

1977 PWC Surveyed Route - Waterfowl Habitat Rating

Source: Rampton 1972 cited in PWC 1975

which were temporarily abandoned due to human disturbance faced a higher incidence of predation (Johnson *et al.*, 1987). Ducks, especially broods, may also be struck by vehicles, even on low-use roads. Again, improved access for hunters may prove to be a more substantial effect of the development of the Inuvik-Tuktoyaktuk road. Regulatory controls may be required to offset this potential impact.

3.6.3.3 Raptors

Raptors are of ecological importance due to their role as high-level predators and, in some species, due to global conservation issues. Species known or likely to occur in the Inuvik-Tuktoyaktuk area include bald and golden eagles, rough-legged hawk, peregrine falcon, gyrfalcon, and snowy owl. Such subspecies of peregrine are considered endangered, although the *tundrins* subspecies (most likely in the study area) in Canada is not

Bald eagles typically nest in trees, and are thought to be more common within the Delta than to the east (Community of Inuvik, 1993). Snowy owls typically nest on the ground and, particularly in coastal areas, on elevated ground sites.

Golden eagles, rough-legged hawks, and both falcon species usually nest on cliffs or bluffs. Substantial cliffs are rare within the Inuvik-Tuktoyaktuk corridor. However, in the absence of cliffs, these raptors will use alternative nest sites including steep ravines and banks, rock outcrops, and large boulders. Such sites within the Inuvik-Tuktoyaktuk corridor should be considered candidate nesting areas for these species.

Raptors, especially owls, are vulnerable to vehicle collisions. Most raptors are sensitive to human disturbance, especially during nesting. Individual disruption and habitat avoidance leading to loss of habitat effectiveness has been shown for bald eagles (Fraser *et al.*, 1985; Steidl, 1994) and golden eagles (Holmes *et al.*, 1993). Responses of other northern raptors to mechanized human activity have not been measured, but all are known to be vulnerable to disturbance.

3.6.3.4 Other Birds

Many other bird species occur, at least seasonally, within the Inuvik-Tuktoyaktuk corridor. Of these, sandhill cranes and willow ptarmigan are perhaps the most important,

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the former from an ecological perspective and the latter for its ecological and economic value.

Sandhill cranes nest on grass mounds in wet tundra areas. Foraging areas include open plains, marshes, and tundra. Although they are not commonly hunted, cranes are susceptible to human disturbance with the potential for resultant loss of habitat effectiveness. Migrant sandhill cranes avoided areas adjacent to roads in otherwise-suitable habitat (Krapu *et al.*, 1984).

Willow ptarmigan occur widely throughout the Inuvik-Tuktoyaktuk area, and are year-round residents. Preferred habitat includes upland tundra. Nest sites are commonly located in shrub habitats, including dwarf shrub-heath and alder. Shrub communities are also important for winter habitat (Platt, 1976). Road construction through shrub areas will likely reduce nesting and winter habitat available for willow ptarmigan.

Ptarmigan may also be attracted to a road surface to collect grit, thereby becoming more vulnerable to roadkill. However, ultimately a larger potential impact would arise from the increased access provided for hunters.

3.6.4 Data Gaps

The review of the available scientific information and input received from the public consultation and traditional knowledge sessions confirmed the importance of certain portions of the proposed road corridor, in particular the areas around Husky, Parsons and Noel lakes, for wildlife and local resource harvesting activities. Thus, to provide optimal future protection for the wildlife resources of the region, additional work will be required in some areas.

More information on seasonal caribou distribution, abundance, and habitat use within the Inuvik-Tuktoyaktuk corridor will be required to evaluate the specific potential effects of future road development.

Because of the grizzly bear's ecological and economic importance, and its potential for conflict with construction and use of a road, local knowledge of grizzly bear use of the Inuvik-Tuktoyaktuk corridor requires updating.

The potential for local sources of construction materials as important wildlife habitat (*e.g.*, carnivore denning areas) should be determined by intensive surveys of those sites.

The potential for raptor nest sites within the Inuvik-Tuktoyaktuk corridor should be evaluated through a survey program.

4. COMMUNITY SOCIO-ECONOMIC PROFILES

4.1 General

The overall purpose of this section of the scoping report is to provide a consolidated statistical profile of selected social, economic, demographic, and key transportation indicators for the communities in the study area. Data are presented at the individual community level and, where data exist are compared to the Western NWT or to the Northwest Territories in total.

The major uses of the community socio-economic profiles includes providing a comprehensive baseline for a potential project impact assessment should the proposed Inuvik to Tuktoyaktuk road project proceed to the next stage of development. Specifically, the profiles can assist in focussing potential major effect issues in relation to an established statistical baseline.

4.2 Organization and Presentation of Data

The community socio-economic data are presented in two sections. Section 4.3 provides a community overview of each community in the study area, specifically:

- Aklavik;
- Fort McPherson;
- Inuvik;
- Tsiigehtchic; and
- Tuktoyaktuk.

Section 4.4 provides a series of statistical tables of selected social, economic, demographic and key transportation indicators. The statistical tables include:

- Population;
- Age Distribution;
- Dwellings;
- Housing Tenure;

COMMUNITY SOCIO-ECONOMIC PROFILES

- Ethnic Distribution;
- Highest Level of Schooling;
- Living Costs/ Prices;
- Petroleum Products;
- Labour Force Activity;
- Employment by Industry;
- Traditional Activities;
- Personal Income;
- Household Income Distribution;
- Social Assistance;
- Registration of Motor Vehicles;
- Highway Collisions;
- Community Highway Collisions;
- Cargo Movement;
- Income Freight Flow; and
- Aircraft and Passenger Movements.

4.3 Community Overviews

4.3.1 Aklavik

The aboriginal name for this community means Barren Ground Grizzly Place

4.3.1.1 Basic Facts

- Aklavik has a population of 727 and is organized as a Hamlet
- Community longitude is 135, latitude 68.13
- GNWT administrative region is Inuvik
- The Mayor is Charlie Furlong, Senior Administrator Nellie Gruben

- The MLA is David Krutko, Mackenzie Delta
- The Member of Parliament is Ethel Blondin
- Spoken aboriginal languages include: Inuvialuktun/Gwich'in
- The aboriginal claim area is Gwich'in
- Community income (1995) is \$7861 (? 000)
- Average income (1995) is \$19,653.00
- The Community Chief is Eugene Pascal
- The Community Sub-Chief is David Edwards
- The Band Manager position is Vacant

4.3.1.2 Community Services

Road Access

- Winter road (open only during part of the winter)

Air Access

- Yellowknife to Aklavik
- Airfare: \$1356 (return)
- Frequency: daily

Accommodations

- Daadzii Lodge, accommodation for 8 in 5 rooms (shared accommodation, shared bath)

Daily Rates: \$125/person

Other features: No meals provided, kitchen facilities available

Banking Facilities

- No banking facilities exist within the community.

COMMUNITY SOCIO-ECONOMIC PROFILES

Recreation Facilities

- Recreation facilities include an arena/curling rink/community hall complex, playfield and playground, outdoor pool and school gymnasium. There is also a community library, and an annual spring carnival.

Schools/Education

- The Moose Kerr School teaches grades K-9. The Aklavik Education Committee is the local education authority. Vocational and continuing education opportunities are available through the Adult Education Centre or the Arctic College Extension Program.

Emergency Services

- There is a health centre, a volunteer fire department, RCMP detachment and Community Social Services Office.

Other Services

- Church services are available in the Baptist, All Saints, Anglican, Roman Catholic and Christian Assembly faiths.
- Mail is delivered five times a week. NorthwesTel phone service and CBC Radio are available through microwave transmission. CBC Television and three Cancom television channels are available via the Anik satellite. The community also has one local FM radio station and one community channel. The News/North weekly newspaper is available.
- NWTPC provides a 1350 kW diesel-generated power.

Community Census Population

- Between the two census years of 1996 and 1991 the population of Aklavik actually declined by 74 people or about -9%. This compares to a growth rate in the Western NWT of about 9% over the same period. Growth in Nunavut over the same period was about 16%.

Aklavik Unemployment and Employment, 1996 Census

- Aklavik unemployment rate: 25.4%
- Western Arctic unemployment rate: 11.7%
- National unemployment rate: 10.1%

4.3.1.3 Transportation Profile

Road Transportation

- An ice road links the community to Inuvik during winter months; roughly 6 km of proper roads within Aklavik.

Marine Transportation

- Summer barge traffic originates from Hay River.

4.3.2 Fort McPherson

The aboriginal name for this community means At the Head of the Waters

4.3.2.1 Basic Facts

- Fort McPherson has a population of 878 and is organized as a Hamlet
- Community longitude is 134.53, latitude 67.26
- GNWT administrative region is Inuvik
- The Mayor is Philip M. Blake, Senior Administrator Gyles Gillis
- The MLA is David Krutko, Mackenzie Delta
- The Member of Parliament is Ethel Blondin
- Spoken aboriginal languages include: Gwich? in
- The aboriginal claim area is Gwich? in
- Community income (1995) is \$10431 (? 000)
- Average income (1995) is \$21,288.00

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- The Community Chief is William Koe
- The Community Sub-Chief is Hazel Nerysoo
- The Band Manager is Wilbert Firth

4.3.2.2 Community Services

Road Access

- All weather road (Dempster Highway) with ferry access (may close part spring or fall)

Air Access

- Yellowknife to Fort McPherson
- Airfare: \$1462 (return)
- Frequency: daily

Accommodations

- Tetlich Bed and Breakfast - Accommodation: 2 in 1 bedroom (shared bath)
Daily Rates: \$100/person
Other features: laundry, TV, shared kitchen
- Tetlit Hotel (Inns North) - Accommodation: 16 in 8 rooms (private bath)
Daily Rates: \$185/person (includes meals)
Other features: TV, radio

Banking Facilities

- No banking facilities exist within the community.

Recreation Facilities

- Recreation facilities include an arena/hall facility, school gymnasium, above-ground pool, playground/park, softball field and ski trails.

Schools/Education

- Chief Julius School teaches grade K-9. Vocational and continuing education opportunities are available through the Adult Education Centre and the Arctic College Extension Program.

Emergency Services

- There is a health centre, a volunteer fire department, RCMP detachment and Community Social Services Office.

Other Services

- Mail is delivered four times a week. NorthwesTel provides microwave telephone service. CBC Radio is through the LPRT system and CBC Television is provided via the Anik satellite system. There is also a community radio station.
- NWTPC provides a 1760 kW capacity diesel-generated power to the hamlet.

Community Census Population

- Between the two census years of 1996 and 1991 the population of Fort McPherson grew by 119 people or about 16%. This compares to a growth rate in the Western NWT of about 9% over the same period. Growth in Nunavut over the same period was about 16%

Fort McPherson Unemployment and Employment, 1996 Census

- Fort McPherson unemployment rate: 22.1%
- Western Arctic unemployment rate: 11.7%
- National unemployment rate: 10.1%

4.3.2.3 Transportation Profile

Road Transportation

- The Dempster Highway links the community with Inuvik to the north and Dawson City, Yukon to the south.

COMMUNITY SOCIO-ECONOMIC PROFILES

Marine Transportation

- Barge service from Hay River is available from June to August.

4.3.3 Inuvik

The aboriginal name for this community means Place of Man

4.3.3.1 Basic Facts

- Inuvik has a population of 3296 and is organized as a Town
- Community longitude is 133.43, latitude 68.21
- GNWT administrative region is Inuvik
- The Mayor is George Roach, Senior Administrator Don Howden
- The MLA is Floyd Roland, Inuvik
- The Member of Parliament is Ethel Blondin
- Spoken aboriginal languages include: Inuvialuktun/Gwich? in
- The aboriginal claim area is Inuvialuit
- Community income (1995) is \$67511 (? 000)
- Average income (1995) is \$34,621.00
- The Community Chief is James Firth
- The Community Sub-Chief is Barry Greenland
- The Band Manager position is Vacant

4.3.3.2 Community Services

Road Access

- All weather road (Dempster Highway) with ferry access.

Air Access

- Yellowknife to Inuvik
- Airfare: \$1212 (return)

- Frequency: daily

Accommodations

- Arctic Chalet Bed and Breakfast - Accommodation: 5 rooms in 3 cabins (public bath or shared bath)
Daily Rates: \$80/single, \$85/double, \$100/family
Other features: laundry
- Eskimo Inn - Accommodation: 156 in 74 rooms (private bath)
Daily Rates: \$115/single, \$125/double
Other features: licensed lounge, dining, café, banquet, conference room
- Finto Motor Inn - Accommodation: 75 in 40 rooms (private bath)
Daily Rates: \$115/single, \$125/double
Other features: boardroom, banquet, gift shop, kitchenettes
- Mackenzie Hotel - Accommodation: 60 in 33 rooms (private bath)
Daily Rates: \$119/single, \$120/double
Other features: café, cocktail lounge, fine dining
- Polar Bed and Breakfast - Accommodation: 6 in 4 rooms (shared accommodation/bath)
Daily Rates: \$75/single, \$85/double
Other features: lounge, laundry, kitchen

Banking Facilities

- A CIBC branch and Bank of Montreal ATM machine are located in the town.

Recreation Facilities

- Recreation facilities include an above-ground pool, arena, curling rink, track, mini-golf, school gyms, parks and playgrounds, tennis courts, softball fields, ski trails, a beach area and a library displaying local artifacts

COMMUNITY SOCIO-ECONOMIC PROFILES

Schools/Education

- Sir Alexander Mackenzie School teaches grade K-6 while Samuel Hearne Secondary teaches grades 7-12. Vocational and continuing education opportunities are available through the Adult Education Centre and the Aurora Campus of Arctic College.

Emergency Services

- Inuvik General Hospital has 64 beds and 10 bassinets, and there are private medical and dental clinics. There is a volunteer fire department and RCMP detachment. Social services facilities and services include the Northern Lights Treatment Centre, a group home, the community social service project, the Inuvik Council for Disabled Persons, Delta House (alcohol and drug program), Youth Drop-In Centre, Canadian Mental Health Association, Ingamo Hall Friendship Centre, Inuvik Day Care Centre, senior citizens home, and the Home Care Program.

Other Services

- Mail is delivered five times weekly. NorthwTel phone service is by microwave transmission, and VHF radio/telephone service is available. There is a local radio station. CBC Radio has a local production centre broadcast over the microwave linkup. CBC Television is broadcast via the Anik satellite system.
- NWTPC provides 12,250 kW of power to the Town. As the NWTPC Regional Office, Inuvik provides service to Sachs Harbour, Paulatuk, Tsiigehtchic, Fort McPherson, Aklavik, Deline, Fort Good Hope, Fort Norman, Norman Wells and Tuktoyaktuk.

Community Census Population

- Between the two census years of 1996 and 1991 the population of Inuvik grew by 90 people. The community's percentage increase was about 3% over this period. This compares to a growth rate in the Western NWT of about 9% over the same period. Growth in Nunavut over the same period was about 16%.

