehorse in response to the Williams Creek Copper Oxide Project would be: 19 singles, 22 one-income families and 27 two-income families, resulting in a population growth of 200 people distributed throughout the municipality. Of the total estimated population increase 83 will be children; 23 of pre-school age and 60 from grades one to twelve.

4.3 HOUSING AND REAL ESTATE

It is anticipated that after production begins the existing 100 man construction camp at the Williams Creek Project will be removed. Currently, there are no plans to house workers at the mine site. Individuals employed by the mine will likely reside in Whitehorse or Carmacks and will be transported by bus from Carmacks to the mine site.

4.3.1 Carmacks

Based on current data there is presently a zero vacancy rate in Carmacks (Section 2.10). Based on the calculated increase in population of 124 people; 9 singles, 27 one-income families and 4 two-income families, 40 dwellings would be required to house the influx of people into Carmacks. The population growth within Carmacks will be gradual and will increase in response to the labour

WILLIAMS CREEK COPPER OXIDE PROJECT

requirements at the mine. Thus, the construction of the required houses can occur over several years. Although the establishment of a trailer park in the vicinity would allow for the immediate provision of needed housing, pressures on housing and real estate prices is expected to be pronounced if not acute during the initial years of operation.

4.3.2 Whitehorse

The proposed influx of 200 people in the city of Whitehorse will result in the need for 68 dwellings. Currently, the vacancy rate of rental units in Whitehorse is low (2.8%), but residential building permits in the Whitehorse area for the second quarter of 1992 had increased by 30% over those issued in 1991. In addition, the seven trailer/mobile home parks within the municipality offer extensive expansion for semi-permanent housing. Consequently, impacts on housing in Whitehorse is expected to be minimal.

4.4 COMMUNITY INFRASTRUCTURE AND SERVICES

Apart from the impact on housing and associated services such as public works (ie. sewage treatment, water supply, refuse disposal) the main impacts on the municipality of Whitehorse due to an increase in the population will be social services.

4.4.1 Carmacks

A projected increase of 124 people in the Village of Carmacks will result in a population increase of 21.6%. Accordingly, fire protection, school facilities, health and welfare services will require adjustments to accommodate this increase.

An influx of 38 students into the Tantalus School would result in a 28.8% increase in school enrolment. If the existing student teacher ratio of 8.5:1 is to be maintained, a further five teachers must be employed. If no additional teaching staff is hired the student/teacher ratio would become 12:1.

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Similarly, the increase in population will result in the need for further law enforcement. Carmacks residents and Little Salmon Carmacks First Nation members are concerned that an increase in alcohol consumption in the community and a misuse of wages on both alcohol and drugs may occur. Many individuals have expressed a concern that the crime rate would increase when workers leave camp and return to Carmacks for leisure activities. More cash, more young immigrants and increased use of drugs and alcohol may all lead to an increase in crime. The enlargement of the existing RCMP station to accommodate 20 personnel is opportune.

The existing health services in the Village of Carmacks would require enlargement. The health centre would accommodate the increased population by hiring an on-site doctor and a full-time receptionist.

The existing sewage treatment in Carmacks currently functions at 75% to accommodate its current population. With the proposed increase in population the system would be required to function at near (96%) capacity.

4.4.3 Whitehorse

The projected influx of 200 people into Whitehorse will result in a 0.9% increase in the city's total population. Police and fire protection, school facilities, municipal, health and welfare services will likely not be affected by this increase.

Whitehorse is a well established planned, community, and as such, will have an adequate degree of infrastructure to absorb the potential impacts associated with this small increase in population. With the recent construction of an extended care facility, and two new elementary schools, Whitehorse has already reinforced its infrastructure. The current review of the municipality's sewage system is also very timely.

If the anticipated increase in population results in the in-migration of 83 children (60 individuals from grade 1 to grade 12) this will result in a 1.5% increase in school enrolment. To maintain the teacher:student ratio of 1:15 an additional four teachers will be required, evenly distributed

between grades 1 and 12. Without additional teaching staff the teacher:student ratio would become 1:15.2.

4.5 SOCIAL IMPACTS

The Williams Creek project will undoubtedly have an impact upon the Little Salmon Carmacks First Nation way of life. Some of the changes will include the acquisition of new skills, establishing new careers and achieving personal success through opportunities associated with the mine. From the acquisition of new skills and experience will come access to career opportunities at other mines and industries in the Yukon Territory and throughout Canada. In order to ensure that the benefits of the Williams Creek project are experienced by the community of Carmacks and the Little Salmon Carmacks First Nation, Western Copper Holdings Ltd. is committed to the following course of action:

- Provide opportunities for employment at the mine to members of the First Nation
- Provide members of the First Nation with opportunities for supplying services to the project on contract, both during construction and during operations.
- Work closely with the First Nation community to help individuals prepare themselves by training, including apprenticeships, to qualify for employment at the mine
- Continue to build a strong business relationship with the Little Salmon Carmacks First Nation throughout the life of the Williams Creek project

Certain other changes will be difficult to document but should be recognised as potential stress on the community. Several social problems such as chemical dependency and violent crimes exist in the community and the proposed development may aggravate them. The Little Salmon Carmacks First Nation members acknowledge that these problems exist in their community. The young people, particularly males, seem to be at the highest risk. In recent years there has been an increasing demand for counselling through the National Native Alcohol and Drug Addictions

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Program. This trend is expected to continue which will result in the need for additional counselling personnel.

Also, there may be a disruption of family life, as one or both parents will be away from home for at least twelve hours a day, four days a week. This will result in a need for daycare services in the community. Some of the approaches which might be taken to deal with the afore mentioned social problems are to:

- Facilitate the appropriate daycare services.
- Organize financial management workshops.
- Review and amend all chemical dependency programs to reflect the changing demands of the community.
- Promote community development through such resources as a youth drop-in centre, crisis lines and family life improvement programs.
- Support parenting classes and workshops for single parents.
- Support community athletic programs.

Other possible mitigative measures include: encouragement of seminars in time, money and stress management, cultural awareness workshops, and the promotion of scholarship programs to serve as incentives for students interested in pursuing post-secondary education.

4.6 REVENUE AND EXPENSES

4.6.1 Revenue

The Williams Creek copper oxide deposit contains 11.4 million tonnes of mineable reserves with an average grade of 1.15% copper. At an average production rate of 1.657 million tonnes of diluted ore per year the mine will be in operation for nine years. The predicted average annual copper production is estimated at 27,279,000 lbs. The net smelter return for the project has been estimated at \$307 million, which will enter the Canadian economy as new wealth.

4.6.2 Capital and Operating Costs

The following estimates are based on capital and operating costs from the pre-feasibility study that was completed in May 1993. Feasibility study numbers may vary.

To date capital costs have been estimated at \$43.3 million (Table 4.6). The total amount expended to date in pre-production costs for exploration, pilot plant and feasibility studies has been approximately \$3.2 million (Table 4.7).

The proposed Williams Creek Project will result in the direct employment of 136 people. Based on values from Tables 4.1 to 4.5 it is estimated that direct industry salaries and benefits will average of \$5.2 million annually, totalling \$47.1 million over a nine year mine life.

The average annual expenditures for the proposed project's supplies and services are estimated at \$15.2 million, totalling \$136.8 million over nine years. An additional \$76.7 in administration costs covering depreciation, amortization, interest on long-term debt, etc. are projected over the mine life (Table 4.7).

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Table 4.6

Williams Creek Copper Oxide Project

Capital Expenditures for the Williams Creek Copper Oxide Project

Capital Costs:	Mining equipment	4,090,000
	Crushing equipment	1,344,000
	SX-EW Plant	8,636,000
	Acid Plant	11,625,000
	Miscellaneous	12,056,000
	EPCM + Contingency	5,587,000
	Total	43,338,000

4.7 DIRECT AND INDIRECT INCOME

Total salaries from direct employment (136) are estimated at \$5.2 million annually, resulting in \$47.1 million over the life of the project. Individual salaries for indirect and induced (272) employment are estimated at \$35,000 per annum, totalling \$85.7 million over nine years.

On this basis, the Williams Creek Project is expected to generate a total of 408 jobs and \$132.8 million in direct and indirect salaries over the mine life of nine years.

4.8 PROCUREMENT OF GOODS AND SERVICES

During the construction of the mine site it is estimated that 10% of the capital costs (\$4.3 million) and 30% of the pre-production costs of the project (approximately \$1 million) would be introduced into the local economy as a result of the acquisition of services and supplies, primarily labour, contracting and materials.

During operations, the proposed project is expected to contribute \$89.9 million to the Yukon economy (\$47.1 million from direct jobs and \$42.8 million from indirect/induced jobs), plus another \$42.8 million to Canada in the form of indirect job wages. Although approximately 50% of the total income is absorbed in combined federal, income, sales and property taxes, these monies will return to the community in the form of community services. Most of the annual operating costs such as consumables and supplies, and fuel and power will be accrued to the territorial economy, and a portion will be returned to the municipalities of Whitehorse and Carmacks in the form of maintenance of services (ie. NorthwesTel, Yukon Energy Corporation, City of Whitehorse Public Works, Village of Carmacks).

Combined, the proposed Williams Creek Project is expected to result in an increase in expendable income directed to the purchase of local goods and services. This, in turn, is expected to result in an immense net benefit to the commercial, business and service sectors of the municipalities of Whitehorse and Carmacks.

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Table 4.7

Williams Creek Copper Oxide Project

PROJECTED REVENUE AND EXPENSES (For 9 Years of Production)

	(\$ million)
GROSS REVENUE	306.9
COSTS	
Preproduction Costs	2.2
Feasibility and Pilot Plant	1.0
	—
Total Preproduction Costs	3.2
Production Costs:	
Salaries	47.1
Supplies and Services	136.8
	—
Total Production Costs	183.9
Administration	
Depreciation	
Exploration Expenditures	
Interest on Long-Term Debt	
Write Down of Mining Fixed Assets	
Other Expenditures	
	—
Total Administration Costs	76.7
TOTAL PREPRODUCTION AND PRODUCTION COSTS	263.8
NET REVENUE	43.1

Hallam Knight Piesold Ltd.

4.9 TAX REVENUES

4.9.1 Preproduction Tax Revenues

To date, preproduction costs and committed expenditures have totalled approximately \$3.2 million. Based on an estimated division of 10% being salaries and 90% being services obtained primarily from the territory, exploration taxes have been calculated at \$0.1 million. Taxes for the construction and opening of the Williams Creek Project, including engineering and design, contractors, equipment and materials, has been estimated at \$0.3 million. Total preproduction taxes have been estimated at \$0.4 million (Table 4.8) accruing to the provincial and federal governments during the exploration and construction periods.

4.9.2 Production Tax Revenues

Direct employment created by the Williams Creek Project will generate a total of \$16.5 million in personal taxes to be paid to the territorial and federal governments. Additionally, taxes derived from the project's required supplies and services will total approximately \$17.8 million over the nine years of operation. Other direct production taxes, including Federal, Yukon and Mining Taxes, are estimated at \$29.9 million, resulting in a total of \$64.2 million in revenue accruing to federal, territorial and municipal coffers.

Indirect taxes arising from indirect/induced job income tax, dividend tax and others total \$36.8 million, and will go to both levels of government. In total, the Williams Creek Copper Oxide Project will generate approximately \$101.4 million in tax revenues during exploration, construction and production.

WILLIAMS CREEK COPPER OXIDE PROJECT

Table 4.8

Williams Creek Copper Oxide Project

**PROJECTED TAXES TO FEDERAL, TERRITORIAL
AND MUNICIPAL GOVERNMENTS
(For 9 Years of Production)**

PREPRODUCTION TAXES	(\$ millions)
Exploration: Including Exploration Camp, Drilling, Feasibility, Environmental Studies, Supplies, Services and Transportation	0.1
Construction: Including Engineering & Design, Contractors Equipment and Materials	0.3
Total Preproduction Taxes	0.4
PRODUCTION TAXES	
Direct Taxes	
Salaries	16.5
Supplies and Services	17.8
Net Taxes, Federal, Yukon, Mining	29.9
Total Direct Taxes	64.2
Indirect Taxes	
Shareholders	7.8
Indirect and Induced Salaries	25.7
Spin-off Contracts and Services	3.3
Total Indirect Taxes	36.8
Total Direct and Indirect Taxes	101.0
TOTAL TAX REVENUES (Preproduction and Production)	101.4

APPENDIX I

WILLIAMS CREEK COPPER OXIDE PROJECT

MINTO LANDING

Minto Landing, located approximately 45 kilometres north of Carmacks on the Klondike Highway, was established in 1953 when Fort Selkirk closed. Residents of Fort Selkirk then moved to Minto. This location is not a heritage site, but some buildings exist which have heritage significance. The Selkirk First Nations have the area under land claim selection: mostly "S" blocks (individuals), but areas of community use may also exist ("R" block). The Selkirk First Nations also have the area from Minto to midway along the Yukon River under land claim selection. The Little Salmon Carmacks First Nation also have some land claim selection in the area, mostly through intermarriage between First Nations.

The Selkirk First Nations use Minto as a fish camp and assembly site. Residents may be present throughout the summer and fall. There are no permanent residents in Minto Landing, but seven or eight private lots exist. Minto has a government camp-ground which consists of approximately 50 sites with basic facilities. A commercial camp-ground, Minto Resort, is owned and operated by the chief of the Selkirk First Nations and is located within the land claim selection sites. A private hostel has also been located there for several years and, in the future, could become a residential hostel.

PELTY CROSSING

Pelly Crossing is located where the Klondike Highway crosses the Pelly River, 108 kilometres north of Carmacks. Pelly Crossing is the home of the Selkirk First Nation and has a population of more than 250 people. Facilities run by the members of the Selkirk First Nation include a campground, the Fort Selkirk Trading Post, the Selkirk Store and the Pelly River Garage. Pelly Crossing also has a community swimming pool and offers the services of a health centre. A Yukon College campus located in Pelly Crossing offers a variety of courses.

APPENDIX II

APPENDIX II

Excerpts from "Study of Culture and Land Use for the Little Salmon Carmacks Band"

R.M. Gotthardt, January 1986

LAND USE AND SETTLEMENT PATTERNS

According to Robert Campbell's Journal, written during the brief tenure of the Hudson's Bay Company at Fort Selkirk, the local groups trading at Fort Selkirk in the mid-Nineteenth Century included Knife Indians, Tuhin tatin-nat, Lewes River Indians or 'Wood Indians,' Ayans and a group from 'far inland,' which he does not name.

The Indians of the Lewes River included all groups from Hutshi Lake, Tatchun Lake, Frenchman Lake, the lower Pelly River and the Fort Selkirk area to approximately 20 - 30 km downstream of the fort. Campbell mentions that there are several 'chiefs' among the Indians of the Lewes River, which would seem to indicate that several local groups or bands in fact comprised the Lewes River Indians. Fish camps of this group during Campbell's time were located several miles below Selkirk and on the Pelly River, between the Macmillan and Yukon (Lewes) Rivers. According to Campbell, the Lewes River Indians winter to the south of Fort Selkirk.

The Ayan described by Campbell were apparently Han from further downstream on the Yukon River. Their territory probably extended from the mouth of the Stewart River over to the White River and including Sixty Mile River. These people also traded at Ft. Yukon, which was located in their territory.