Inuvik Unemployment and Employment, 1996 Census

- Inuvik unemployment rate: 11.0%
- Western Arctic unemployment rate: 11.7%
- National unemployment rate: 10.1%

4.3.3.3 Transportation Profile

Road Transportation

- The Dempster Highway links Inuvik to Dawson City, Yukon; there are winter ice roads to Aklavik and Tuktoyaktuk.

Marine Transportation

- Barge service from Hay River operates in the summer.

4.3.4 Tsiigehtchic

The aboriginal name for this community means Mouth of the Iron River

4.3.4.1 Basic Facts

- Tsiigehtchic has a population of 162 and is organized as a Hamlet
- Community longitude is 133.44, latitude 67.27
- GNWT administrative region is Inuvik
- The Mayor is Grace Blake, Senior Administrator Brian Kelly
- The MLA is David Krutko, Mackenzie Delta
- The Member of Parliament is Ethel Blondin
- Spoken aboriginal languages include: Gwich? in
- The aboriginal claim area is Gwich? in
- The Community Chief is Grace Blake
- The Community Sub-Chief is James Cardinal
- The Band Manager is Brian Kelly

COMMUNITY SOCIO-ECONOMIC PROFILES

History

- In 1868, a Roman Catholic Mission was established at the current site, which was then a fishing camp, and a trading post soon followed. Construction of the Dempster Highway attracted many residents. Trapping, hunting and fishing remain prominent sources of income. Ferry crossing maintenance and the local retail store/post office provide a few jobs.

Location and Environment

- Tsiigehtchic is located at the confluence of the Arctic Red and Mackenzie rivers at 67°27'N and 133°44'W, 96 km south of Inuvik and 1011 km northwest of Yellowknife. Black spruce and birch grow on the well-drained land, while willows grow in the poorly drained areas. Tsiigehtchic receives an average of 13.5 cm of rainfall and 160.8 cm of snowfall per year. Mean annual precipitation totals 31.2 cm. July mean high and low temperatures are 19.9°C and 9.4°C. January mean high and low temperatures are -24.9°C and -32.7°C. Winds are generally from the east and annually average 9.6 km/h.

4.3.4.2 Community Services

Road Access

- All weather road (Dempster Highway) with ferry access

Air Access

- None

Accommodations

- No commercial accommodation listed

Banking Facilities

- No banking facilities exist within the community

Recreation Facilities

- Recreational facilities include a community hall, community centre, community club, playground and school gymnasium

Schools/Education

- Chief Paul Niditchie School teaches grades K-9. Continuing education opportunities and vocational training opportunities are available through the Arctic College Extension Program

Emergency Services

- There is a health centre, a volunteer fire department, RCMP detachment and all social services are available from Fort McPherson

Other Services

- Mail is delivered once a week. NorthwesTel provides microwave telephone service. CBC Radio and Television are broadcast via the Anik satellite system. NorthwesTel VHF radio/telephone services are available.

Community Census Population

- Between the two census years of 1996 and 1991 the population of Tsiigehtchic grew by 18 people. The community's percentage increase was about 13% over this period. This compares to a growth rate in the Western NWT of about 9% over the same period. Growth in Nunavut over the same period was about 16%

Tsiigehtchic Unemployment and Employment, 1996 Census

- Tsiigehtchic unemployment rate: 15.4%
- Western Arctic unemployment rate: 11.7%
- National unemployment rate: 10.1%

COMMUNITY SOCIO-ECONOMIC PROFILES

4.3.4.3 Transportation Profile

Road Transportation

- The Dempster Highway links the community with Inuvik to the north and Dawson City, Yukon to the south.

Marine Transportation

- Summer barge traffic originates from Hay River.

4.3.5 Tuktoyaktuk

The aboriginal name for this community means *Looks Like a Caribou*

4.3.5.1 Basic Facts

- Tuktoyaktuk has a population of 943 and is organized as a Hamlet
- Community longitude is 133.02, latitude 69.27
- GNWT administrative region is Inuvik
- The Mayor is Ernest Pokiak, Senior Administrator Lucy Kuptana
- The MLA is Vince Steen, Nunakput
- The Member of Parliament is Ethel Blondin
- Spoken aboriginal languages include: Inuvialuktun
- The aboriginal claim area is Inuvialuit
- Community income (1995) is \$10417 (? 000)
- Average income (1995) is \$21,702.00

4.3.5.2 Community Services

Road Access

- Winter road (open only during part of the winter)

Air Access

- Yellowknife to Tuktoyaktuk
- Airfare: \$1450 (return)
- Frequency: daily

Accommodations

- Hotel Tuk Inn - Accommodation: 39 in 18 rooms (private bath)
Daily Rates: \$125/single, \$150/double
Other features: TV, coffee shop, dining room
- Pingo Park Lodge Ltd. - Accommodation: 50 in 25 rooms (shared accommodation, private bath)
Daily Rates: \$160/day (includes meals)
Other features: coffee shop, banquet, conferences, TV

Banking Facilities

- No banking facilities exist within the community

Recreation Facilities

- Recreation facilities include an arena/meeting hall, school gymnasium, summer swimming pool, playground, golf course, softball diamond and sod house museum.

Schools/Education

- Mangilaluk School teaches grade K-9. Continuing education opportunities are available through the Adult Education Centre and the Arctic College Extension Program.

Emergency Services

- There is a health centre, a volunteer fire department, RCMP detachment and Community Social Services Office.

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Other Services

- Mail is delivered five times a week. NorthwesTel offers phone service via microwave towers. The local CBC radio affiliate, CFCT, is broadcast via microwave as well. CBC Television is broadcast via the Anik satellite system. VHF radio/phone services are also available.

Community Census Population

- Between the two census years of 1996 and 1991 the population of Tuktoyaktuk grew by 25 people. The community's percentage increase was about 3% over this period. This compares to a growth rate in the Western NWT of about 9% over the same period. Growth in Nunavut over the same period was about 16%.

Tuktoyaktuk Unemployment and Employment, 1996 Census

- Tuktoyaktuk unemployment rate: 26.9%
- Western Arctic unemployment rate: 11.7%
- National unemployment rate: 10.1%

4.3.5.3 Transportation Profile

Road Transportation

- There are local roadways in the community but no direct access from other communities; an ice road is cleared for access to Inuvik in the winter.

Marine Transportation

- Scheduled barge service typically operates between June and September.

4.4 Selected Statistical Profiles

The selected statistical profile data presented in Table 4.4-1 was extracted from the following data sources:

1. 1996 Census data. Statistics Canada.

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2. 1996 Census data. NWT Bureau of Statistics.
3. 1991 Census data. Statistics Canada.
4. 1991 Census data. NWT Bureau of Statistics.
5. 1994 Labour Force Survey. NWT Bureau of Statistics.
6. Social Assistance System Data. Various years. GNWT Department of Education Culture and Employment.
7. NWT Housing Corporation 1996 Housing Needs Survey. Special tabulations: November 25 and December 3, 1997.
8. NWT Population Projections 1991 to 2006. January 1993. NWT Bureau of Statistics.
9. Special Tabulation: Census Populations, Females 15 to 44, Average 5 year Births, Average Birth and Fertility Rates (1986 to 1996). July 15, 1998. NWT Bureau of Statistics.
10. NWT Food Price Survey, 1991. NWT Bureau of Statistics.
11. Prices Division, 1994. Statistics Canada.
12. Revenue Canada Taxation Data (1995 Returns).
13. Review of Income Support: April 1, 1995 to 1996/97. Lutra Associates for the GNWT Department of Education, Culture and Employment.
14. Community Economic Development: Data Profiles. November 1998. GNWT Department of Resources, Wildlife and Economic Development.
15. 1998 Retail Price Data. GNWT Department of Public Works and Services, Petroleum Products Division.
16. Aviation Statistics Centre, Statistics Canada. Cat. 51-004-XPB, 51-203-XPB.
17. A Study on Runway Issues in the NWT. March 1998. Vancouver International Strategic Services Ltd. for the GNWT Department of Transportation.
18. Statistics Quarterly. September 1998. GNWT Department of Transportation, Motor Vehicles Division (special tabulation request).

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19. Northern Territories Transportation Systems Study, Draft Final Report, October 1998. Prolog Canada Inc. for Transport Canada and the Northern Territories.
20. NTCL Administrative Records, Personal Communication. December 14, 1998.
21. Annual Report of the Registrar. GNWT Department of Transportation, Motor Vehicles Division. Also special tabulations.
22. Highway Traffic, 1997. August 1998. GNWT Department of Transportation.
23. Transportation Statistics Report, 1998. GNWT Department of Transportation.
24. Alternatives for Resupplying the Mackenzie Valley, Delta and Arctic Coast Communities. March 1997. Nexus Group for the GNWT Department of Transportation.
25. Fur Harvest Records Database. GNWT Department of Resources, Wildlife and Economic Development. January 1999. Prices based on auctions sales records and for Revolving Fund Payments.
26. GHL Data Base. GNWT Department of Resources, Wildlife and Economic Development, Corporate Services Division. January 1999.

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Selected Characteristics	Western NWT		Aklavik		Ft. McPherson		Inuvik		Tsiigehtchic		Tuktoyaktuk		(see Data Sources)
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
HOUSING TENURE (1996)(excludes Band Housing)													
Owned		48.9	65		115		335		35		65		1, 2
Rented		50.5	145		145		790		15		185		1, 2
Public Housing Units (1996)	2167		144		118		328		18		182		7
ETHNIC DISTRIBUTION (1996)													
Total		100.0		100.0		100.0		100.0		100.0		100.0	1, 2
Inuit		10.2		56.3		4.0		37.0		6.3		88.3	1, 2
Dene		27.8		23.2		81.1		14.1		78.1		2.1	1, 2
Metis		9.3		4.2		5.7		6.7		12.5		1.1	1, 2
Other Aboriginal		0.4		5.6		-		0.3		-		-	1, 2
Multiple Aboriginal		0.4		2.1		-		0.3		6.3		-	1, 2
Non-Aboriginal		51.8		9.2		9.7		41.9		6.3		9.0	1, 2
HIGHEST LEVEL OF SCHOOLING (1996)													
Total	27965	100.0	465	100.0	585	100.0	2300	100.0	105	100.0	610	100.0	1, 2
Less than Grade 9	4110	14.7	130	28.0	180	30.8	255	11.1	40	38.1	205	33.6	1, 2
Highschool without Certificate	6110	21.8	100	21.5	155	26.5	450	19.6	25	23.8	185	30.3	1, 2
Highschool with Certificate	2365	8.5	25	5.4	30	5.1	225	9.8	-	-	35	5.7	1, 2
Trade or other/ non-university	9280	33.2	170	36.6	170	29.1	905	39.3	40	38.1	140	23.0	1, 2
University without Degree	2590	9.3	10	2.2	15	2.6	175	7.6	10	9.5	20	3.3	1, 2
University with Degree	3510	12.6	20	4.3	30	5.1	290	12.6	10	9.5	30	4.9	1, 2

**Table 4.4-1
Selected Socio-Economic Conditions**

<i>Selected Characteristics</i>	<i>Western NWT</i>		<i>Aklavik</i>		<i>Ft. McPherson</i>		<i>Inuvik</i>		<i>Tsiigehtchic</i>		<i>Tuktoyaktuk</i>		<i>(see Data Sources)</i>
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	
	LIVING COSTS/ PRICES												
Food Price Index (Yellowknife = 100; 1991)			140		126		119		130		156		10
Nutritious Food Basket (weekly \$ for a family of four)			233		208		199		216		277		10
Thrifty Nutritious Food Basket (weekly \$ for a family of four)			214		188		184		199		265		10
Living Cost Differential (Edmonton = 100; 1994)			170-75		165-70		160-65		165-70		175-80		11
PETROLEUM PRODUCTS													
P50 Heating Fuel (\$/litre)	-		.478		.600		.478		.630		.640		15
Gasoline	-		.870		.775		.735		.782		.729		15
LABOUR FORCE ACTIVITY (1996)													
Population 15 yrs. and over	27965		465		590		2300		105		610		1, 2
Labour Force	21600		295		385		1765		65		335		1, 2
Employed	18925		225		300		1575		55		245		1, 2
Unemployed	2530		75		85		195		10		90		1, 2
Not in Labour Force	6360		170		210		530		40		270		1, 2
Participation Rate		76.7		63.4		65.3		76.7		61.9		54.9	1, 2
Unemployment Rate		11.7		25.4		22.1		11.0		15.4		26.9	1, 2

COMMUNITY SOCIO-ECONOMIC PROFILES

Employment/ Population Ratio		67.7		48.4		50.8		68.5		52.4		40.2	1, 2
<i>Selected Characteristics</i>	<i>Western NWT</i>		<i>Aklavik</i>		<i>Ft. McPherson</i>		<i>Inuvik</i>		<i>Tsüigehtchic</i>		<i>Tuktoyaktuk</i>		<i>(see Data Sources)</i>
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	
EMPLOYMENT BY INDUSTRY (1996)													
Goods Producing	3560	16.9	125	44.6	45	12.2	155	8.9	20	30.8	30	9.8	1, 2
Wholesale and Retail Trade	2510	11.9	20	7.1	25	6.8	210	12.1	-	-	30	9.8	1, 2
Government, Education and Health	8340	39.6	140	50.0	180	48.6	790	45.5	35	53.8	140	45.9	1, 2
Other Services	6795	32.2	55	19.6	100	27.0	590	34.0	-	-	95	31.1	1, 2

Notes:

Industry Categories

- Goods Producing Industries
- Wholesale and Retail Industries
- Government, Education and Health Industries
- Other Service Industries

Definitions

- Agricultural Industries; Fishing and Trapping Industries; Logging and Forestry Industries; Mining (including milling); Quarrying and Oil Well Industries; Manufacturing Industries; Construction Industries
- Wholesale Trade Industries; Retail Trade Industries
- Government Service Industries; Education Service Industries; Health and Social Service Industries
- Communication and Other Utility Industries; Finance and Insurance Industries; Real Estate and Insurance Agent Industries; Business Service Industries; Accommodation; Food and Beverage Service Industries; Other Service Industries

<i>Selected Characteristics</i>	<i>Western NWT</i>		<i>Aklavik</i>		<i>Ft. McPherson</i>		<i>Inuvik</i>		<i>Tsüigehtchic</i>		<i>Tuktoyaktuk</i>		<i>(see Data Sources)</i>
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	
TRADITIONAL ACTIVITIES (1994)													
Total Population 15 yrs. and over	28070	100.0	481	100.0	639	100.0	2303	100.0	100	100.0	628	100.0	5
Hunted or Fished	4946	17.6	143	29.7	200	31.3	225	9.8	35	35.0	336	53.5	5
Trapped	1360	4.8	38	7.9	82	12.8	158	6.9	19	19.0	84	13.4	5
Arts and Crafts	2737	9.8	85	17.7	108	16.9	224	9.7	17	17.0	107	17.0	5
Fur Harvesting (1996 and 1997)													
1996 Total Pelts Harvested	-	-	3537	-	1054	-	7135	-	693	-	335	-	25
1996 Total Dollar Value (\$000)	-	-	41	-	19	-	49	-	16	-	10	-	25

**Table 4.4-1
Selected Socio-Economic Conditions**

1996 Total Harvesters	-	-	36	-	33	-	51	-	16	-	18	-	25
<i>Selected Characteristics</i>	<i>Western NWT</i>		<i>Aklavik</i>		<i>Ft. McPherson</i>		<i>Inuvik</i>		<i>Tsiigehtchic</i>		<i>Tuktoyaktuk</i>		<i>(see Data Sources)</i>
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	
1997 Total Pelts Harvested	-	-	6988	-	4093	-	7923	-	1075	-	425	-	25
1997 Total Dollar Value (000)	-	-	47	-	56	-	51	-	27	-	18	-	25
1997 Total Harvesters	-	-	52	-	59	-	71	-	3	-	27	-	25
General Hunting Licence Holders, 1998	-	-	471	-	472	-	843	-	86	-	406	-	26
PERSONAL INCOME (1995 Return Data)													
All Returns (1995)	24570	100.0	400	100.0	490	100.0	1950	100.0	90	100.0	480	100.0	12
Total Income (\$000; 1995)	8e+05	-	7861	-	10431	-	67511	-	1821	-	10417	-	12
Taxable Returns	17680	72.0	180	45.0	270	55.1	1460	74.9	50	55.6	220	45.8	12
Average Personal Income (\$)	33743	-	19653	-	21288	-	34621	-	20233	-	21702	-	12
HOUSEHOLD INCOME DISTRIBUTION (1996)													
All Households	12605	100.0	220	100.0	265	100.0	1125	100.0	-	-	255	100.0	1, 2
Less than \$10,000	830	6.6	45	20.5	30	11.3	85	7.6	-	-	50	19.6	1, 2
\$10,000 - \$19,999	1335	10.6	40	18.2	45	17.0	110	9.8	-	-	55	21.6	1, 2
\$20,000 - \$29,999	1145	9.1	25	11.4	45	17.0	130	11.6	-	-	35	13.7	1, 2
\$30,000 - \$39,999	1020	8.1	25	11.4	25	9.4	90	8.0	-	-	20	7.8	1, 2
\$40,000 - \$49,999	1030	8.2	20	9.1	20	7.5	110	9.8	-	-	15	5.9	1, 2
\$50,000 and over	7265	57.6	80	36.4	90	34.0	595	52.9	-	-	75	29.4	1, 2
Average Household Income (\$)	-	-	31409	-	32825	-	42533	-	-	-	81726	-	1, 2

COMMUNITY SOCIO-ECONOMIC PROFILES

<i>Selected Characteristics</i>	<i>Western NWT</i>		<i>Aklavik</i>		<i>Ft. McPherson</i>		<i>Inuvik</i>		<i>Tsiigehtchic</i>		<i>Tuktoyaktuk</i>		<i>(see Data Sources)</i>
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	
SOCIAL ASSISTANCE													
Population on Income Support (includes recipients and dependents)			290	40.0	447	51.0	900	27.0	86	53.0	527	56.0	13
Total Social Assistance Payments(\$000; 1997/98)	9946.6		334.9		317.4		1206.7		102.1		548.7		6
Average Monthly social Assistance Payment (\$=000; 1997/98)	828.9		27.9		26.5		100.6		8.5		12.2		6
Cases per Month (Average for 1997/98)	1297		62		52		137		14		74		6
REGISTRATION OF MOTOR VEHICLES													
Total Registered Vehicles (1997)	30999	-											18
Licensed Drivers (1997)	33637	-											18
Average Daily Traffic													22
Aklavik Winter Road (1996)			41										22
Aklavik Winter Road (1993)			54										22
Tuktoyaktuk Winter Road (1997)											45		22
Tuktoyaktuk Winter Road (1995)											74		22

Table 4.4-1
Selected Socio-Economic Conditions

<i>Selected Characteristics</i>	<i>Total NWT</i>		<i>Aklavik</i>		<i>Ft. McPherson</i>		<i>Inuvik</i>		<i>Tsiigehtchic</i>		<i>Tuktoyaktuk</i>		<i>(see Data Sources)</i>
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	
HIGHWAY COLLISIONS													
Inuvik-Tuktoyaktuk Winter Road:													
1994	4												22
1995	1												22
1996	1												22
1997	2												22
Aklavik Winter Road:													
1994	0												22
1995	0												22
1996	1												22
1997	0												22
Dempster Highway:													
1994	27												22
1995	16												22
1996	14												22
1997	12												22
COMMUNITY HIGHWAY COLLISIONS													
Within Communities (1996):													
Involving Property Damage		-	1	-	9	-	49	-	9	-	3	-	21
Personal Injury		-	2	-	4	-	14	-	4	-	2	-	21
Fatal Injury		-	0	-	2	-	0	-	2	-	1	-	21
Total		-	3	-	15	-	63	-	15	-	6	-	21

COMMUNITY SOCIO-ECONOMIC PROFILES

Selected Characteristics	Western NWT		Aklavik		Ft. McPherson		Inuvik		Tsiigehtchic		Tuktoyaktuk		(see Data Sources)
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Within Communities (1997):													
Involving Property Damage		-	0	-	3	-	42	-	3	-	3	-	21
Personal Injury			4	-	5	-	14	-	5	-	2	-	21
Fatal Injury			0	-	1	-	0	-	1	-	0	-	21
Total			4	-	9	-	56	-	9	-	5	-	21
AIRCRAFT AND PASSENGER MOVEMENTS													
Passengers - Enplaned and Deplaned (1995)			5183		1210		23366		-		8546		16
Aircraft Movement - Take-off and Landings (1997)	-	-	1613	-	32	-	14904	-	No Airport	-	4345		23
CARGO MOVEMENT (1998) (General Merchandise and Construction Materials)													
NTCL Barge Cargo Movement													
Originating from Inuvik (tons)			19								450		20
Inuvik to arctic sites (tons)											406		20
NTCL Road Cargo Movement													
Originating from Inuvik (tons)					25								20

**Table 4.4-1
Selected Socio-Economic Conditions**

<i>Selected Characteristics</i>	<i>Western NWT</i>		<i>Aklavik</i>		<i>Ft. McPherson</i>		<i>Inuvik</i>		<i>Tsiigehtchic</i>		<i>Tuktoyaktuk</i>		<i>(see Data Sources)</i>
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	
INBOUND FREIGHT FLOW (1997)													
Marine:													
Bulk Fuel (tonnes)	54000												19
Resource/ Projects	6000												19
Community/ General	13000												19
Highway:													
Bulk Fuel	193162												19
Resource/ Projects	60731												19
Community/ General	125338												19
Air Cargo:													
Bulk Fuel	-												19
Resource/ Projects	-												19
Community/ General	2500						670						19
Total:													
Bulk Fuel	247162												19
Resource/ Projects	66731												19
Community/ General	140838												19
AIRCRAFT AND PASSENGER MOVEMENTS													
Passengers - Enplaned and Deplaned (1995)			5183		1210		23366		-		8546		16
Aircraft Movement - Take-off and Landings (1997)	-	-	1613	-	32	-	14904	-	No Airport	-	4345		23

5. HERITAGE RESOURCES

5.1 General

The following chapter of the environmental scoping report provides a review of the readily available literature on the known heritage resources of the Mackenzie Delta area with a particular focus on sites recorded in the vicinity of the proposed Inuvik to Tuktoyaktuk road corridor.

5.2 Status of Archaeological Resources

The earliest references to archaeological resources in the Mackenzie Delta are found in the journals of eighteenth and nineteenth century explorers who visited the region. In addition, some archaeological work was undertaken in conjunction with the multidisciplinary scientific expeditions of Stefansson (1919) in the early 1900s. A few other studies were undertaken in subsequent years and in 1954, MacNeish (1956) conducted archaeological investigations that included portions of the Mackenzie Delta. McGhee (1974) conducted the earliest systematic archaeological investigations in this region (Arnold 1983, 1988).

In response to gas and oil exploration in the 1970s and 1980s and the required impact assessments relating to such development, the Northern Oil and Gas Action Plan (NOGAP) was initiated. It was coordinated as a means of accelerating scientific data gathering and to increase the capabilities and levels of expertise for the government agencies involved in resource management and those in advisory or regulatory roles (Cinq-Mars and Pilon 1991). The Archaeology Project was one component of this multidisciplinary study. Involved were the Yukon Heritage Branch, the Prince of Wales Northern Heritage Centre and the Archaeological Survey of Canada (Canadian Museum of Civilization). This project made a significant contribution to the knowledge of archaeology in the areas involved which included, but were not limited to, the Mackenzie Delta, Tuktoyaktuk Peninsula and Eskimo Lakes areas. The number of recorded sites increased dramatically, a number of hypotheses were substantiated, new hypotheses were proposed and additional data was compiled on culture chronology, culture history and methodology, to name a few of the accomplishments (Cinq-Mars and Pilon 1991).

HERITAGE RESOURCES

It appears evident from the recent work conducted that the western Arctic has been occupied for thousands of years although not necessarily continually or consistently. Specific tools and/or subsistence behaviour can be associated with each of these periods of occupation. The earliest evidence of use (prior to circa 3500 years ago) is poorly represented and may include the Northwest Microblade tradition and/or Northern Archaic cultures. Between approximately 2000 and 3500 years B.P. (before present), the Palaeo-eskimo period is evident as characterized by the Arctic Small Tool tradition. Later prehistoric Inuit use was typified by a variety of cultures that appeared beginning around 2000 years ago. The final or Historic Inuit period is present during the last 200 years (LeBlanc 1991, 1994; Pilon 1994).

The earlier archaeological surveys and the majority of excavations tended to emphasize village and camp sites situated on major riverine or marine coasts within the Mackenzie Delta region. The many channels and island within the Delta have yielded a number of archaeological sites, including some significant village sites representative of different periods of occupation. Many of these archaeological resources are actively eroding because the earth's crust is subsiding as a result of the weight of the silt being deposited in the Mackenzie Delta (Arnold 1988). A portion of the NOGAP archaeology project involved rescue or salvage excavation of threatened sites in the region. However, this project also involved investigations in inland areas, including the Eskimo Lakes and Tuktoyaktuk Peninsula. Since a significant portion of the proposed road is located on this peninsula or near the Eskimo Lakes, these studies are particularly relevant.

Locally known as the Husky Lakes, the Eskimo Lakes are actually a long, shallow arm of the Beaufort Sea. Historically, the lakes provided a highway for travel via boat or dog sled and represented easy access to interior areas. They are also noted to be highly productive for caribou hunting and fishing, thus, it was expected that the archaeological potential in that area would also be good. Site densities have not been as high as expected, but not all portions have been surveyed intensively. Excavations at two archaeological sites have suggested site use between about AD 1400 and 1800. Excavations have also suggested the possibility of year round use of the Eskimo Lakes area and indicate that a range of subsistence activities were conducted (Morrison and Arnold 1994).

Three seasons of research into precontact Inuvialuit use of the interior of the Tuktoyaktuk Peninsula were conducted as part of the NOGAP project. The Peninsula is a long, low finger of land that is generally less than 40 km wide and is covered by numerous lakes. Permafrost is thick and continuous and pingos are a common landscape feature. The numerous creeks drain west into the Beaufort Sea or east into the Eskimo Lakes; the height of land (divide) is near the eastern edge of the peninsula. Large areas are poorly drained and dense shrub cover typifies the southern portion of the peninsula (Swayze 1994).

In total, twelve creek systems were investigated and nine precontact archaeological sites were recorded on six drainages. Most were located near the outlet of a lake, but two were situated on the shores of interior lakes and one was on a knoll above another site (Swayze 1994). Swayze (1994) notes that it was necessary to use a combination of helicopter survey and intensive ground reconnaissance because of the density of the vegetation. He has suggested intensive and possibly complex use of the interior of the Tuktoyaktuk Peninsula and the possibility of Palaeo-eskimo occupation. Figure 5.2-1 shows the general location of the archaeological sites located by Morrison and Arnold (1994) and Swayze (1994).

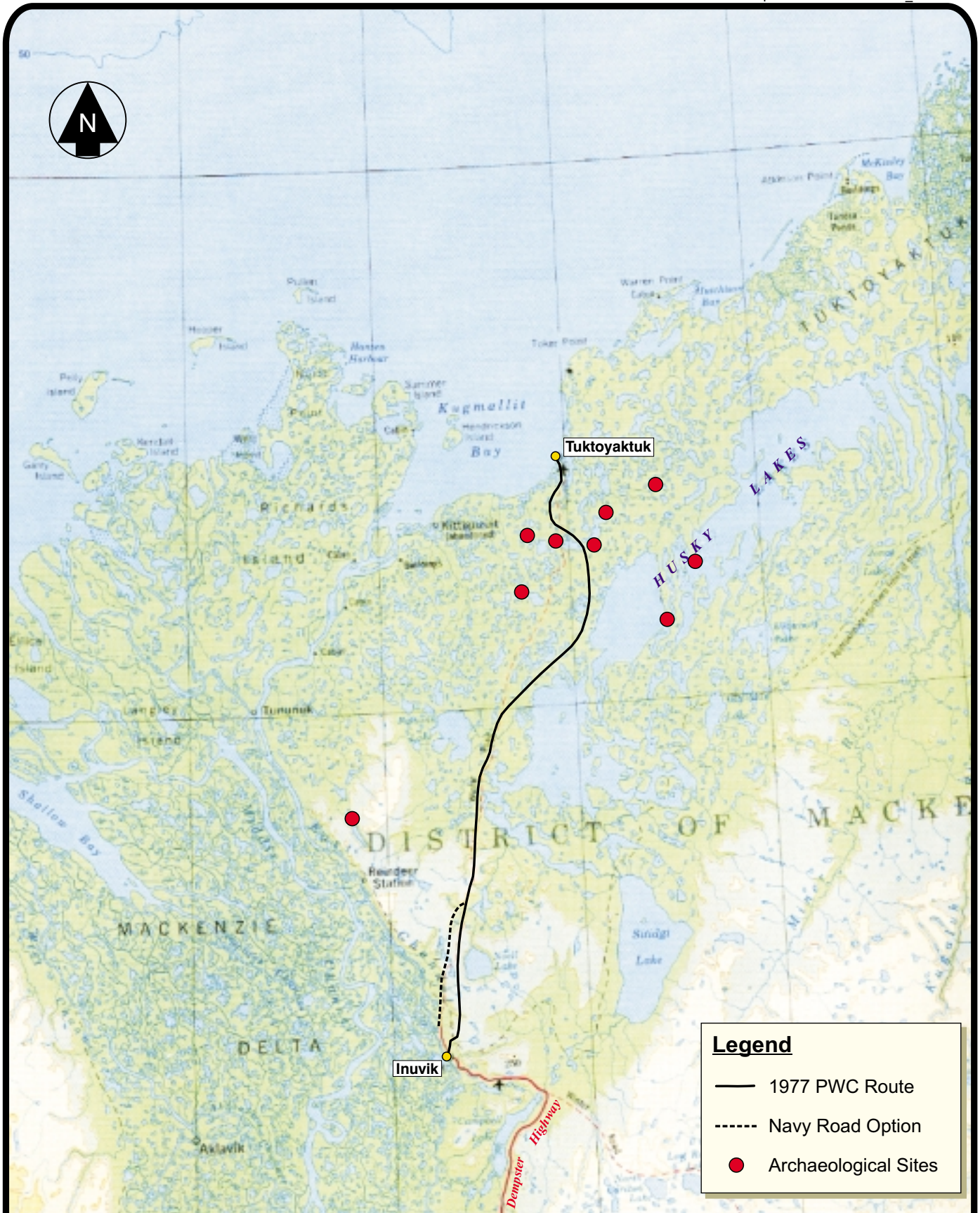
Near the proposed road study area, a pipeline right-of-way, winter trail and some proposed well sites were recently subjected to an archaeological assessment. The pipeline route is located at some distance from the proposed road route, but crosses similar terrain. No archaeological sites were located, but two previously recorded sites were revisited and one historic camp was identified along the pipeline right-of-way (Mason 1997). In the mid-1970s, a preliminary environmental assessment of an earlier proposed Inuvik to Tuktoyaktyuk Highway was conducted. As part of this assessment, Dr. Roscoe Wilmeth (1975) of the Archaeological Survey of Canada undertook a brief reconnaissance of two gravel reserves and an examination of the general alignment of the proposed road. No archaeological sites were found and he concluded that no further work would be required except in the vicinity of Tuktoyaktuk.