The Tuhin Tatin-nat were the people of Lake Tatmain, whose lands included the lower Macmillan River and the middle Pelly River between Rose Mountain and the mouth of the Macmillan River. Legros (1981:170) has suggested that this group may have occupied the Drury Lake and Little Salmon areas as well. In his journal, Campbell refers to frequent visits between the Tuhin Tatin-nat and the Knife Indians, and Stewart River groups.

The Stewart River Indians occupied the lower Stewart River and the area of Frances, Ethel and Reid Lakes. These people apparently traded only through intermediaries with Fort Selkirk (either Métis from the fort or Tuhin Tatin-nat).

The Knife Indians occupied the Ross River area and the middle Pelly River. According to McDonnell (1975:379-386) these people are ancestral to some Kasini presently at Ross River. The Knife Indians traded at Fort Selkirk and Pelly Banks.

Only three individuals from the 'tribe from far inland' came to Fort Selkirk in the mid-Nineteenth Century. According to Campbell, they found the prices paid by the Hudson's Bay Company too low and were apparently used to better exchange for their furs. Legros (1982:173) suspects that these people might have come from the Donjek and Nisling River areas, or Dezdeash where they habitually traded with Tlingit from the coast.

Some 20 to 30 years later, after the pillage of Fort Selkirk by the Chilkat, the homeland of the Northern Tutchone was visited again by Whites: Schwatka (1885, 1893) for the purposes of a reconnaissance for the U.S. military, and Dawson, a Canadian geologist (1889, 1898) engaged in mapping and exploration. Schwatka identified two groups along the Yukon River: the Tahk-Heesh, who were the people residing between the Tlingit on the coast and the village of Kitl-ah'-gon (present day Minto); and the Ayans, which comprised Campbell's Tuhin tatin-nat, Knife Indians and the people of the upper Pelly River. ('Tahk-heesh' is a Chilkat name for any interior Indians). Schwatka estimated that there were probably no more than 50 people in the Tahk-heesh 'tribe.' In his 1893 report, Schwatka describes Kitl-ah'-gon as the main village of the Tatlmoin Lake band. The village of the A-yan, according to Schwatka, was Kah-tung, located twelve miles downstream from the mouth of the Pelly River. It was here that Schwatka saw about 150 - 200 people salmon fishing together. The name of the chief of this group is given by Schwatka as Kon-itl, who was at that time an old man. The Han, or Campbell's Ayan, are called Tahk-ong or Takon by Schwatka. The group in the lower Stewart River, Schwatka call the Netch-on'dees (Schwatka 1885; 1893).

Dawson's description of the group along the Yukon River differs somewhat, but like Schwatka, he identifies two groups in Campbell's 'Indians of the Lewes River' or Wood Indians: the Klo-a-tsul-tshik' (Schwatka's Ayans) and the people of the lower Stewart River, To-tshik-o-tin (Schwatka's Netch-on'dees) (1889).

Legros (1981:192) was told by a woman from Little Salmon of 11 'original' groups in the period between 1890 and 1920. These groups were all interconnected by kinship ties and exchange networks. According to this informant, the groups were centred around Tatchun Lake, Little Salmon, Big Salmon, Braeburn Lake, Hutshi Lake, Aishihik Lake, White River, the middle Stewart River, the lower Macmillan River, Tatlmoin Lake and Fort Selkirk. Legros has estimated

that in the past, each regional grouping or band of the Northern Tutchone was comprised of about 100 persons, subdivided into about 4 - 6 local groups. Each local group in turn was comprised of 2 - 10 families (parents and children) (1981:1). The following is a description of the groups as told to Legros (1981: 192-206).

Tatchun Lake

For these people *Tačan-gió-huč' an* - 'see salmon's backs in shallow water people'), Tatchun Lake was their primary salmon fishing camp. A few families also fished at the mouth of the Nordenskiöld River and on the southern part of Tadru Lake, which borders the territory of the Tatmain group. For moose and caribou hunting and for trapping, the Tatchun people generally travelled north to the hills separating Tatchun and Tatmain Lake, and west to the Dawson Mountains. The Tatchun groups was once one of the largest and most powerful groups. By the turn of the century, however, only a few families remained. Now most of these people live in Carmacks.

Little Salmon

Little Salmon people (*tan'-sie'gio' huč' an* - lots of fish people) had their main fish camp on the Little Salmon River, about 2 km above its mouth. Their 'meeting' place was at the mouth of the Little Salmon River. The Little Salmon people used a vast territory for hunting and trapping, from the Mandan Lakes in the south up to Tay River in the north (source of pyrite). In earlier times, they also used part of the lower Macmillan drainage, and their territory on the middle Pelly River bordered that of the Tatmain people of the lower Pelly (Sheldon 1911: 92). Little Salmon people now live in Carmacks. Close ties existed between Little Salmon and Big Salmon people.

Big Salmon

The Big Salmon people (*gio'-čo-ču-' huč' an* - salmon big water people) occupied the major part of the basin of the Big Salmon River, the area of the mouth of the Teslin River, and apparently also the extreme north end of Lake Laberge. Their main 'meeting' place was at the mouth of the Big Salmon River. Most of the Big Salmon people now live in Whitehorse.

Braeburn Lake

These people were called '*tatla-učo-huč' an* (end of lake big people) and occupied the lands around Braeburn Lake. The entire group was wiped out by an epidemic in 1902. These lands are now used by the Carmacks people.

Hutshi Lake

The principal fish camp of the Hutshi Lake people was on the Nordenskiöld River, about 30 km from Carmacks. Their hunting territory was the entire Nordenskiöld drainage. Hutshi Lake itself was their 'meeting' place. Early in the Twentieth Century, the people from Hutshi Lake adopted Champagne as their meeting place as they had close ties with the Aishihik people.

Aishihik

Very close ties (especially marriage ties) existed formerly between the people of Aishihik (*tu'č' an* - fish people) and the people at Tatchun Lake/Fort Selkirk. Their territory was the east shore of Kluane Lake to the Nisling River, which they used for beaver hunting. Some families also went to Carmacks to salmon fish with Tatchun families.

White River

The White River people ('Yookay Donner' according to Glave 1892:682) occupied the basin of the Klotassin River, a tributary of the White River. In the late Nineteenth Century and early Twentieth Century, their main 'meeting' place was Coffee Creek. Probably because of their control of the copper sources on this part of the White River, the White River people had ties to a number of neighbouring groups. A mixed population of Han, Nabesna and Tutchone has been suggested as comprising this group. The strongest ties, however, appear to have been with the Selkirk and Carmacks people.

Lower and Middle Stewart River

In the mid to late Nineteenth Century, these were apparently two separate groups. The Lower Stewart River people were said to have come to the area from Selkirk after a quarrel with other people in the Selkirk group. People of the lower and middle Stewart River now live in Mayo. A third group, occupying the upper Stewart River, are also reported to have been present around

1900, with close ties to the group on the lower Macmillan River. These people apparently traded at the Lansing post. Most of upper Stewart River group died in an epidemic sometime between 1910 and 1930.

Lower Macmillan

This small group (about 5 or 6 families) was either part of, or very closely tied to the Tatlmian Lake group. Sheldon (1911:92) described the lower Macmillan as the hunting territory of the Tatlmian; Armstrong, however, describes a separate group in this area, which he called 'Moose Indians' (1937: 215, 251-2).

Tatlmian

In the Nineteenth Century, the Tatlmian group was one of the largest and most powerful among the Northern Tutchone. Their territory centred around Tatlmian Lake, Tawata Lake, the north half of Lake Tadru, the three little lakes south of Pelly Crossing, and downstream on Big Creek. Minto (*iatso dačak*) was their meeting place for trade with the Tlingit. Toward the end of the century, however, most of the Tatlmian group was wiped out as a result of epidemics and/or conflict with other groups. By 1908, only 30 people remained, living at High Bank, a few miles upstream from Pelly Crossing.