5.3 Future Actions

As indicated by the work conducted by Mason (1997), it is possible for narrow linear corridors such as pipelines and roads to be constructed without impact to archaeological resources. However, just because one corridor does not impact archaeological sites, does not mean that another similar right-of-way will not. As a result, it is recommended that further archaeological investigations be undertaken for this proposed road route, especially in light of recent studies along the Eskimo Lakes and in the Tuktoyaktuk Peninsula interior. Although the potential for archaeological sites is not high in the interior of the Tuktoyaktuk Peninsula, the existing data on archaeological resources indicate that they are sufficient to warrant further work. In addition, any ancillary facilities such as gravel borrow sites, work and staging areas and storage locations should be identified early in the planning process to permit the assessment of archaeological potential. Although Wilmeth (1975) did not feel there was sufficient potential for further work, it is likely that a different route is under consideration and archaeological methodology has improved since the 1970s.

Recent geomorphologic and archaeological studies associated with the NOGAP project have indicated that the archaeological potential within portions of the Mackenzie Delta is higher than previously expected. Sites have been found inland from the rivers and coast and along abandoned river and creek channels (LeBlanc 1994). Aerial photograph interpretation and helicopter survey have contributed significantly to the archaeological record, but ground reconnaissance is still required, especially in densely vegetated areas (Rampton 1991; Swayze 1994). Archaeological resources relating to the Arctic Small Tool tradition (Palaeo-eskimo), more recent prehistoric use, and the historic Inuit are present within the Mackenzie Delta and could be encountered within the proposed study area. In addition, it is possible that earlier occupations may be encountered on paleo-landforms and that evidence of non-Inuit historical activity will be found.

The first step in further investigating the archaeological resources of the Inuvik to Tuktoyaktuk Road study area should be to compile additional background data, including a review of the archaeology site inventory on file with the Canadian Museum of Civilization. Aerial photograph and topographic map interpretation of the proposed route should then be undertaken to identify landforms and areas with



Archaeological Sites Identified in the Vicinity of the Proposed Road Corridor

Figure 5.2-1



Source: Swayze, 1994, Morrison & Arnold, 1994

sufficient archaeological potential to justify ground reconnaissance (maps and air photos of a suitable scale would be required). This should be supplemented, if possible, by helicopter reconnaissance and consultation to access traditional knowledge relevant to the area of interest. Consultation with knowledgeable local residents or with other specialists who have worked in the area would be of considerable assistance in the determination of archaeological potential.

Once additional background research, topographic interpretation, consultation and preliminary field reconnaissance has been completed, it would be possible to determine the level and scope of future archaeological field investigations. It is likely that at least some detailed ground reconnaissance will be required since archaeological resources have been found on interior lakes near the proposed road route in the vicinity of the community of Tuktoyaktuk.

6. COMMUNITY CONSULTATIONS

A key component of the Environmental Scoping Project was the series of community open house meetings which were held in January, 1999 in each of the Mackenzie Delta communities, specifically Aklavik, Inuvik, Fort McPherson, Tsiigehtchic and Tuktoyaktuk (Figure 6.1-1).

The consultation sessions provided an important opportunity for the people of the Delta communities to learn more about the status of the Inuvik to Tuktoyaktuk road proposal and to help with the identification (scoping) of environmental, social, cultural and other issues that should be considered during the planning and approvals process should the road be developed.

The following provides a brief description of the format used for each of the community meetings, the main issues raised and overall conclusions arising from the meetings.

6.1 Open House Community Meetings

Planning for the community consultation meetings began in late October. Mr. Knute Hansen, Manager of Western Arctic Trade and Tourism (WATT) in Inuvik was retained to assist with community liaison and to arrange dates, venues and support systems for the series of meetings.

Letters of introduction from the GNWT Department of Transportation and follow-up correspondence including multiple copies of a public information backgrounder on the project (Appendix 6-1) were forwarded to the mail-out list provided in Appendix 6-2. This information assisted in preparing the communities for their participation in the upcoming open houses.

The dates and locations of each of the community consultation meetings are provided in Table 6.1-1.

COMMUNITY CONSULTATIONS

**Table 6.1-1
Dates and Locations of Community Consultation Meetings**

Community	Date	Location
Inuvik	January 18, 1999	Midnight Sun Recreation Complex
Aklavik	January 19, 1999	Sittitchinli Recreation Centre
Fort McPherson	January 20, 1999	Hamlet Council Chamber
Tsiigehtchic	January 21, 1999	Community Gym
Tuktoyaktuk	January 25, 1999	Kitti Hall

During the week prior to the community consultation sessions, and throughout the week of the meetings, regular announcements were carried on CBC radio. In addition, the team's translator-facilitators participated in radio broadcasts for several of the communities to encourage people to attend and Tuktoyaktuk advertised their meeting on the local television station.

The community consultation session followed an informal open house format with poster and display material provided to inform the participants about the proposal and to encourage discussion on a one-on-one basis with members of the project team.

Each open house community consultation session typically began between 12:00 and 1:00pm and generally ran until about 6:00pm. All of the communities were advised that a somewhat more formal presentation and discussion period would follow commencing around 7:00pm. However, with the exception of Tuktoyaktuk, which clearly wanted the presentation, none of the other communities took advantage of this opportunity. In most cases, other community events conflicted directly with the presentation time frame.

The other element of the open house format was that the elder interviews were held in the same venue and concurrently with each of the open houses. This resulted in elders being present and participating in the open houses along with members of the younger generations. The net result was that in most communities, at least four generations of some families participated in the open house sessions.



**Proposed
Inuvik-Tuktoyaktuk Road**

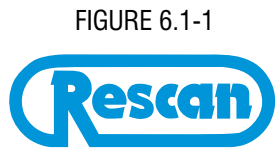


FIGURE 6.1-1

6.2 Project Team

The project team for the community open house sessions consisted of:

Ms. Colleen English	- GNWT DOT
Mr. Rick Hoos	- Rescan
Mr. Rod Hildebrandt	- Dillon
Mr. Jimm Simon	- Aimm North
Ms. Bertha Francis	- Gwich'in Translator-Facilitator
Ms. Agnes White	- Inuvialuit Translator-Facilitator
Mr. Knute Hansen	- Community Liaison & Northern Coordinator

6.3 Results of the Community Consultations

6.3.1 Inuvik

The community open house at Inuvik took place on January 18, 1999, at the Midnight Sun Recreation Complex. The open house began around 1:00pm and community members came and went throughout the afternoon. The elders, many of whom were transported to the meeting by the project team, generally came in groups of two or three to participate in the traditional knowledge interviews. Plates 6.3-1 to 6.3-4 show some of the scenes from the Inuvik open house.

The sign-up list provided in Appendix 6-3 included 20 signatures. However, when combined with the 12 elders and other individuals who did not sign in, it was estimated that approximately 50 people participated in the Inuvik open house.

In addition, on January 22, 1998, the project team set up the poster display in the lobby of Samuel Hearne Secondary School and obtained further insights on the proposed road project from the youth (Plates 6.3-5 and 6.3-6).

Many of the comments or questions received were consistent with those obtained from the elders during the traditional knowledge interviews (refer to Section 7.3-1).

Table 6.3-1 summarizes the main points or questions raised at the Inuvik community consultation session. The information has been sorted into five general categories but some of the issues were more holistic and could have been identified with more than one category.

COMMUNITY CONSULTATIONS

Table 6.3-1
Issues/Questions Raised at Inuvik Community Consultation Session

Project/Routing Issues
<ul style="list-style-type: none">• Good project for the region.• Great road for biking to Tuk (recreational/touring opportunity).• Safer than the ice road.• Stay away from Noell Lake (because of cabins and fishing by the people of Inuvik).• The two most common snowmobiling trails are across Stanley Creek, across Noell and Jimmy lakes and head northeastward to Husky Lakes, or come up Old Navy Road then cross over diagonally toward Husky (close to the PWC 1977 alignment).• A possible source of funding (for the project) may be Interprovincial Gas Pipeline company.• Is there a possibility of running a feeder gas pipeline off the Ikhil pipeline up to Tuk?• The Arts Festival in Inuvik is a big draw for tourists every summer (potential road users).• Norm Snow and Carl Falsnes are looking into the operation of a hovercraft for local tourism on the Mackenzie River.
Husky Lakes Issues
<ul style="list-style-type: none">• Trapping is done near Parsons Lake.• Caribou hunting occurs northwest of Husky Lakes.• Common fish species in Husky Lakes include herring/cisco, inconnu, trout and pike. Also, beluga whales are known to enter the lake system and sometimes become stranded.• Sonatuk Fishing Lodge is owned by James Gruben and is located on the northern part of Husky Lakes.• Be careful around Husky Lakes (because of environmental sensitivities).
Socioeconomic Issues
<ul style="list-style-type: none">• Can visit relatives more easily (improved access).
Regulatory/Timing Issues
<ul style="list-style-type: none">• The IFA Sections 8(1) and 8(2) outline special considerations which must be satisfied for the Husky Lakes area.

In general, the participants from Inuvik did not appear to have many concerns about the proposed road and most would like to see it be developed. Based on their experience with the Dempster highway into Inuvik, they seemed to feel that environmental issues could be managed but the environmental importance of the Parsons Lake - Husky Lakes area was generally well recognized and extra precautions would have to be taken in this area (consistent with IFA Sections 8(1) and 8(2).)

Noell Lake was also identified as an important fishing lake for some residents of Inuvik that will require future “protection.”

6.3.2 Aklavik

The Aklavik community open house was held on January 19, 1999, at the Sittitchinli Recreation Centre. The open house began at 1:00pm although a number of community members were present during the set-up period. Several of these same individuals stayed for much of the afternoon.

The sign-up list provided in Appendix 6-3 included about 25 signatures. However, this did not include the 12 elders who were interviewed at the open house, nor other participants who did not sign in. When these are considered, it was estimated that approximately 50 people participated in the Aklavik open house.

The project team was also invited to have dinner at the Aklavik Senior Citizens Home. This provided another opportunity to discuss the proposed project road with some additional elders. Plates 6.3-7 to 6.3-9 show some scenes of participants and activities at the Recreation Centre and Plate 6.3-10 was taken at the Aklavik senior citizens' home.

In addition to the comments received from the elders (refer to Section 7.3-2) Table 6.3-2 summarizes the main points or questions raised at the Aklavik community consultation Session. The information has been sorted into five general categories but some of the issues were more holistic and could have been identified with more than one category.

**Table 6.3-2
Issues/Questions Raised at Aklavik
Community Consultation Session**

Project/Routing Issues
<ul style="list-style-type: none">• Question on how much in royalties will have to be paid to the Inuvialuit for the gravel sources.• Building the road quicker is preferred over something like a community road building program.• How about a road from the Dempster to Aklavik?• Concern about the ice road if Tuk no longer needs it.
Husky Lakes Issues
<ul style="list-style-type: none">• More and more cabins, tents <i>etc.</i> are appearing in the area around Husky Lakes, along with more garbage and mess. Worry about this area lately and the condition it is in.

(continued)

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Table 6.3-2
Issues/Questions Raised at Aklavik
Community Consultation Session (Completed)

Other Environmental Issues
<ul style="list-style-type: none">• Good to build road now because we can learn from the mistakes made with the Dempster re: hunting, fishing, increased access, <i>etc.</i> and plan ways to avoid repeating those mistakes.
Socioeconomic Issues
<ul style="list-style-type: none">• Train and employ locals to patrol the roads. Could be through RWED or the Inuvialuit Game Council or HTA's.• Good to visit friends and relatives.

In general the participants from Aklavik appeared to be supportive of the proposed road project primarily for the people of Tuktoyaktuk but they were not sure that it would help their community very much. A number of residents also indicated that Aklavik would like direct year-round road access to the Dempster Highway.

6.3.3 Fort McPherson

The Fort McPherson open house took place on January 20, 1999. It was originally scheduled for the Recreation Complex, but an unforeseen schedule conflict caused our venue to be relocated to the adjacent Hamlet Council Chamber thanks to the cooperation of Mayor Philip Blake.

The sign-up list provided in Appendix 6-3 included about 20 signatures. In addition, 17 elders were interviewed and a number of other community members participated without signing in. In total approximately 45 people attended the Fort McPherson open house. Plates 6.3-11 to 6.3-13 were taken during this session.

In addition to the elders comments (refer to Section 7.3-3) Table 6.3-3 summarizes the main points or questions raised at the Fort McPherson community consultation session. The information has been sorted into five general categories but some of the issues were more holistic and could have been identified with more than one category.

**Table 6.3-3
Issues/Questions Raised at Fort McPherson
Community Consultation Session**

Project/Routing Issues

- Any camps developed should be a certain distance from the highway, and this distance should be specified prior to development.
- Should not be considered an extension of the Dempster nor named the Dempster as the man the current road was named after never used the proposed area (between Inuvik and Tuktoyaktuk).