Fort Selkirk

According to Legros' informant from Little Salmon, these people were called *otsane-ču-huč' an*. The precise meaning of this name has been lost. In the late Nineteenth Century, the hunting territory of the Selkirk group was between the east flank of the Dawson Range and the Yukon River, north of Fort Selkirk. Fishing camps were located both above and below Selkirk. Schwatka (1883:338-9) reported that the people of Selkirk dispersed in winter up the Pelly River to the lakes, up the Yukon River to Rink (Five Finger) Rapids, and down the Stewart and White Rivers. Schwatka (1885:751) describes the use of fragile, light birchbark canoes by the Selkirk people, suggesting they made greater use of the river than people further upstream.

It should be made clear at this point that the concept of 'ownership' of lands by the group existed in the traditional culture of the Northern Tutchone. Lands that were owned were 'habitually exploited.' 'Free land,' was not exploited, or at least not as regularly (McClellan 1975:483). Sheldon (1911:12), for example, was told that the lower Macmillan River drainage 'belonged' to

the Little Salmon people, despite the fact that they lived, for the most part, far from there. A group's territory was respected by other groups; local resources, such as mineral licks or copper, were also 'owned,' usually by 'chiefs' or *dan čo*. *Dan čo* could grant people access to an area, and claim a portion of the fruits of the hunt as levy (Legros 906-907). People who 'owned' an area were responsible for the welfare of strangers in that area. If harm befell them, they had to make reparations or face the vengeance of the stranger's people. The survival of many of the early prospectors and explorers in the Yukon can probably be attributed to this feature of Tutchone culture.

SEASONAL ROUND

The following is taken primarily from Legros (1981), who reconstructed seasonal round on the basis of the information given him by people in Carmacks. He observed that in the past, an individual's use of land was very extensive - game was widely scattered and not very numerous. One individual described to Legros the area he used, identifying and naming the resource areas for game, fish and plants - this area measured just under 100 square miles in extent.

Winter

In the period from about the beginning of November to mid-April, the major subsistence pursuits included lake fishing, trapping and moose hunting. Access to good fishing lakes (Frenchman and Tatlmian Lakes, for example) was apparently limited to a few groups within the larger local band (maximum of 40-45 people); the rest of band split into small groups, sometimes single families, and fished on secondary lakes, or went hunting and trapping in the uplands. Marten, bear and wolverine were present in the uplands. In the valleys, people also trapped grouse, ptarmigan, hare, lynx and beaver, and hunted moose. Winter camps not centred around fishing lakes were highly mobile throughout the winter.

Spring

In the period mid-April to the end of June, people were in the valleys and lowlands exclusively. While hunting moose and trapping small game continued, beaver and muskrat hunting and trapping were especially important. Groups on the good fishing lakes tended to split up at this time, with some people going off to hunt beaver and muskrat. Migratory water fowl appeared in the spring and these were hunted and their eggs collected. Pike were spawning in the spring, and were taken

together with their eggs. Camps tended to be more nomadic during the spring than in the winter. Tlingit traders often came during the spring.

Summer

July and August were spent primarily in salmon fishing. Within a regional band, there might be 1 or 2 large fish camps located in prime fishing areas and 2 or 3 smaller camps, located in less favourable spots, comprised again of 1 or 2 families. Small camps might also split off to trap, hunt moose, and gather plants and berries or other materials. Tlingit traders came again in the summer months, usually in larger groups.

Autumn

September and October were periods of relative abundance. People would divide themselves into small groups to take advantage of all available resources: sheep, moose and bear were hunted in the mountains: dog salmon and whitefish, and migratory birds were available in the lakes and rivers in early October. Frenchman Lake is described as the best place to get whitefish. Little Salmon, Walsh Creek and Big Salmon were good dog salmon fishing locations. Fish were cached "in rocky caverns, the forks of trees, and little log storehouses built on tail piles out of reach of wild animals" (Glave 1892:876).

TRADITIONAL SOCIAL AND POLITICAL ORGANIZATION

Much of the following information is taken from Legros (1981) and is based on his interviews with people in Carmacks and neighbouring communities. Information acquired from other sources will be cited when appropriate.

Traditionally, Tutchone society was organized according to moiety or 'clan' divisions: each individual belonged either to the Raven (*agoi*) or Wolf (*ts'ek~ye*) clan, with membership determined through maternal line. Marriage could only take place between people of different clans. Up until the beginning of the Twentieth Century, this proscription was strictly enforced - transgressions were customarily punished by death. Rules against contact of any kind between opposite sex members of the same clan who were of the same generation were also strictly enforced.

Clan organization structured much of the social life of the people: trade partnerships were always between individuals of the same clan, for example; and upon the death of an individual the relatives of the opposite clan took the responsibility for making the burial preparations.

An unusual feature of traditional Northern Tutchone society, according to Legros, relates to the presence of differences in rank or social status among people. The highest ranking, rich people were the *dan noži'*. Poor people were called *čekadye*. Like the Tlingit on the coast, the Northern Tutchone also had slaves - *yandye*. In Legros' view, it is unlikely that the Northern Tutchone borrowed this system from the Tlingit, who also had highly stratified or ranked societies. Tlingit influence should probably not be ruled out entirely, however.

In the case of the Tlingit, ranked organization is assumed to have developed in response to the resource-rich environment of the coast which permitted the accumulation of surplus food and material goods by individuals. This excess represented the wealth of an individual and his family, and in turn permitted him to acquire items of prestige and engage in acts of generosity towards others. The prestige and reputation arising from such acts made this person a big man, with some influence in the society.

The environment of the Yukon Plateau, by comparison to the coast, cannot be termed resource-rich by any stretch of the imagination. Game in the Boreal forest is widely scattered and not very numerous. While some accumulation of surplus may be possible from time to time, (salmon, for example), this is far from guaranteed. Among the Northern Tutchone, Legros has suggested that people developed a pattern of marriage and alliance which permitted certain groups or families to dominate others and control access to certain resources or certain favoured localities (sources of native copper, and whitefish lakes for winter fishing, for example). The ability of some groups to control access to resources was a form of insurance that in times of scarcity, they would be able to survive.

The means by which the *dan noži'* maintained their domination over others involved essentially the formation of strong family ties within the group. The preferred marriages were between first cousins of the opposite moiety (mother's brother's child or father's sister's child). A group whose interrelationships and wealth were consolidated in this manner were then more likely to have the same interests and act as a single unit. Very often, if competition for scarce or valued resources was at issue, the group who could mobilize the greatest number of individuals could also assert its claim most successfully, sometimes with the use of force, at the expense of smaller or less organized groups.

Dan noži increased their networks of alliance and obligation by taking more than one wife or husband, and by marriages of alliance with *čekadye* or poor people. Informants told Legros that some *dan noži* had in the past as many as twenty wives. Their wealth and prestige could also be increased by the keeping of slaves or *yandye*. A person became a slave either through debt to the *dan noži*, or by being captured by a raiding party. More rarely, Tlingit brought slaves inland for trade. Whatever the *yandye* produced by their labour belonged to the *dan noži*.

There was apparently agreement among Legros' informants concerning the personality and behaviour of *dan noži* - these people are described as arrogant, authoritarian and sometimes violent in their dealings with *čekadye* and *yandye*.

The 'chiefs' Campbell describes at Fort Selkirk in the mid-Nineteenth Century, and those named by Schwatka in the 1880's were *dan čo* of their local groups. To some degree, the wealth and authority of a *dan čo* can be passed on to a son or nephew, and in this sense, the position of 'leader' is hereditary (cf. Schwatka 1885:38). It is also apparent, however, that if the children of a *dan čo* cannot maintain his wealth, they become poor people. There is, within living memory, a tendency for families for families to remain *dan noži* for two or three generations before this status is lost. This appears to be partly due to the need for *dan noži* to form alliances with distant groups, which ultimately results in the members of the family becoming more dispersed and therefore, less powerful as a group.

McClellan (1975b:98) has described the authority of the *dan čo* or chiefs extending to the granting or controlling of access to resources, monopolizing trade with the Tlingit, scheduling group hunting, arranging marriages among poor people, and so on. The sanctions they could apply to enforce their authority generally entailed violence, either personal or destruction of property. Certain *dan čo* (Shrathegan, for example) were also shamans. This may have contributed to their authority as well.

A special privilege of the *dan čo*, which they shared with shamans, was that of interment on platforms at locations of their choosing. Common people were cremated (Legros 1981:118). Schwatka (1885:36) described a platform burial he saw on the Yukon River below Fort Selkirk as having two poles topped with figures (geese, ducks, bears and other animals were apparently common figures for the tops of poles). Another burial is illustrated by Schwatka having 'fence posts' (1885: Fig 33), with sharpened tips like spears. Some years later, Henry de Windt encountered another elevated burial "one day upriver from the Pelly," which he described as "a

white tent surrounded by gaily coloured flags" (1898:86-7). Associated with the burial were a rifle, snow shoes and an old Huntley and Palmer biscuit box.

TRADE AND CONTACT WITH NEIGHBOURING GROUPS

Trade with the Tlingit on the coast dates from at least 1770, when the extinction of sea otter in the north Pacific forced the Tlingit to turn to inland sources of fur in order to maintain their trade with the Russian market.

Although the Tlingit trade with the inland people may not have been characterized by especially cordial relations (Tlingit traders were described as arrogant and overbearing in their dealings with interior people), the trade was regular and reliable for over a century. By comparison, contacts between the Stewart River Tutchone and the Peel River Kutchin during the Nineteenth Century were marked by extreme hostility (Slobodin 1962); hostility also characterized the contact between the Mountain Indians and the neighbouring Upper Pelly, culminating in the massacre of the latter in the Macmillan Pass area sometime around 1886 (Poole Field in J.H. MacNeish 1957). Contact between the Nabesna and the White river groups is not well-documented - possibly this was only sporadic. McClellan's informants also described to her some 'silent trade' with the Nabesna (1975). Campbell implied that relations between the groups at Fort Selkirk ('Wood Indians') and the Ayan or Han downriver were hostile. Legros suggests, however, that trade also occurred fairly regularly between these two groups - trading parties of Copper (White River) and Selkirk Indians are known to have visited the Han on the Klondike River in the late Nineteenth Century. The Han probably also acted as middle men with the Northern Tutchone and the Hudson's Bay Posts on the Mackenzie River and later at Fort Yukon (established 1847). The opening of a Hudson's Bay Company post at Pelly Banks, at the confluence of the Pelly River and Campbell Creek in the mid-Nineteenth Century attracted a number of Upper Pelly people to this area. The Pelly Banks area is described as a favourite rendez-vous for Upper Pelly people, Tagish and the Liard drainage Kaska (McClellan 1975). Campbell describes some intergroup hostilities as well (Campbell 1958). However, later relations with the people at Ross River appeared to be peaceful; Sheldon (1911:92) describes the Ross River people coming to trade at the mouth of the Big Salmon River in the late Nineteenth Century.

Trade with the groups on the Mackenzie River was apparently never established. Of the groups on the Mackenzie, only the Hare knew of people living across the mountains to the west, and they were described as mythical figures (men with wings) (Legros 1981:33). An additional factor

discouraging trade was the price of goods in the Hudson's Bay Company posts on the Mackenzie River - due to the long distances involved in supplying these posts, the trade items were very expensive. The Tutchone found the Tlingit trade goods far cheaper by comparison (Legros 1981: 43-44).

Approximately 10 localities in the lands of the Tutchone people were known as regular meeting places where trade between Tlingit and inland people took place. These were (see Map):

- south end of Kluane Lake
- north end of Aishihik Lake
- Hutshi Lake
- mouth of the Big Salmon River (*Tat-' steu-heen-a*)
- mouth of the Little Salmon River (*Tsak-heen-e*)
- outlet of Tatchun Lake
- mouth of McGregor Ck. (*Ghlu-tal-san*)
- Minto (*Kitl-ah-gon*)
- Fort Selkirk
- Tatmain (*Tatl-een*)

De Windt (1898:85) also mentions Carmacks, or rather the mouth of the Nordenskiöld River (*Thuc-en-dituh* - 'we hope and expect to meet again') as a trading centre where Tlingit and Carmacks Indians met.

The customary organization of trade was between trading partners - among both the Tlingit and Northern Tutchone, these were always *dan noži'* of the same moiety. A Tlingit trader had several partners among the scattered groups of Northern Tutchone. The Northern Tutchone, however, were limited to one Tlingit partner. In order to consolidate partnerships, Tlingit often formed marriage alliances among the Northern Tutchone, although there is no record of any Tlingit ever living among the Northern Tutchone. Legros has indicated that trade was always between Tlingit men and men in the interior. McClellan (1975) reports, however, according to her informants, that women also had trading partners.

Trading expeditions by the Tlingit occurred throughout the year, whenever travel was possible. Meetings were pre-arranged and generally lasted no longer than 2 or 3 days.

The type of goods supplied by the Tlingit to their Northern Tutchone partners included dentalia shells, nacre (mother of pearl), Tlingit clothing, vermilion, small Chinese boxes for the ashes of the dead, obsidian, baskets, blankets decorated with mother of pearl buttons, and later in the Nineteenth Century, European fabrics and clothing, guns, knives, iron adze blades, iron bars, kettles, tobacco and wool blankets. In return, the Northern Tutchone traded lynx, fox, beaver and marten skins, clothing made of marten and ermine, and sheepskin jackets decorated with porcupine quill embroidery. Food was also traded between these two groups - the Tlingit brought in a type of local chewing tobacco with mild narcotic properties, dried clams, certain algae, a pemican of rancid seal grease, fish and berries, hard cakes and herbs and root medicines. The Tutchone provided certain lichens for dyes and spruce gum.

According to Schwatka (1893: 227), among the groups he met on the Yukon River, tobacco, tea and fish hooks were especially in demand as items of trade. Knives, saws and files were apparently not in demand as items of local manufacture were considered superior to these implements.

In trade with neighbouring groups to the southwest, Johnson and Raup (1964: 196) have indicated that the people in the Aishihik and Kluane areas received in trade from the Northern Tutchone native, copper and wood for arrow shafts: "Trees with straight grain suitable for arrows were found to grow best in the Yukon Valley, and such wood for arrow shafts was a scarce commodity elsewhere."

According to Legros' informants, there have been, in memory, only two wars between Northern Tutchone and neighbouring groups. The earliest took place between the White River people and the Neskatahin on the Alsek River drainage, sometime in mid to late Eighteenth Century and resulted in the extermination of the Neskatahin. According to McClellan's informants, the conflict arose from an insult to one of the Copper Chiefs by the Neskatahin (1975b: 510). The second occurred between the Tlingit and the Selkirk people, some years before 1848.