Husky Lakes Issues

- Like the road as it provides good access to Husky Lakes.

Other Environmental Issues

- Educate the hunters and locals in an effort to protect the environment and keep it clean.
- Tourism outfitters currently operating in this area have been quite good lately at keeping the areas they use clean.
- Caribou walk on the highway when there is lots of snow.

Socioeconomic Issues

- Don't believe the road will drop prices significantly enough for that to be the sole reason for construction.
- Building this road will mean a loss of more traditional methods of hunting.
- Lots of complaints are received by tourists that they are not able to drive to Tuk/ocean (improved access).
- Need to determine where existing traplines are along where the road would be constructed. RWED controls this and apparently the process is very structured.
- It will make life a lot easier over there (for the people of Tuktoyaktuk).
- This road would be good for the people of Tuk.
- Gwich'in want to be involved in road construction and maintenance.
- Hunters have shot and killed other hunters on the Dempster. Must be even more careful on the tundra where there are no trees.

Regulatory/Timing Issues

- Have monitoring and patrolling of the road organized by the Inuvialuit Game Council office so that their own people will be involved.
 - Restrictions for the road (*e.g.*, hunting, garbage, fishing, *etc.*) must all be defined and agreed upon before construction occurs.
 - Should attempt to get all regulatory and Aboriginal organizations together in an effort to work out all zoning/restrictions/authority *etc.* prior to development.
 - Elders should be able to hunt within a "no-hunting" corridor on either side of the road, if one is put into place.
 - Signage outlining fines for various offenses should be erected along the road at regular intervals and especially near highly sensitive areas.
 - Yukon wildlife officers police their area more regularly than GNWT officers.
 - Several people from McPherson have been fined (\$100) for not cleaning up the guts (caribou) on the Dempster Highway.
 - Completion of the Mackenzie Highway would be better (for business as it would complete the circle tour).
-

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The people of Fort McPherson have almost daily experience with the Dempster Highway and a number work for the Highways Department. There were no great concerns expressed about the proposed road and many would like to see it be developed because it would bring more tourists and business up the Dempster en route to the Arctic Ocean.

However, one local business person felt strongly that the region would benefit more from the construction of the Mackenzie Highway as this would complete the circle route for tourists who would prefer not to have to return via the same route.

6.3.4 Tsiigehtchic

The Tsiigehtchic open house was held on January 21, 1999, at the Community Gymnasium. Although it was exceptionally cold on that day a number of residents participated in the consultation session, facilitated by the project team driving people to and from gym to their residences.

The sign-up list (Appendix 6-3) recorded 12 signatures, but at least 10 other community members and 14 elders participated in the open house, for a total of approximately 40 participants. Plates 6.3-14 to 6.3-16 show some scenes from the Tsiigehtchic open house.

Most of the elders comments are presented in Section 7.3.4. Table 6.3-4 summarizes the main points or questions raised at the Tsiigehtchic community consultation session. The information has been sorted into five general categories but some of the issues were more holistic and could have been identified with more than one category.

In general the community of Tsiigehtchic appeared to be supportive of the proposed road, and was interested in “shared benefits” from both construction and long-term operation of such a road.

**Table 6.3-4
Issues/Questions Raised at Tsiigehtchic
Community Consultation Session**

Project/Routing Issues
<ul style="list-style-type: none"> • Is it possible to link the Inuvik-Tuk road to the pipeline service road and then cut across to the proposed route? Could reduce costs (there will be no permanent service road)? • Good choice of routing.
Other Environmental Issues
<ul style="list-style-type: none"> • Tsiigehtchic has good caribou over the hill. • The existing road does not bother the caribou. • There are good berries along the route.
Socioeconomic Issues
<ul style="list-style-type: none"> • Would intermarriages between the Inuvialuit and Gwich'in increase? • Gwich'in want jobs on the new road just as Inuvialuit got jobs on the Dempster construction.
Regulatory/Timing Issues
<ul style="list-style-type: none"> • An agreement for use between the Inuvialuit and Gwich'in should be developed for hunting, outlining the quotas and procedures each organization would have to follow. • Regulatory monitoring should occur near the lakes and the road (Husky, Noell and Parsons lakes). • Hunting would have to be controlled (to protect people).

6.3.5 Tuktoyaktuk

The open house at Tuktoyaktuk was held on January 25, 1999, at Kitti Hall. The event had been well advertised on the local television station as well as on CBC radio. In addition Mayor Ernest Pokiak and members of the Inuvik-Tuktoyaktuk Highway Committee had expended considerable effort to encourage attendance. These activities contributed to a good turnout at the open house, which ran from approximately 1:00pm to 5:30pm and the evening presentation and discussion period, which extended from 7:00pm to 10:30pm. The poster material remained on display throughout the evening session.

Fifty-seven (57) community members were registered on the sign-up sheet. When combined with the 22 elders and an estimated 20 other individuals who did not sign the sheet, approximately 100 people attended the Tuktoyaktuk open house. Plates 6.3-17 to 6.3-25 are representative of the activities at the Tuktoyaktuk community meeting. Because of the familiarity of many people in Tuktoyaktuk with the area around Husky Lakes and the Tuk peninsula in general, informative

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discussions took place on particularly sensitive locations near the Husky Lakes. This resulted in the identification of three critical areas where consideration should be given to moving the proposed route further away from the shoreline of Husky Lakes, if possible. These locations were marked on the satellite map of the route which has been provided to GNWT DOT.

Extensive comments and constructive discussions took place during both the open house poster session and, in particular, the evening presentation. The results of the elder interviews for the community of Tuktoyaktuk are summarized in Section 7.3.5.

Table 6.3-5 summarizes the main points or questions raised at the Tuktoyaktuk open house and evening meetings. The information has been sorted into five general categories but some of the issues were more holistic and could have been identified with more than one category.

**Table 6.3-5
Issues/Questions Raised at Tuktoyaktuk
Community Consultation Session**

Project/Routing Issues
<ul style="list-style-type: none">• The high ground, most level ground, and gravel on the Tuk peninsula are located along the west side (alongside Husky Lakes).• The interior power line route is very hummocky, with steep slopes and many lakes, is very wet in summer, and has lots of exposed permafrost.• Why was this route chosen and what were the engineering considerations?• The main concern with this proposal is the proximity of the route to Husky Lakes. As the route is shown now, there are three main areas of concern that should be moved 2.5 km or more away from Husky Lakes.• Can we move the area of the road to near the Mackenzie River?• We (stakeholder committee) chose and agreed to this route as it was shortest and cheapest. Also, the most work has been done on this route in the past.• Has there been any consideration to sharing the costs of this road with the Ikhil Pipeline project, then cutting across the area north of Inuvik to the proposed route? It was pointed out that the Ikhil maintenance road was a temporary access/right-of-way because it is a buried pipeline and a permanent road is not needed near the gas pipeline, in general. Therefore, cost sharing would not be applicable.

(continued)

**Table 6.3-5
Issues/Questions Raised at Tuktoyaktuk
Community Consultation Session (Continued)**

Husky Lakes Issues

- The high ground, most level ground, and gravel on the Tuk peninsula are located along the west side (alongside Husky Lakes).
 - Many cabins are located along the lake. Improved access can be both good and bad for the owners of the cabins (facilitates access for them, but also for others).
 - It makes sense to follow the high ground but stay away from Husky Lakes at the critical spots.
 - Tourist use of the road and natural resources, especially around Husky Lakes must be controlled.
 - Main concern with this proposal is the proximity of the route to Husky Lakes. As the route is shown now, there are three main areas of concern that should be moved 2.5 km or more away from Husky Lakes.
 - One person felt it should be five to ten miles away with no access roads to the lake. Access trails are O.K., just nothing that can be travelled by truck or car. Concern that this area would be exploited and therefore not available for future generations if constructed so close to Husky Lakes.
 - How can it be assured that Husky Lakes will be protected?
 - The Husky Lakes are already used 7-8 months of the year and not regulated. With the road, it would be easier to regulate the use of the Lakes.
-

Other Environmental Issues

- Concern about the caribou in the area were raised by a study done about 10 years ago by the Inuvialuit.
 - Our own people leave garbage around the Husky Lakes area, so how can the community do this and then outline so many environmental concerns for this area?
-

Socioeconomic Issues

- Concern that construction of a road would cause more children to lose their culture and acquire 'bad habits.'
 - Should bring up the training facility for heavy equipment operators from Fort Smith so the hauling etc to help build the road could be done by students.
 - What other communities were consulted and why?
 - A local survey about a potential road was done by the community and is available from the Hamlet. Three hundred people were surveyed. No questions were asked about routing, just how everyone would feel about a road. 267 people were in favor and 29 were opposed to having a year-round road.
 - We know a good amount of jobs and (increased) mobility of the community will come from this development and that we can implement certain controls to mitigate potential problems.
 - We (the community) are looking at only the negative aspects of this project and not looking at the positive aspects. The GNWT/consultants should try to focus more on positive issues in their report, as well.
 - The ice road closing every spring causes depression within the community. It is nice to be able to get out for shopping/socializing.
 - The idea of a road is bad because it takes away from the airline industries. Seasonal road access is fine.
 - We should work on building the road now as resources in the NWT are depleting. Would like to see our (the community's) tax money benefit locally, not down south.
 - What construction companies will get this work? Is there any way to ensure that community people will get benefits as well as the construction companies?
-

(continued)

Table 6.3-5
Issues/Questions Raised at Tuktoyaktuk
Community Consultation Session (Completed)

Regulatory/Timing Issues

- Will there be a no-hunting corridor along the road?
 - How can it be assured that Husky Lakes will be protected?
 - Why would there be more enforcement in one area versus another? (*i.e.*, Dempster vs. this proposed road) - referring to the answer to the above question about patrolling etc. and how the Dempster patrolling efforts have been relatively inefficient.
 - Inuvialuit would have to work together with RWED and other regulatory agencies to make it work.
 - Would like to have regulations similar to the Gwich'in in that Inuvialuit could shoot right off the road, but others could not.
 - What would be the role of the ISC and how would they prevent harmful effects of the project?
 - If we (the community) chose to deviate from the route, we have to realize it will take forever to get something, if anything done. Therefore we must look into the possibility of changing this route at the critical points. Also, permits from various governing agencies will outline what can and cannot be done in the area.
 - Has there been any thought/consideration given to the possibility of requiring land exchanges with the Inuvialuit, as it is a public road?
 - Regulations-wise, what would be required to build a road through this area?
 - Parks Canada is currently working on a protection/management plan for the Pingos?
 - What are the timelines for this project? Is there any way we (the community) can help speed it up?
 - Will the route be finalized by March 31, 1999?
 - What route is being looked at in the other studies for this road?
 - How long will it take to build the road?
 - A lot of organizations are trying to find ways to make this happen. Need an agency to help get the funds. How do we twist political arms and strategize for getting funding? Got to give something to get something and become a meaningful participant. Need someone to put it all together for the Inuvialuit. If the Inuvialuit are ready, the government should support and give them a chance to do it.
-

The community of Tuktoyaktuk showed the most interest in the proposed road development. This was reflected in the excellent attendance at both the afternoon and especially the evening presentation session.

Community leaders and members participated actively in the evening session and raised many important and constructive points. No one was opposed to the idea of a road and most appeared to understand the logic of locating it along the route presented. However, some people were genuinely concerned for the natural

resources and cabin owners in the Husky Lakes area. Three critical sites (nearest the lakeshore) were marked on the poster-size satellite map of the proposed route. These sites are identified in Figure 6.4-1. For these areas it was recommended that the route be realigned further inland, preferably at least 2.5 kilometres away from the shoreline, if possible.

It was also indicated by a number of residents that because of the importance of the Husky Lakes area to the community and the natural resources of the area, road and associated access-related activities of future road users should be carefully managed and enforced. Such a regime was likened to controls exercised on users of Canada's National Parks and other protected areas. Mr. Hans Arends, Land Administrator of the Inuvialuit Land Administration confirmed the authority of the ILAC to carefully regulate any land use activities in the Husky Lakes area as well as any other 7(1)(a) and 7(1)(b) lands in the Settlement Region (refer also to Section 8.4.8).

The evening session at Tuktoyaktuk ended around 10:30pm.

6.4 Summary and Conclusions

Section 6.3 of this chapter reviewed the main points or questions raised at each of the five Delta community public consultation sessions. Based on the inputs received from each of these sessions the following general conclusions were drawn:

1. Participating residents from all the Delta communities supported the concept of the proposed road from Inuvik to Tuktoyaktuk. None of the participants expressed opposition to the proposed road.
2. Notwithstanding the high degree of support for a road, a number of residents, particularly from Tuktoyaktuk, expressed concern over the proximity of the proposed road to the shore of Husky Lakes. Three critical sites were identified on a satellite map of the proposed route (Figure 6.4-1) where a preference was expressed to relocate the route 2.5 km or more inland from Husky Lakes, if possible.

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The primary rationale for relocating the alignment further inland was to reduce possible negative impacts on the fish and wildlife values of this area as a result of road construction and increased access and harvesting by the general public.

3. Many residents felt that human activities on and adjacent to the road should be carefully regulated. It was generally assumed that the Inuvialuit regulatory bodies, game councils, *etc.*, would play an important role in controlling the activities of the general public on their land. Activities to be regulated included access to the land, hiking and camping, hunting and fishing, and pollution control.
4. Many residents expected that the construction of the road would benefit the regional economy by generating construction and maintenance jobs, business opportunities, lower costs for consumables and improved vehicle access between Tuktoyaktuk and other Delta communities.

Some residents were concerned that construction of the road would have negative effects on the Inuvialuit culture and that efforts should be taken to minimize these impacts.



Critical Sites Along the Husky Lakes Identified During Community Consultation Meetings, January 25, 1999

Figure 6.4-1



Source: Department of Energy, Mines and Resources, Ottawa, Canada, 1976. Firth River NR-7/8/9

7. TRADITIONAL KNOWLEDGE

Mangilaluk (Bernard's Highway)

Over the course of five days of interviews in five different communities, several elders made reference to the story of three boys who had walked away from school in Inuvik and attempted to make their way to Tuktoyaktuk. No one could remember many details, but they knew that some had died and that it was many years ago.

Twenty elders had already been interviewed in Tuktoyaktuk after a full day of community consultation when I was approached by Agnes White and an Inuvialuit elder and told that the lady had something important to say.

The woman identified herself as Alice Felix and told me that in the 1960s her ten-year old son Bernard, a 14-year old boy named Dennis Dyck and a boy from Sachs Harbour left school in Inuvik and walked overland in the direction of Tuktoyaktuk. There was no sign of the boys for three to four weeks. Along the way one boy became sick and hungry. His legs became infected from insect bites and he died. Sometime later the boy from Sachs Harbour was lost in the fog and never seen again.