TRAILS

Trails, or 'Indian Roads' (*dan tan*) in the territory of the Northern Tutchone are of two types: those that lead from one resource area to another, and those that lead to the territories of neighbouring groups. Most of the roads built around the turn of the century by Euro-Canadians followed Indian trails - the Dalton trail is a well-known example, following the old 'grease trail'

used by the Chilkat on their trading expeditions to the interior. This is probably the same as the 'Carmacks Trail' described to Johnson and Raup (1964: 164) by the people of Burwash (Aishihik), who traded with the Carmacks people into the early Twentieth Century. The trail leads from Carmacks, over the divide to the Nisling drainage, through Ptarmigan Heart Valley, over the pass to Henry Creek, and then on to Red Tail Lake and Tin Cup Lake. Crossing the Kluane and Donjek Rivers, it leads into the mountains, to the upper reaches of the White River. Branches go to Kluane Lake and Aishihik Lake, and eventually onto the Coast, at Pyramid Harbour. The old Whitehorse - Dawson winter road, built at the turn of the century to link Dawson to the railhead at Whitehorse, also follows an old Indian trail (Legros 1981: 358). Another Tlingit route to the interior was the Stikine Trail, which enters Northern Tutchone territory from the headwaters of the Teslin River, and follows the Yukon downriver (Duerden 1971: 15).

Within the territory of the Northern Tutchone, important trails also led to the sources of native copper in the White River area - Schwatka (1893:240) described one of these leading from Fort Selkirk which branches to the south to cross the Tanana River and to the north, to cross the White River about 75 km from its confluence with the Yukon River. Travel on the Little Salmon trail between Little Salmon and Ross River in the early Twentieth Century is described by Reverend Swanson, the first missionary at Little Salmon, who made this trip by dog sled with Poole Field, the manager of the Ross River post. The trail leads up the Little Salmon and Little Salmon Lake, down to the Pelly near Blind Creek, and then to Ross River. Legros (1981:195) describes the trail between Hutshi and Carmacks as still visible in the early 1970's.

THE EARLY TWENTIETH CENTURY

Legros has taken some pains to demonstrate in his thesis that the society and traditional subsistence of the Northern Tutchone changed very little with the encroachment of Euro-Canadian culture in the early Twentieth Century. Until just prior to the turn of the century, access to items of European manufacture was strictly controlled by the Tlingit and generally, these items were so costly as to preclude widespread use by the interior peoples. In this respect, the complex of activities and knowledge relating to traditional technology remained stable to about 1890 (1981:773).

In Legros' opinion, the major impact of contact with the White society came as a result of introduced epidemics, which brought about a substantial reduction in population size; and changes

In Legros' opinion, the major impact of contact with the White society came as a result of introduced epidemics, which brought about a substantial reduction in population size; and changes in technology, which affected some aspects of hunting strategy and traditional manufacture, and the social organization related to hunting (in particular, the introduction of the repeating rifle, which rendered hunting in groups unnecessary) (1981: 773ff).

The effect of missionary activity is considered minimal in the early Twentieth Century since the missionaries did not speak the language of the people, and the imposition of Western social and moral standards proceeded only very slowly, as witnessed, for example, by the persistence of traditional forms of marriage into the recent period (Legros 1981: 142).

The effects of contacts with Euro-Canadian culture in general were also small, as few whites in fact lived in the settlements in Yukon between 1902 - 1950 (Legros 1981: 100). It is evident, however, that a trend was beginning for people to move closer to the Yukon and Pelly Rivers to trap once the fur trade posts were established in the early part of the century, both to sell their furs and take advantage of opportunities for earning cash (Arcand 1966: 59). Swanson, in his report from the Carmacks and Little Salmon Dioceses, noted in 1916 that the "Indians are gradually migrating towards the Pelly River, and only a few of them are here for a little time during the year" (Northern Lights Vol. 4 [2]: 5). In the Little Salmon and Carmacks settlements, however, the Anglican Missionary reported as recently as 1925 that "Indians only came to the villages two or three times a year" to trade (Northern Lights Vol. 13 [2]), usually at Christmas, early spring and during the summer (Northern Lights Vol 17 [2]: 9).

In the first half of the Twentieth Century, it is apparent that the conservatism of traditional technology and economic organization encouraged the maintenance of traditional social and cultural organization in the face of pressures from Euro-Canadian culture (Legros 1981: 779).

LAND USE AND SETTLEMENT PATTERNS

In the early 1960's, the people of Little Salmon and Carmacks described their traditional hunting territory to Arcand as extending almost to the Yukon and Pelly Rivers in the northwest, to the upper drainage of the Nisling, south almost to Hutshi and Lake Laberge, and east to include the lower Big Salmon River and all of Little Salmon Lake (Arcand 1966: 6). Arcand's informants from Carmacks described a traditional subsistence pattern centred around the hunting of caribou,

which would seem to indicate that the period, which they are referring to as 'traditional,' is the late Nineteenth Century to the early Twentieth Century.

The loss of population as a result of the epidemics of the late Nineteenth and early Twentieth Centuries undoubtedly caused some displacement and realignment of groups in the Northern Tutchone area, which were described in the previous section. Legros calculates a decline in population among the various Northern Tutchone groups at about 30% between 1848 and 1893, and 36% between 1893 and 1908. The population in the mid-Nineteenth Century might have been in the neighbourhood of 500 people (Legros 1981: 760-61).

One result of the decline in population was a reduction in the size of hunting territories necessary to support the various groups. A traditional hunting territory of the Little Salmon people, for example, in the Macmillan River drainage, was no longer in use in the early Twentieth Century (Legros 1981: 194). Use of the area may have ceased soon after this time. The decimation of the Braeburn and Upper Stewart River (?) peoples in epidemics in 1901 and 1910-1930 respectively, also left hunting territories vacant, or available for use by other groups.

A second development tied to the reduction in group size involved the realignment of groups. The Hutshi people, for example, who hunted formerly in the drainage of the Nordenskiöld River, adopted Champagne as their meeting place early in the Twentieth Century (Legros 1981: 195).

Legros stresses, however, that the traditional patterns of land use (including hunting, trapping and fishing territories) remained essentially unaltered from those of the Nineteenth Century. The fur trade and opportunities for working for cash income in the early Twentieth Century were simply 'added on' to the traditional economic organization.

Sources of cash income for Northern Tutchone groups in the early Twentieth Century included cutting wood for the river boats and for homes, selling fish, providing transportation for travellers, working on boats, working in mining camps and acting as interpreters (Cruikshank and Robb 1975: 5). The importance of the wood camps as a seasonal source of cash income is witnessed by the fact that at least in the 20's and 30's, most people tended to live there in the summer, rather than the traditional centres of Little Salmon and Carmacks. These wood camps were Lakeview, just upriver of Carmacks; High Bank, downriver of Carmacks; and Bob Byer's wood camp, just above Little Salmon.

The fur trade itself did not provide cash income; furs were traded directly for goods available in the local stores. Store owners, principally Taylor and Drury in the little Salmon and Carmacks area, attempted to maintain their monopoly on access to local furs by a system of indebtedness and by using tokens, rather than cash for furs, which were redeemable only at their stores.

Cruikshank and Robb (1975: 40) describe the early Twentieth Century (especially 1910-1940) as a period of relative prosperity for the Indian trappers, with fur prices rising rapidly during the First World War and remaining generally high thereafter, with intermittent declines in the early 1920's and in the late 1930's.

A rather unexpected side-effect of the activities associated with the Gold Rush in the Yukon, was the apparent alteration in the migration routes of the barren ground caribou from the Dawson area. Beginning at about the turn of the Century, caribou started moving through the Carmacks area, migrating generally northwest in the spring, returning in greater numbers for a short period in July, and then reappearing in October. Caribou migration patterns were not always predictable, however. Some years they appeared in large numbers along the Yukon River from Selkirk to Carmacks and as far east as Willow Creek on the Pelly, but usually, the herds did not frequent the eastern parts of the district in large numbers. Some caribou wintered in the area. Woodland caribou were present year round especially to the west of the Carmacks area (Bostock 1936: 4). The use of fences or surrounds for the hunting of caribou, as is reported among the Han and Southern Tutchone, is not known among the Northern Tutchone. This can be explained by the fact that by the time the caribou began to appear in the Carmacks area, people already had repeating rifles and group hunting strategies were no longer necessary. By 1937 caribou had ceased to migrate through the Carmacks area.