Bernard followed the high ground above Kittigazuit and Whitefish station. When he saw the pingos he knew he was home. Bernard was so dirty and cold when he neared Tuktoyaktuk that people who saw him thought he was a brown bear.

Alice said that when a highway is built people say it should be called Bernard's highway, but that she thinks it should be named after Bernard's eskimo name, after Bernard's grandfather Mangilaluk.

This story is presented as a preface to illustrate the length of time and the depth of thought that Inuvialuit elders have given to highway construction over the decades.

- Jimm Simon

7.1 Background

The Inuvik-Tuktoyaktuk road has been discussed by area residents since the construction of the Dempster highway. Gwich'in and Inuvialuit elders are very conversant with the environmental and social impacts of living in association with a road system, both all-weather and ice roads, for over 30 years. They have experienced life in their communities for long periods of time before and after road construction. Discussions with over eighty Gwich'in and Inuvialuit elders in the five communities of the Mackenzie Delta produced a response of unanimous support for the concept of an all-weather road with very few concerns. One major concern that did arise was the proximity of the road to the west shore of Husky Lakes.

7.2 Methodology

Interviews with elders were conducted in the communities of Inuvik, Aklavik, Fort McPherson, Tsiigehtchic and Tuktoyaktuk (Figure 6.1-1). Interviews were conducted concurrently with public awareness meetings in each community. The combination of personal guided interviews and public presentation allowed elders access to large scale maps, photos and the technical expertise of a government official and an engineer. This additional expertise was utilized on several occasions to address specific questions and address elders' concerns.

Originally conceived as a full-scale traditional environmental knowledge study involving the training of local interviewers to conduct exhaustive taped interviews with elders, this study was modified for several reasons. As indicated, the Tuktoyaktuk-Inuvik road proposal has been discussed for over thirty years, the concept of this road is not a new subject for the elders. The study request for proposal detailed this as a scoping study to determine any contentious or newly arising issues that may require further in-depth study. Based on this purpose it was felt that maximum benefit would be gained, within the budgetary and time constraints of the study, by interviewing as many elders in each community as possible rather than concentrating on a select number of in-depth elder interviews.

To ensure some consistency in information retrieval, each interview was conducted by Jimm Simon (researcher) with the assistance of a Gwich'in and an Inuvialuit translator/facilitator (facilitators) (Appendix 7-1). The use of a

questionnaire form (Appendix 7-2) and/or the use of maps and additional visual materials supplied by Rescan and Dillon guided each interview.

Elder selection was completed in each community, through the facilitators, after our arrival. The interviewer relied on the facilitators to identify and locate elders. Elders were notified of the meetings in some instances by the facilitators making native language announcements on the radio. In most instances this was followed by the facilitators phoning elders after our arrival in the community. A suggested number of 15 elders in each community was the stated goal that we would attempt to achieve. During an initial team meeting in Inuvik prior to the start of the interview process it was decided by the facilitators that elders selected should be a minimum of 50 years of age and knowledgeable about traditional life and the land.

In most instances elders made their way to the community meeting. The team assisted in this process by providing rides to and from the meeting as needed. Some exceptions to this process included completing some interviews in elders' homes for those who could not get out and completing some interviews in the Aklavik seniors' residence.

Elders in each community were supplied with doughnuts, coffee and tea. Many elders spent long periods of time with the research team both before and after the interviews were completed. During this time they chatted amongst themselves and with members of the team other than the researcher and facilitators. In some cases this led to additional questions or points of information relevant to the road study that were included in the interview forms.

Upon completion of their interview each elders' name was recorded by the researcher and each elder was asked to sign their name to indicate that they had willingly given the information provided and that they had received an honorarium in recognition of their time and contribution. On at least one occasion the request for a signature was overlooked and some elders signed their names with an 'X'. On no occasion did an elder refuse to provide information in an interview or provide their signature following an interview.

7.3 Data by Community

The following section reviews the data retrieved from each community. The information is presented by community in the order that communities were visited.

7.3.1 Inuvik

Water is what goes in our stomachs.

– *Florence Carpenter*

Interviews in Inuvik were conducted in the Midnight Sun Recreation Complex on January 18, 1999 in association with the general community consultation. As Inuvik was the first community in which consultation took place the day began with a morning meeting between the facilitators, the researcher and Knute Hansen. This was our first face-to-face meeting, having done some initial introductions with each other by phone. At this meeting we established some protocol for selecting and notifying elders and outlined some thoughts on the projects and how the elder interviews would be conducted. Bertha, Agnes and Knute started to scan the Inuvik phone book for recognized elders' names and numbers, and then to phone elders.

Following a lunch break elders began to arrive at the arena on their own. Additionally, some elders who requested were picked up by one of the other team consultation members and driven to and from the arena for interviews.

Interviews in Inuvik were conducted in both English and the appropriate language (Gwich'in or Inuvialuit) None of the interviews were conducted exclusively in an aboriginal language.

A total of twelve interviews were completed - four with Gwich'in and eight with Inuvialuit.

Data were collected using the general categories presented in Table 7.3-1 as a guide.

**Table 7.3-1
Results of Inuvik Interviews**

Category	No. of Comments	Comments
Animal Migration	2	<ul style="list-style-type: none"> ▪ Caribou cross the Dempster unaffected
	1	<ul style="list-style-type: none"> ▪ Reindeer move anyway
	1	<ul style="list-style-type: none"> ▪ It wouldn't bother caribou or moose
	1	<ul style="list-style-type: none"> ▪ Expressed concern that the road could bother calving if it was in the calving grounds
Modern Camps		<ul style="list-style-type: none"> ▪ There are some modern camps along the proposed route
Historic Camps (archaeological)	1	<ul style="list-style-type: none"> ▪ People used to live there long before our time and road builders should watch for their sites
	1	<ul style="list-style-type: none"> ▪ Mammoth tusks and fossils are along the proposed route
Fishing	4	<ul style="list-style-type: none"> ▪ Husky Lakes important for fishing, pollution from road and road chemicals could affect this
	1	<ul style="list-style-type: none"> ▪ Road could provide easy access so they could stop and fish
	1	<ul style="list-style-type: none"> ▪ Road needs to be further away from lakes
Hunting	2	<ul style="list-style-type: none"> ▪ Road would provide easy access for hunting, it would be better for cleaning animals and keep the land clean
	1	<ul style="list-style-type: none"> ▪ There are hunting camps starting at Husky Lakes and a road could affect them
	2	<ul style="list-style-type: none"> ▪ There are traplines along route, road needs signage where it crosses traplines
	1	<ul style="list-style-type: none"> ▪ Better for Gwich'in and Inuvialuit to manage caribou herds
	1	<ul style="list-style-type: none"> ▪ Littering is dangerous for animals
Sacred Sites	0	<ul style="list-style-type: none"> ▪ No comments
Other		<ul style="list-style-type: none"> ▪ Concerning the care needed to build on permafrost ▪ Several comments calling for strict environmental rules and enforcement (not like DEW line sites) ▪ Route near gravel makes sense ▪ Cheaper groceries, fresh fruit to Tuktoyaktuk ▪ Good for gathering berries
General Comments		<ul style="list-style-type: none"> ▪ Nice and cool on the coast with no mosquitoes ▪ Don't like route (no reason given) ▪ Road will benefit region and territory ▪ Concern about who will pay for the road ▪ Good for youth, training and jobs, make way for a new way of life ▪ Several comments requesting that job get started ▪ Concern over road being of a standard to prevent accidents ▪ Several comments on waste of money and danger of ice-road ▪ Easier and cheaper access to medical services ▪ Could visit friends

TRADITIONAL KNOWLEDGE

7.3.2 Aklavik

They know their land, those Tuk people, whatever they say, we'll agree.

-Hilda Irish

Interviews in Aklavik were conducted on January 19, 1999 in the Sittitchinli Recreation Centre. Both Gwich'in and Inuvialuit elders were contacted by phone by the facilitators and many were shuttled to and from the interview by the project team. The facilitators arranged for the entire consultation team to have dinner at the Aklavik senior citizens home where several additional interviews were conducted.

Interviews in Aklavik were conducted in both English and the appropriate language (Gwich'in or Inuvialuit) None of the interviews were conducted exclusively in an aboriginal language

A total of seventeen interviews were completed - seven with Gwich'in and ten with Inuvialuit.

Data were collected using the general categories presented in Table 7.3-2 as a guide.

**Table 7.3-2
Results of Aklavik Interviews**

Category	No. of Comments	Comments
Animal Migration	8	▪ Animals travel where they want to go and a road won't affect them
	1	▪ Better for spotting animals
	1	▪ People can take pictures
	1	▪ Sister ran into moose on the road
	1	▪ Caribou won't be affected, it's like the Alaskan pipeline
Modern Camps	2	▪ Cabins need to be considered, there is more stealing on road
Historic Camps (archaeological)	0	▪ No comments
Fishing	1	▪ Road won't bother fish much
	1	▪ Ruin fishing, too much noise for fish, take it easy on fish lakes
	1	▪ Certain places for fish jigging on Husky Lakes must be careful
	1	▪ Husky Lakes has lake trout
Hunting	0	▪ No comments
Sacred Sites	0	▪ No comments

(continued)

**Table 7.3-2
Results of Aklavik Interviews (Completed)**

Category	No. of Comments	Comments
Other	2	<ul style="list-style-type: none"> ▪ Road along Husky Lake makes sense since it avoids large areas of permafrost, ice, muskeg ▪ Too close to Husky Lake
	3	<ul style="list-style-type: none"> ▪ Likes road where it is, safer than ice road ▪ Road good for berries ▪ Tourists will need to follow regulations, need to follow HTO regulations
General Comments	6	<ul style="list-style-type: none"> ▪ Been talking about it a long time ▪ Visit relations in Tuk ▪ Bring muktuk and caribou home from Tuk ▪ Ice road is dangerous
	5	<ul style="list-style-type: none"> ▪ Want road from Aklavik to McPherson ▪ Good for tourists, more money for community ▪ Road should start off the end of Navy road ▪ Let people build road ▪ Salt water ice is safer than clear water ice ▪ Concerned about who pays for road ▪ Ice road has killed many people ▪ Cheaper costs of goods after road goes in ▪ Lots of jobs from road ▪ Money wasted on ice road

7.3.3 Fort McPherson

If it's gonna come, it's gonna come.

-Neil Colin

Interviews in Fort McPherson were conducted on January 20, 1999. Originally, the interviews were to be held in the arena complex. However, upon arrival in the community we discovered that another consultant was conducting a community visioning workshop in that facility. The mayor of the community made the council chambers available to us for use as a fallback. Elders were contacted by phone and through a native language radio broadcast by Bertha Frances. The amount of Gwich'in translation varied from interview to interview however all except two of the elders were introduced to the researcher with the proviso: "He (she) understands English good".

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It should be noted all except one of the Fort McPherson interviews took under one and a half hours to complete. Elders were presented to the researcher in rapid fashion and the researcher was constantly being told that people were waiting and that they all needed to be in the community visioning meeting. The first of the seventeen interviews was with Neil Colin who came into the building with us, asked numerous questions and stayed for about an hour thinking about and adding to his thoughts on roads.

A total of seventeen interviews were completed - seventeen with Gwich'in and none with Inuvialuit.

Data were collected using the general categories presented in Table 7.3-3 as a guide.

**Table 7.3-3
Results of Fort McPherson Interviews**

Category	No. of Comments	Comments
Animal Migration	1	▪ Same caribou as Tsiigehtchic to Inuvik and the road doesn't bother them
	1	▪ Has seen caribou and coyotes right on road
Modern Camps		▪ Tourism is good
Historic Camps (archaeological)	0	▪ No comments
Fishing	1	▪ If you cross creeks use big culverts for beaver, rats and fish, sink them down right
	1	▪ Check fish lakes and see what creeks and lakes fish use and go past them
	1	▪ Stay away from Husky Lakes
	1	▪ Tourists might buy fresh fish
Hunting		<ul style="list-style-type: none"> ▪ Too many rules concerning hunting off of the road ▪ There should be "no hunting" corridors with strict regulations ▪ Roads are good for hunting, people used to be away 10-15 days to get caribou now they drive and come back with all their caribou in one day ▪ Use roads for hunting
Sacred Sites	0	▪ No comments
Other		<ul style="list-style-type: none"> ▪ People need to be prepared for winter with a stove, tent, clothing, tell people your route, road needs sign telling people this ▪ Calcium on roads is bad for Ptarmigan, kills plants, spills on cranberries, blueberries, yellow berries and people eat them, it hurts our stomach ▪ Oil and gas from spills and breakdowns could get into rivers, stay away from the lake (Husky)

(continued)

**Table 7.3-3
Results of Fort McPherson Interviews (Completed)**

Category	No. of Comments	Comments
General Comments	8	▪ Tourists want to see Tuk and the Ocean, tourists are good
	7	▪ It's a good idea, should have been done long ago
	4	▪ Good if everybody could get a job on the road
	3	▪ Would drive up to carnivals and things, visit friends or they would come here
		▪ Sometimes funerals mean travel
	3	▪ Cheaper groceries
	3	▪ Easier and cheaper for medical
	3	▪ Should be a road from Aklavik to Dempster along mountains (get mountain water)
		▪ Education for Tuk kids to see mountains
		▪ Land road is safer than ice road
		▪ People communicate better
	3	▪ Good to pick yellow berries, get caribou, get muktuk
	4	▪ People could travel for bingo

7.3.4 Tsiigehtchic

You just live a few years and you're finished and the land is still there.
- *Pierre Benoit*

An announcement about the community consultation meeting was broadcast on the local Tsiigehtchic radio station. Interviews in Tsiigehtchic were conducted at the community gymnasium. Because of the extreme cold (-51°C) many elders came and spent the afternoon talking, eating doughnuts and drinking tea. The majority of elders were transported to and from interviews by team members. Due to the extreme cold, some elders were unable to attend the meeting and three interviews were conducted in individual elders' homes.

A total of fifteen interviews were completed - fifteen with Gwich'in and none with Inuvialuit.

Data were collected using the general categories presented in Table 7.3-4 as a guide.