The Government ban on the use of fish traps in the 1930's (Legros 1981: 406), and their replacement with gill nets (supplied by the Indian Affairs Branch) also encouraged the trend to more individual or family oriented subsistence activities.

SOCIAL AND POLITICAL ORGANIZATION

Although the impact of contact with missionaries, government agencies and Euro-Canadian settlers on the traditional social organization of the Northern Tutchone in the early Twentieth Century was comparatively minor, the effects of contact presaged the changes that were to come later.

The trend to more individualistic, or single family orientation in subsistence activities permitted by the introduction of the repeating rifle and gill nets, mentioned above, contributed to a gradual erosion of larger political and economic group organization. Opportunities for wage employment, sometimes at a distance from the settlements, probably contributed to this trend as well.

According to Legros' informants, the presence of a police force in the Carmacks area since 1910 was a major deterrent to the traditional dominance exercised by the *dan noži*, which often entailed the use of physical coercion. Female infanticide, common among hunting societies, also ceased in the early Twentieth Century (1981: 760, 778).

The attempts by missionaries to impose the teachings and morals of Christianity on the Tutchone affected the traditional belief systems and social organization. Traditional spiritual leaders and ceremonies were actively condemned by the church, with the result that these practices became increasingly covert. Polygamous marriages also went against the doctrines of the church and were discouraged by the Anglican missionaries, although in this case it is known that the missionary efforts took effect only very slowly (Legros 1981: 142). Some social institutions, such as moiety divisions of Raven and Wolf, were still observed in the 1930's and later.

In their practice of baptism of all individuals, however, the missionaries had more success. The traditional names of the people were replaced with 'Christian' names, and the latter were thereby formalized for the purposes of the government records. Anglicized names were often given Indians by the traders as well, who were unwilling to pronounce the Indian names. Sometimes, it was the custom of affix a person's band name to a Christian name (Coutts 1980: 258). These practices were widespread in most contact situations between Euro-Canadians and Indians. Francois Mercier, who established Fort Reliance for the Alaska Commercial Company in 1874, describes the baptism of the son of a very influential chief of the Upper Tanana, saying "he was baptised with my name, Francoise Xavier" (Mercier 1977: 5). This renaming of people was certainly in effect by the turn of the Century in the Little Salmon and Carmacks areas. The missionary at Carmacks and Little Salmon lists some of the people at Little Salmon in 1928 as follows: Bean Jimmy, Jim Little Johnnie, Fritze Sco Bill (Shrathegan?), Leader Little Salmon Jim, Jim Shorty, Little Scurvy, Gus Scurvy, Pack Charlie, Little Shorty, Soo Bill, Harry Silver Fox, Moose Bill, Dick Beans, and ____ Washpan (Northern Lights Vol. 16 [3]). At Carmacks in 1939, the missionary, Rev. Ward, lists Moses Bill, Little Scurvy, Good Boy Joseph, George Skookum, David Tom Tom, Pack Charlies and Copper Joe (Northern Lights Vol. 28 [4]). The traditional system of reckoning kinship through one's mother undoubtedly confused the early missionaries;

however, as keepers of the official records, they contributed to establishing the European system of a child inheriting the father's name.

The traditional custom of cremation of the dead was prohibited in 1898 (Legros 1981: 945). Missionaries, together with the Indian Agent (Rev. John Hawksley for much of the first half of the Twentieth Century) also actively encouraged people to abandon their semi-subterranean houses and move into log cabins. This factor alone probably contributed to the high incidence of tuberculosis among the Indian people, as the log houses, unless properly built and continuously maintained, could not be kept as warm as the semi-subterranean houses.

TRADE WITH NEIGHBOURING GROUPS

Aishihik people continued to come to Carmacks to trade at least until 1918. Normally, these people arrived for the Christmas celebrations in Carmacks (Northern Lights Vol. 3 [2], 6[1]). Little Salmon people also went to Ross River, which was an important trade centre for a number of groups in the area in the early part of the Century (Swanson, in Whyard 1974; McDonnell 1975: 41-3).

THE RECENT PERIOD: 1950 - 1985

LAND USE AND SETTLEMENT PATTERNS

With the building of the Alaska Highway and the Canol Road in 1942-45, and the all weather road from Whitehorse to Dawson in 1950, reliance on the Yukon riverboats for transportation effectively ended. Settlements which had been oriented exclusively to river were gradually abandoned in favour of settlements on the roads.

At this time, people from Little Salmon and Tatchun Lake moved their permanent bases to Carmacks, together with some Big Salmon people. Most Big Salmon people moved to Whitehorse. Fort Selkirk, Macmillan and Tatlain people (the latter were centred around Minto between 1940 and 1950) moved to Pelly Crossing. Stewart River people moved to Mayo. The White River group, which had traded formerly at Coffee Creek, moved their base to Snag. Most people from

Aishihik and Hutshi, who had traded formerly at Carmacks, and later Champagne, moved their base to Haines Junction (Legros 1981: 100, 192ff).

Within Carmacks, the Indian village was moved by the Indian Affairs Department across the river to its present location in 1958-59 (Indian Affairs Branch Records, in Cruikshank and Robb 1975: 10). This location was perceived as better suited for habitation as it was not subject to flooding by the Yukon River (Sharp 1973: 111). The decision was made by the Indian Affairs Branch with the support of the Catholic Church in Carmacks (Sharp 1973: 115).

The years since 1950 have seen the most significant changes in the way of life of the Northern Tutchone. The collapse of the fur market after 1947, combined with the loss of income from woodcutting for the river boats, and prohibitions on selling game meat in 1951, severely affected the local economy. Trapline registration was introduced by the Territorial Government in 1952, determining ownership and setting boundaries on individual trapping areas. This system was not only against the value system of the Indian people, but also unwise with the respect to limiting trapping opportunities (McCandless 1985: 90). In addition, the new legislation required that an individual demonstrate previous use of a trapline before it became registered in his/her name, which proved to be a problem for some at a time when the markets were depressed and trapping activities were reduced. A \$10 registration fee was also imposed (McCandless 1985: 144). In 1958, a new policy was introduced which set trapline registration for a five year period and required that the holder of the registration trap every year or forfeit his/her area; this would be particularly hard for an individual to do when the fur prices were low. The provision for yearly use has not been uniformly applied, however. In more recent years, the cost of trapline purchase is proving beyond the means of a large number of individuals.

SOCIAL AND POLITICAL ORGANIZATION: 1950-1985

Since about 1950, a number of factors have acted together to tie the Indian people closer to the major settlements. Health and police services were established in the communities; government subsidies were made available (housing, for example); and school became mandatory for children (Legros 1981: 101).

In 1944, the Federal Government implemented the Family Allowance Act in Canada, which paid women between \$5 and \$8 a month for each child, except in the Yukon and N.W.T., where "payment is made in kind because of the lack of exchange facilities" (McCandless 1985: 141).

This persisted until about the mid-1950's (DIA-Annual Report 1954). The Act stipulated that in order for women to collect Family Allowance payments, children had to be registered in school. The effect of the Act was threefold. Women now had an income independent of their families and marital status, which contributed to the fragmentation of groups initiated in the first half of the century with wage employment and changes in traditional technology. Families were increasingly tied to the settlements, with children required to attend school. This proved to be a divisive factor in families, as women and children no longer accompanied men on the trap lines, which reduced the trapper's efficiency. Men were also, understandably, reluctant to leave their families for long periods of time (McCandless 1985: 141). The final repercussion of the Act was the education of children in the Canadian public school system, (previously closed to Native students) which became mandatory in the late 1950's. This resulted ultimately in the loss of their own language, and much of their knowledge of the traditional way of life (Legros 1981: 101).