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**Table 7.3-4
Results of Tsiigehtchic Interviews**

Category	No. of Comments	Comments
Animal Migration	4	<ul style="list-style-type: none"> ▪ Doesn't bother animals, they cross the road
	1	<ul style="list-style-type: none"> ▪ Doesn't bother birds
	1	<ul style="list-style-type: none"> ▪ People see caribou, moose and fox on the road
	1	<ul style="list-style-type: none"> ▪ Noise from trucks bothers animals
	1	<ul style="list-style-type: none"> ▪ Not like oil company work with constant noise, the road is just sometimes (noisy)
Modern Camps		<ul style="list-style-type: none"> ▪ Tourists need to be monitored, people should get parks jobs, need bylaws and enforcement for tourists ▪ Parks needed to cut down on pollution to land ▪ Lots of camps along route
Historic Camps (archaeological)		<ul style="list-style-type: none"> ▪ People used to put up tents to spring hunt, trap rats and beaver
Fishing	3	<ul style="list-style-type: none"> ▪ Tuk people should have monitors on the shores of fish lakes, have to protect Husky Lakes
	1	<ul style="list-style-type: none"> ▪ Lots of people will come to buy dryfish
	2	<ul style="list-style-type: none"> ▪ Road will give good access to fishing (fish and whales)
	1	<ul style="list-style-type: none"> ▪ No big lakes to cross on proposed route
	1	<ul style="list-style-type: none"> ▪ People from Tuk will come for fish (trade or buy) we can trade for caribou
	1	<ul style="list-style-type: none"> ▪ Make money from tourists fishing
	1	<ul style="list-style-type: none"> ▪ It might bother the fish
	1	<ul style="list-style-type: none"> ▪ Will give us good access to fish lakes
Hunting	1	<ul style="list-style-type: none"> ▪ Road will mean we can get different furs
	2	<ul style="list-style-type: none"> ▪ Road is good for hunting
	1	<ul style="list-style-type: none"> ▪ What if Gwich'in want to hunt on Inuvialuit land or vice versa? We'll need to make arrangements or quotas on numbers or kinds. This is true for fishing too.
Sacred Sites	0	<ul style="list-style-type: none"> ▪ No comments
Other		<ul style="list-style-type: none"> ▪ Road is good but more signs needed about respect for land, garbage, keep lakeshore clean,
	2	<ul style="list-style-type: none"> ▪ Watch for bears (carry a gun)
	2	<ul style="list-style-type: none"> ▪ Gravel dumped at ferry crossings or along lakeshores affects rivers and lakes, bridges are better even though they mean less jobs ▪ Highway is good ▪ Good for berries ▪ Proposed route is through good country for gravel with few trees

(continued)

**Table 7.3-4
Results of Tsiigehtchic Interviews (Completed)**

Category	No. of Comments	Comments
Other (cont'd)	2	<ul style="list-style-type: none"> ▪ Should be along gas pipeline road to prevent tearing up ground more ▪ Keep it clean (lots of whisky bottles and stuff on road now), create jobs to pick up garbage
General Comments	2	<ul style="list-style-type: none"> ▪ Cost of living will go down, food will be cheaper
	2	<ul style="list-style-type: none"> ▪ People need more information on roads, more should be done to consult and there should be more explanation of the bad things (booze and drugs) that come with roads ▪ Social problems are already there no matter what ▪ Cheaper goods in stores
	6	<ul style="list-style-type: none"> ▪ Happy to see road, to visit friends and relatives in Tuk
	3	<ul style="list-style-type: none"> ▪ Attract more tourists, good to meet new people ▪ Would like highway from Good Hope to Arctic Red (and a pipeline) on the west side of the river, that side needs fewer bridges
	3	<ul style="list-style-type: none"> ▪ Comments good idea but where “Eskimos” think they want the highway we should listen to them, it’s their country, they know it ▪ Freight trucks will be able to go right through, now they have to wait for the barge ▪ Good idea, should go off the end of Old Navy Road ▪ Good for future generations
	2	<ul style="list-style-type: none"> ▪ Not to be built with land claim money that’s for the future
	1	<ul style="list-style-type: none"> ▪ Don’t use Gwich’in money to build their (Inuvialuit) road, we might use our money to build a road to Good Hope or the Wells ▪ Ice road is dangerous ▪ Road will create employment and access ▪ Road will cause more intermarriages between Gwich’in and Inuvialuit ▪ Young people might leave ▪ Elders might travel to Tuk, better than them going to Whitehorse
	2	<ul style="list-style-type: none"> ▪ Better for medical trips, visits and meetings ▪ Community won’t be isolated during freeze up and break up
	4	<ul style="list-style-type: none"> ▪ Should have been done long ago, why did it stop at Inuvik

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7.3.5 Tuktoyaktuk

Our elders like Raymond Mangelanga and Emmanuel Felix Sr. always told us, “Don’t touch Husky Lakes”.

- Alice Felix

Interviews in Tuk were held in Kitti Hall on January 25, 1999. The people of Tuk were very interested in the transportation study and turned out in large numbers for both the afternoon and evening sessions. As in other communities, elders were contacted by phone and by the facilitator Agnes White. Agnes also spread the word during her stay with her mother in Tuktoyaktuk, the evening before the consultation sessions. Elders were provided with transportation to and from the interviews as well as time to sit and converse over tea and doughnuts. In Tuk elders, in general, were more likely to come to the meeting, express their opinion and leave.

A total of twenty-one interviews were completed – twenty-one with Inuvialuit and none with Gwich’in.

Data were collected using the general categories presented in Table 7.3-5 as a guide.

**Table 7.3-5
Results of Tuktoyaktuk Interviews**

Category	No. of Comments	Comments
Animal Migration	1	▪ Main feeding for caribou is along the shores of Husky Lakes, for the sake of people’s feelings they should move the road away from caribou
	1	▪ Caribou migrate along shore not on higher ground (where proposed route is) there’s not much feed up there
Modern Camps		▪ Some cabins close to proposed route, ask owners what they feel
	1	▪ Should make it easier for people to reach fishing cabins
Historic Camps (archaeological)	1	▪ Never seen any historic sites in that area
	1	▪ There are some historic sites that haven’t been excavated but not along proposed route, builders should keep a lookout for graves
Fishing	2	▪ Build good bridges so it doesn’t bother fish
	1	▪ We can go rod and reeling, picnicking, good for us too
	1	▪ We don’t fish along there, we fish way on east side, road won’t hurt
	2	▪ Inuvialuit must give permission to hunt and fish and issue permits
	1	▪ They used dynamite for seismic work for years and that killed lots of fish
	1	▪ Catch and release should be enforced for tourists
	1	▪ Others (government) just wants road there so they can fish off of it
	1	▪ Only go there in spring to jiggle for fish

(continued)

**Table 7.3-5
Results of Tuktoyaktuk Interviews (Completed)**

Category	No. of Comments	Comments
Hunting		<ul style="list-style-type: none"> ▪ Don't goose hunt there, hunt on coast ▪ Road is good for hunters and trappers
	4	<ul style="list-style-type: none"> ▪ Won't affect caribou
	1	<ul style="list-style-type: none"> ▪ No hunting from Inuvik to Husky Lakes, mostly just around Parsons Lake except for 10 days in November ▪ Main food source so for generations to come we have to preserve caribou
Sacred Sites	1	<ul style="list-style-type: none"> ▪ Indian/Eskimo wars were in this region traditionally, shamans lived in area, oral history program is needed
Other	2	<ul style="list-style-type: none"> ▪ Husky Lake only used 1 or 2 weeks a year now, road gives year round access this is better
	3	<ul style="list-style-type: none"> ▪ Good gravel in area
	4	<ul style="list-style-type: none"> ▪ Want land to be the way it is, concerned about garbage, hunting and fishing
	1	<ul style="list-style-type: none"> ▪ Sometimes there is heavy erosion on the lakeshore that could erode into the road
General Comments	7	<ul style="list-style-type: none"> ▪ Been waiting since the 70s, we want the road
	2	<ul style="list-style-type: none"> ▪ Access to gravel is good, cheaper and faster
	3	<ul style="list-style-type: none"> ▪ Proposed route looks good, provides better access to Husky Lakes for people
	1	<ul style="list-style-type: none"> ▪ Reindeer herder who knows area well, if he didn't he would go with people but he knows that proposed route is best
	7	<ul style="list-style-type: none"> ▪ Reroute road north of Parsons Lake straight north (possibly along power line)
	1	<ul style="list-style-type: none"> ▪ Reroute along hydro line, there's lots of gravel and its easier for hydro maintenance
	3	<ul style="list-style-type: none"> ▪ Road should be further west along high ground along river, Ikhil and pipeline road
	1	<ul style="list-style-type: none"> ▪ Road won't affect Husky Lake, more important than a few fish lost to tourists
	1	<ul style="list-style-type: none"> ▪ Too close to Husky Lakes, tourist will take all the fish
	1	<ul style="list-style-type: none"> ▪ People with camps will have break ins and stuff stolen – move road further inland
	3	<ul style="list-style-type: none"> ▪ Better for grandchildren, young want road and many don't go on land anyway
	1	<ul style="list-style-type: none"> ▪ Ice road is dangerous
	5	<ul style="list-style-type: none"> ▪ Booze and drugs are here already
	2	<ul style="list-style-type: none"> ▪ IRC should help fund the road then it will get built better and faster
	1	<ul style="list-style-type: none"> ▪ Sell tourists handicrafts and other goods
	4	<ul style="list-style-type: none"> ▪ Northern store is so expensive, this will make things cheaper
2	<ul style="list-style-type: none"> ▪ Follow Old Navy road, its already cut 	
1	<ul style="list-style-type: none"> ▪ Stay on the west side of Otto Binder's to avoid creek 	
3	<ul style="list-style-type: none"> ▪ Visit relatives anytime, not depending on airlines 	
1	<ul style="list-style-type: none"> ▪ Save money wasted on ice road 	

7.4 Factors Influencing Data

The following factors influenced the nature and quality of the information obtained from the elders who participated in the community interviews:

- All elders were selected at the discretion of the facilitators who are, themselves, respected elders.
- Several potential Inuvialuit respondents in Aklavik were attending a funeral in Alaska.
- A funeral in Inuvik prevented the participation of local contact Knute Hansen who was intended to act as a liaison between the researcher and the facilitators.
- Elders in Fort McPherson were in an extreme hurry as they were participating in a community visioning workshop.
- A generation gap exists within the elders community with elders in their 50s having differing opinions and knowledge from elders in their 80s.
- In all communities except Tuktoyaktuk, the participation of elders was limited to afternoon sessions by the nightly bingo.
- Culturally sensitive subjects such as historical conflicts, shamanism and sacred sites were hinted at but never expanded upon (except once), possibly because of the setting, and relative formality of interviews.
- In each community, all interviews were conducted over the course of one day. This is quite different from the traditional method of conducting oral history collection, involving a minimum of two visits and time to establish a relationship between the subject and the researcher.

7.5 Summary and Conclusions

Elders of the communities in the Mackenzie Delta, both Gwich'in and Inuvialuit, contacted during the course of this study showed unanimous support for the concept of developing an all-weather road between Tuktoyaktuk and Inuvik. During the course of 82 interviews, the researcher did not encounter a single individual who was opposed to the idea.

Having stated this overriding conclusion, it should be noted that the researcher did uncover some strong opposition to the proposed route. Many elders in each

community expressed concerns over the proximity of the route to the shores of Husky Lakes. Part of this concern may have resulted from the use of large-scale maps that seemed to indicate that the road ran immediately adjacent to the shore. This concern is best illustrated by the elder who expressed apprehension about the lake eroding into the road. However it should not be discounted that people do not want the road that close to the lake for many other reasons, both stated and unstated. This is not simply a matter of education on the benefits of the proposed route. Discussions of extra expense, difficulties with gravel, permafrost *etc.* did not alter the opinion of many elders that the proposed route was not necessarily their preferred route.

As noted earlier, the people of the region have a great deal of experience with roads and ice-roads, primarily the Dempster Highway. From this experience they have formed opinions on many other road related issues such as: the benefits and detriments of tourism; problems of over-fishing; environmental problems that can occur during and after road construction; and changes to land use patterns for people with hunting and fishing cabins. None of these problems were considered insurmountable and elders freely discussed the need for regulations and enforcement regardless of the finalized road route.

In reviewing data collected it would appear that for every statement provided by an elder there is an opposing statement provided by another. The overwhelming opinion was, however, that the road was important and necessary, that it has been discussed for decades and that elders would like to see the road completed in their lifetime.

7.6 Recommendations for Further Study

As discussed, this scoping study was meant to identify potential sources of environmental concern on behalf of Gwich'in and Inuvialuit elders. To that goal, the following issues have been identified. Some of these issues may well be beyond the scope of the GNWT Dept. of Transportation to investigate, nevertheless, they are important to reiterate.

1. A concern expressed by several elders both Gwich'in and Inuvialuit was the proximity of the proposed road right of way to the shores of Husky Lakes. A wide variety of issues were used to illustrate this concern including, over

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fishing, pollution, effects on private cabins, effects on established tourism businesses, erosion.

2. A concern was expressed over the adverse effects of roads on communities. It was generally agreed that “booze and drugs” were in communities already. It was felt that education was needed on the differences that roads could make and what efforts could be made to preserve culture in communities.
3. Many people raised questions about the environmental impact of roads. These concerns ranged from littering and chemical pollution through to construction issues such as improperly constructed bridges and culverts that affect fish movement or introduced gravel altering the course or flow of rivers.
4. Concern was expressed about the effects of roads crossing established trap lines.
5. A small amount of concern was expressed by a few elders that the road might disturb archaeological sites, fossil remains, graves or historic sites along the road, regardless of the route chosen. It was suggested that care be taken when construction began. The area may also include sites of historic Indian/Eskimo wars.
6. The need for regulations was often stated. Regulations to control pollution, hunting and fishing of tourists, camping and hiking, and tourism safety were all emphasized.
7. The desire for other roads in the region was often cited.
8. The question of who pays for the road and the question of the appropriateness of using land claim money was raised with people falling on both sides of the issue. Overall the feeling was that the use of land claim money was not appropriate.

8. REGULATORY PROCESS

8.1 General

One of the main project assignments is to determine the likely regulatory process to be followed assuming the proposed road were to be developed. To accomplish this task, the Rescan project team began by arranging and participating in a series of preliminary meetings with a number of the key regulatory agencies with northern headquarters in Yellowknife NT in November, 1998. The primary objective of these meetings was to review the mandates of each of these agencies and their possible roles and requirements related to the future regulatory process for the Inuvik-Tuktoyaktuk road proposal.

Such meetings were completed in November 1998, with representatives of the future Mackenzie Valley Environmental Impact Review Board, and Mackenzie Valley Land and Water Board, the federal departments of Environment (EC), Fisheries and Oceans (DFO) and Indian and Northern Affairs (DIAND), and the GNWT Department of Resources, Wildlife and Economic Development (RWED).

Subsequently in January, 1999, the Rescan team met with representatives of the Inuvialuit Joint Secretariat (on behalf of the Environmental Impact Screening Committee and the Environmental Impact Review Board) and the Gwich'in Land and Water Board in Inuvik and the Inuvialuit Land Administration in Tuktoyaktuk to obtain their views on the nature of the future regulatory process for the proposed road project.

Since the proposed development will be located almost entirely within the boundaries of the Inuvialuit Settlement Region, it is likely that the paramount environmental impact assessment process to be satisfied will be that embodied in the Inuvialuit Final Agreement (IFA). However, in the event that the final alignment includes a portion within the Gwich'in Settlement Area a joint review process may be required.