In the 1960's and 1970's, mining and exploration activities were stepped up in the Yukon and wage employment became fairly accessible. At the same time, however, the number of whites in the communities increased, and the number of facilities designed to service them also increased (media, entertainment, government services, parks, etc.), which ultimately hastened acculturation of the younger people into Canadian society.

In response to the pressures of outside society, the political organization of the Northern Tutchone began to change as well. The offices of 'chief' and 'councillors' are creations of the Indian Affairs Branch, and were apparently largely ignored by the people of the Little Salmon Carmacks Band, at least until the mid-1940's. In a letter to the Director of the Indian Affairs Branch in December of 1943, J.E. Gibben, the Indian Agent in Dawson, refers to the fact that only the Selkirk, Teslin, Whitehorse and Moosehide Bands had chiefs (Indian Affairs Archives, Elections in the Yukon Region, 1913-1969, RG 10 Vol. 10321 File #801/3-5 Part O). The first record of the election of a chief at Carmacks that I have been able to locate in the records of the IAB Archives is the election of Taylor McGundy in 1962.

It seems a fair assumption that, in the face of increasing encroachment by Government and outside interests, the people of the Little Salmon Carmacks Band felt it was necessary to formalize their political organization so that these outside elements could be addressed more effectively by the group as a whole. On this level at least, this marks a return to the larger territorial band level of organization characterization of traditional culture.

EMERGENCE OF VILLAGES IN THE PRESENT CENTURY

Only in the present century did villages appear. They replaced the traditional gatherings which had occurred for fishing, trading or caribou hunting during periods when resources were relatively plentiful. The composition of these villages is often quite different from the seasonal gatherings of the old days.

Carmacks:

Carmacks may have always been a central camp for a few Indian families but it began its permanent life as a coal mine at the beginning of this century. It was named after George Carmack, one of the discoverers of Klondike gold, who had a cabin there. Later it became a resting place for boats travelling the Yukon River and for horse drawn stage coaches making the two week trip between Whitehorse and Dawson.

The Indian families who lived at Carmacks come from a number of places, like Big Salmon, Little Salmon, and the surrounding lakes and rivers.

The history of Carmacks is closely tied with the now abandoned settlement of Little Salmon. Little Salmon was always the more important of the two until the 1950's.

In 1900 and 1910, Taylor and Drury traders built two stores, one at Little Salmon and one at Carmacks. In 1904, the Northwest Mounted Police established a post at Little Salmon to patrol the river. In 1915, the Anglicans built a church at Little Salmon and a resident minister moved there.

The Anglican diocese newsletter of the period consistently reports in 1913, 1914 and 1916 that Little Salmon people spent very little time at the post and came there only at regular times to trade the furs they trapped. In 1916, it was reported that a government surveyor had been appointed to make a reserve at Little Salmon which will be a permanent camping ground for the natives for all time irrespective of settlement or other incursions by the white man. By 1924, the native population of Little Salmon was said to be 100, while only 18 in Carmacks - their headquarters. Three wood camps on this part of the Yukon drew people to chop wood for riverboats in summer, one at Lakeview, one at Carmacks and one just north of Carmacks.

Carmacks was still a centre where people from Aishihik traded and the Anglican newsletter records that in 1915, a party of Aishihik people came for Christmas and that in 1918 they traded furs there.

In 1929, a gold mine was opened at Mount Freegold and Nansen creating some employment. Workers established homes in Carmacks, closer to the mine and in 1930, the population numbered 90 people at Carmacks and 60 at Little Salmon.

By 1938, the once regular caribou migrations across the Yukon River near Carmacks had stopped. In 1939, mining operations ceased and the population shifted again - Carmacks 55 and Little Salmon 83. The building of the Alaska Highway in 1942 did not directly touch people in this area. But the road north of Mayo and Dawson in 1951 sounded the death knell for the riverboats, and consequently the death of Little Salmon as a community. The Little Salmon store closed and the people moved to Carmacks, so that between 1945 and 1952 Carmacks population increased from 65 to 136.

In 1958 - 59, the Indian Affairs department moved to the village to its present site on the north side of the river.

APPENDIX III

WILLIAMS CREEK COPPER OXIDE PROJECT

CONSULTATIONS WITH MEMBERS OF THE LITTLE SALMON CARMACKS FIRST NATION:

Individuals involved with the Williams Creek project have been conscientious about informing and involving the Little Salmon Carmacks First Nation people and have already conducted numerous meetings with First Nation members. The following is a summary of the meetings as of April 1993:

Bob Muir, Antiquus Archaeological Consultants Ltd.

- August 11, 1992: Little Salmon Carmacks First Nation Band and Council in attendance to discuss upcoming archaeological field program.
- August 14, 1992: Meeting with Mr. Eric Fairclough, Chief of Little Salmon Carmacks First Nation, to discuss the results of the archaeological field program.
- Several interviews were conducted with individuals from the Little Salmon Carmacks First Nation pertaining to traditional First Nation Land use practices in the Williams Creek Valley (Mr. Wilfred Charlie, Ms. Viola Mullet, Mr. Johnny Sam, Mr. Eric Fairclough).

Mr. Paul Harder, P.A. Harder and Associates Ltd., Biological Consultants

- August 12, 1993: Meeting with Chief Eric Fairclough to discuss fisheries resource use and environmental concerns.
- August 12, 1993: Meeting with Mr. Johnny Sam of Carmacks to discuss fish resource use and trapping in the Williams Creek drainage.
- August 21, 1993: Letter to Chief Eric Fairclough requesting further information on the activities and concerns of First Nation members in relation to the proposed Williams Creek project.

Hallam Knight Piesold Ltd.

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- October, 1992: Meeting with Mrs. Kathy Sam of Carmacks to discuss fish harvesting practices on the Yukon River.
- October, 1992: Meeting with Mrs. Gladys Johnny of Carmacks to discuss fish harvest practices on the Yukon River.

Mr. Robert Quartermain, Western Copper Holdings Ltd.

Mr. Ken McNaughton, Western Copper Holdings Ltd.

- Spring 1991: Initial meeting with Chief Eric Fairclough.
- May 22-24 1991: Meeting with Regional Environmental Review Committee.
- August 19-21, 1992: Project presentation to Village of Carmacks and the Carmacks Little Salmon First Nation.
- November 23, 1992: Meeting with Chief Eric Fairclough to update the Little Salmon Carmacks First Nation on the Williams Creek Project.
- February 17 to 21, 1993: Meeting with Little Salmon Carmacks First Nation concerning the Williams Creek Project and traplines.

WILLIAMS CREEK COPPER OXIDE PROJECT

APPENDIX IV

WILLIAMS CREEK COPPER OXIDE PROJECT

Appendix IV: List of Contacts:

K. McNaughton, Western Copper Holdings Ltd.
R. Quartermain, Western Copper Holdings Ltd.
J. Gibson, J. Gibson and Associates
J. Wilson, consultant
M. Nugent, Employment and Immigration Canada
J. MacGillivray, Yukon Bureau of Statistics
G. Mair, City of Whitehorse, Public Works
P. Harder, P.A. Harder and Associates
D. Rutledge, Yukon Housing Corporation
D. Hansen, Village of Carmacks
V. Mullett, Little Salmon Carmacks First Nation office
F. Blanshard, Little Salmon Carmacks First Nation office
T. Gooding, Little Salmon Carmacks First Nation office
R. Leitch, Labour Market Analysis, Employment and Immigration Canada

Yukon Board of Education
Yukon Chamber of Mines
Yukon Chamber of Commerce
Yukon College
Health and Welfare Canada
Indian and Northern Affairs Canada, Indian and Inuit Program
Revenue Canada
Statistics Canada