The following provides a brief review of the Inuvialuit Final Agreement, the Mackenzie Valley Resource Management Act, the main points drawn from each of the individual meetings with the various regulatory agencies and a summary of the

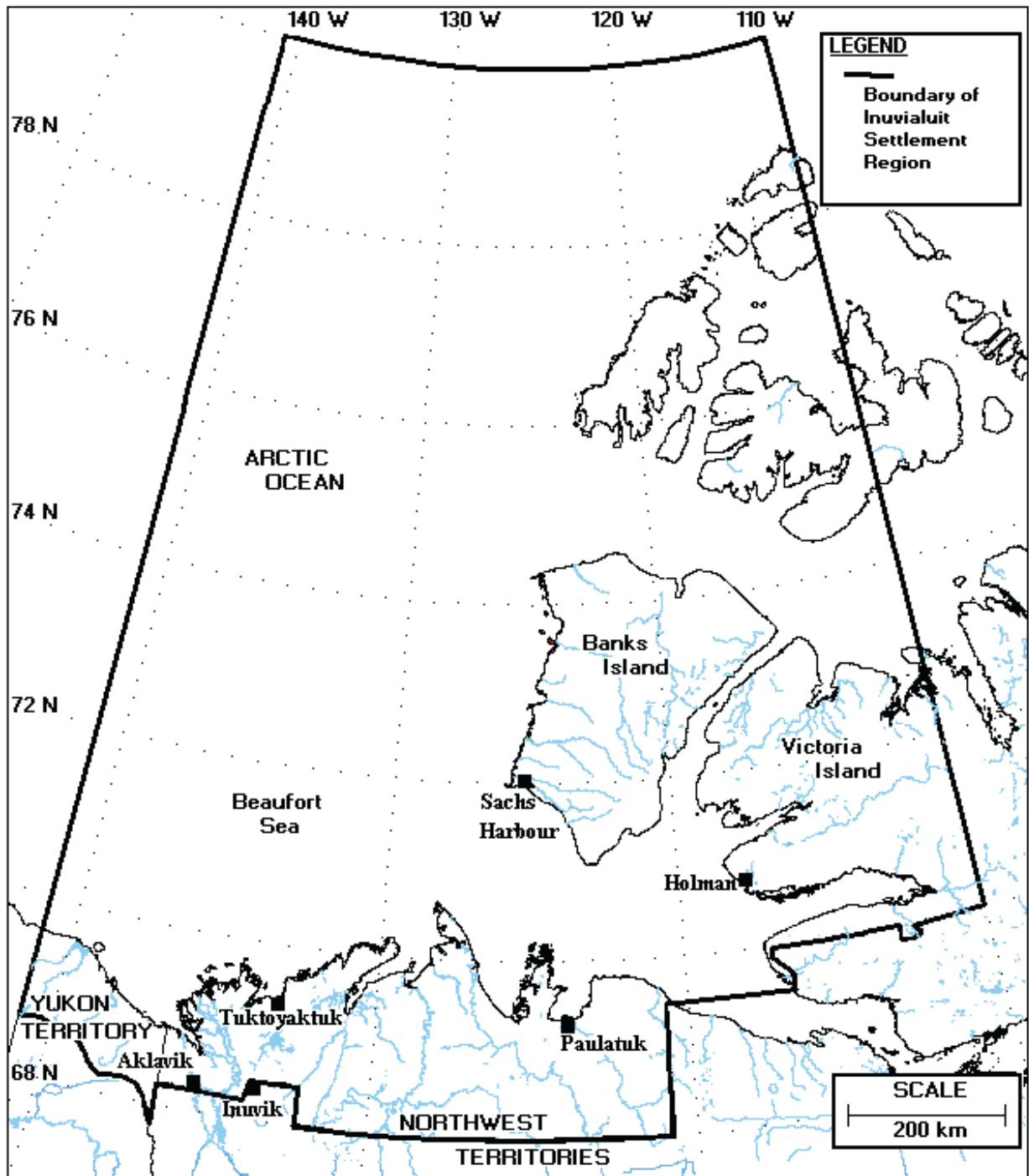
most likely regulatory process options that will need to be followed for the proposed Inuvik-Tuktoyaktuk road.

8.2 Inuvialuit Final Agreement

The Inuvialuit Final Agreement (IFA) and its enabling legislation the Western Arctic (Inuvialuit) Claims Settlement Act (S.C. 32-33 Elizabeth II, C. 24-28, June 1984), require the screening of development and activities of consequence to the Inuvialuit Settlement Region (ISR; Figure 8.2-1) that are likely to have a negative impact on the environment, or on present or future wildlife harvesting. It provides for the establishment of the Environmental Impact Screening Committee (EISC) to carry out the preliminary environmental screening of onshore developments. In a letter dated 10 April 1987, the Inuvialuit Game Council (IGC) gave formal notice that under Paragraph 11(1)(c) all developments in the offshore on Crown lands within the ISR were also to be submitted for screening. The IFA also provides for the establishment of an Environmental Impact Review Board (EIRB) to carry out more in-depth public reviews of developments referred to it by the EISC. Settlement legislation developed in support of the IFA takes precedence over all federal, territorial, provincial or municipal law, by-law or regulation in the event of inconsistency or conflict [IFA Subsection 3(3)].

In general terms, the EISC has a legislated responsibility to screen all proposed activities inside and outside the ISR which may negatively impact the environment and/or Inuvialuit wildlife harvesting. Examples of activity categories which are considered include scientific research and camps; commercial tourism proposals; granting of water rights; water withdrawals; industrial waste disposal; energy, mineral and aggregate exploration and extraction; commercial harvesting of plant resources; **commercial transportation developments** (air, land, water); and scheduled military activities.

The IFA mandates that “no license or approval shall be issued that would have the effect of permitting any proposed development to proceed unless the provisions of (the Environmental Impact Screening and Review Process) have been complied with” [IFA Subsection 11 (31)]. Regulators, developers and operators are compelled by the enabling legislation to comply with provisions of the EISC and, possibly, the EIRB processes prior to commencement of any onshore activity such as the proposed road.



Source: Joint Secretariat 1994 in EISC 1998.



Inuvialuit Settlement Region



In addition, for these portions of the proposed road or associated infrastructure that would be located on Inuvialuit “private lands” as defined in IFA paragraphs 7(1)(a) and/or 7(1)(b), the Inuvialuit Land Administration (ILA) Rules and Procedures would apply. The likely linkages between the various regulatory bodies established under the IFA are further described in Section 8.4.7.

8.3 Mackenzie Valley Resource Management Act

The Mackenzie Valley Resource Management Act (MVRMA) was proclaimed on December 22, 1998. This new legislation establishes a co-ordinated system of resource management to regulate the use of land and water in the Mackenzie Valley. The Mackenzie Valley, as defined, includes all of the western Northwest Territories, with the exception of the Inuvialuit Settlement Region. The MVRMA applies to the Gwich'in, Sahtu, North Slave, South Slave, and Deh Cho regions. The MVRMA has two principal regulatory bodies, the Mackenzie Valley Environmental Impact Review Board (MVEIRB), and the Mackenzie Valley Land and Water Board (MVLWB). The MVEIRB came into effect with the December 22, 1998 proclamation, however, the MVLWB will not be enacted until some time in 1999 (currently expected in August 1999). These two bodies are independent of each other, but interact in the review and regulation of developments in the Mackenzie Valley.

The Mackenzie Valley encompasses several regions as outlined above. Under the MVRMA each of these regions will have their own Land and Water Board as determined under the lands claim of each specific settlement area. These Land and Water Boards will regulate and licence development within their region. When developments extend over more than one region, a joint committee of the affected areas can be established to form the MVRMA regulatory boards. The MVLWB will be involved in multi region (Transboundary) developments, and the currently unsettled claim areas.

8.4 Meetings With Regulators

The following are the main points obtained from the series of meetings convened with the various regulatory agencies in Yellowknife in November, 1998 and Inuvik in January 1999. It should be noted that the points recorded were based on the information conveyed by participants at each of the meetings. On occasion

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interpretations provided on some matters (*e.g.* transboundary implications) were in conflict but they were nevertheless recorded as understood at the time.

The inputs received from the various parties interviewed were used to describe the most likely regulatory review process to be applied to the proposed Inuvik to Tuktoyaktuk road project in Section 8.5.

8.4.1 Mackenzie Valley Environmental Impact Review Board (MVEIRB)

On November 9, 1998, the project team met with what was then the MVEIRB working group. Present were Ms. Heidi Klein, Executive Director, and Mr. Louis Azzolini. At that time the MVRMA had not yet been proclaimed but the following information has been updated to reflect the fact that the Act was proclaimed on December 22, 1998:

The MVEIRB is the primary environmental review body for all development in the Mackenzie Valley region. All project-related environmental assessments within the area of jurisdiction will be reviewed by the MVEIRB. The initial screening for a project will be completed by the MVLWB. This may be completed at the regional level, or by a joint committee of two or more regions.

The MVRMA supersedes the Canadian Environmental Assessment Act (CEAA). However, the requirements of the MVEIRB are similar in scope to those of CEAA, but place a greater emphasis on the socio-economic components of the EA than CEAA. However, it should be noted that for Transboundary situations, such as those which include the ISR, CEAA conditions would still need to be satisfied. The requirements and procedures of the MVEIRB are presently described in a set of "Interim Guidelines" which will be subject to review after one or two years of experience.

In an EA, the biophysical, socio-economic and cultural components are given equal weight. The level of effort for the proponent will be generally similar in the production of an EA under the MVRMA to that previously expected under CEAA.

For projects that involve more than settlement area (*i.e.* Sahtu and Gwich'in) or involve other jurisdictions (Inuvialuit, Nunavut) a project may be identified as Transboundary. The MVLWB is the body that determines which projects are

Transboundary under the MVRMA. The development may be termed Transboundary under a variety of conditions. The development may itself physically cross the boundary of more than one settlement area. The effects of a development may cross more than one settlement area (*i.e.* impact on caribou, waters *etc.* that extend beyond the development area to another area).

Transboundary projects will be screened by the MVLWB and if the project has effects that are known and mitigable, it can be directly licensed and regulated by the MVLWB. This body may determine that the effects of the project are not known, or the project is of sufficient scale, such that the project will be directed to the MVEIRB for review. The review will be completed by the MVEIRB, and recommendations from the MVEIRB will be provided to the MVLWB for licensing and regulation.

If the project is deemed to have Transboundary implications, an agreement between the regulatory agencies (*e.g.* MVEIRB and EIRB) will be needed for the review of the project. These bodies are expected to develop agreements to allow a single co-operative review process to be completed for an individual project, the *one project - one process* approach. This agreement once drafted must be forwarded to DIAND under the MVRMA for approval.

Specifically for the proposed road, the following statements were made with respect to the regulatory review process.

If the project originated in MVRMA lands and crossed over into ISR lands the project would likely be considered to have Transboundary implications, although the MVEIRB does not make this decision. The MVEIRB also expressed the opinion that there may also be Transboundary considerations with respect to impacts on the bluenose caribou, and socio-economic impacts on communities outside the Inuvialuit Settlement Region even if the project was located entirely within the ISR. This position conflicted with the interpretation provided by the MVLWB as reported in Section 8.4.2.

A Transboundary designation would require that a co-operative agreement be developed between the MVEIRB and the EIRB. Developing this agreement would be the responsibility of the Review Boards, and would not be the responsibility of the proponent. However, there may be some benefit for the

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proponent to initiate this process through early notification of the Boards to minimize delays in the review process.

Specific issues that were considered to be of importance to the MVEIRB included:

- A review of alternatives to the proposed project, and efforts made by the proponent to review these alternatives prior to selecting the proposed project;
- The cumulative effects of the project will need to be addressed; and
- The project context will be important. The identified land use for the project area will be considered by the Board.

8.4.2 Mackenzie Valley Land and Water Board

The following information was obtained through a meeting convened on November 10 with the working group of the future Mackenzie Valley Land and Water Board. Representing the future Board were Mr. Jim McCaul, Executive Director, and Ms. Annette Quiring, Lands Administrator.

The Act was proclaimed on December 22, 1998, however, Part 4 of the Act that brings the MVLWB into existence was not included in that proclamation. This part will be proclaimed in 1999, though the exact month has not been determined, but most likely in the summer of 1999.

The term Transboundary does not have a clear definition under the MVRMA. It is the responsibility of the MVLWB to determine if the project is or is not Transboundary. Currently the philosophy of the MVLWB is that the Transboundary designation will be used if the physical components of a development cross the boundaries of two or more land claim regions, or if there could be significant biophysical impacts from the development crossing more than one region. Transboundary impacts related to the socio-economic effects would likely not be considered sufficient for the project to be designated as Transboundary.

The MVLWB is responsible for these lands in the Mackenzie Valley not currently covered under existing land claims agreements, and for developments with Transboundary implications. The Gwich'in Land and Water Board (see

Section 8.4.8), and the Sahtu Land and Water Board will control developments in their respective Settlement Areas.

Figure 8.4-1 illustrates how these agencies are likely to interact, and how the MVLWB interacts with the MVEIRB.

Figure 8.4-2 is an illustration of the possible review process envisaged for this project to meet the needs of the MVRMA.

The representatives of the MVLWB at the meeting felt that due to the scale of the project (particularly if the road involved both Gwich'in and Inuvialuit lands) a joint or cooperative review process involving the MVEIRB and the EIRB covering IFA lands may be required.

8.4.3 Environment Canada

In a meeting with Mr. Steve Harbicht, Head of Regulatory & Monitoring, held on November 9, 1998, it was indicated that the Department can delegate its responsibilities for CEAA to another regulatory body. Environment Canada has delegated its responsibilities to the Inuvialuit for the environmental review process within the Inuvialuit Settlement Region. Environment Canada expects that the EIRB will complete environmental assessments and environmental screening in accordance with the requirements contained in CEAA.

The review process that would proceed under the EIRB would have Environment Canada as a specialist advisor to the EIRB for the EA process. In the past, Environment Canada has not been involved with the screening process that is completed on developments in the Inuvialuit Settlement Region.

Environment Canada will not be as involved in the review process in the lands regulated under the MVRMA. It is the understanding of Mr. Harbicht that the MVRMA supersedes the requirements of CEAA.

Comments related specifically to the proposed development were:

There would be several agencies that would be interested in the review process of the proposed development.

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The review would likely need to take into account possible impacts beyond Inuvialuit lands. This may include the increased access to hunting, fishing, etc of non Inuvialuit peoples on Inuvialuit lands and waters.

Resource management of the area may play an important part of the EA submission. This would require the agreement of the land claims agencies.

The EA should take into account the sources of aggregate and other construction materials. This would include the use of eskers which can present a significant environmental impact. The location of the granular sources may bring in other agencies (*e.g.* Gwich'in, DIAND)

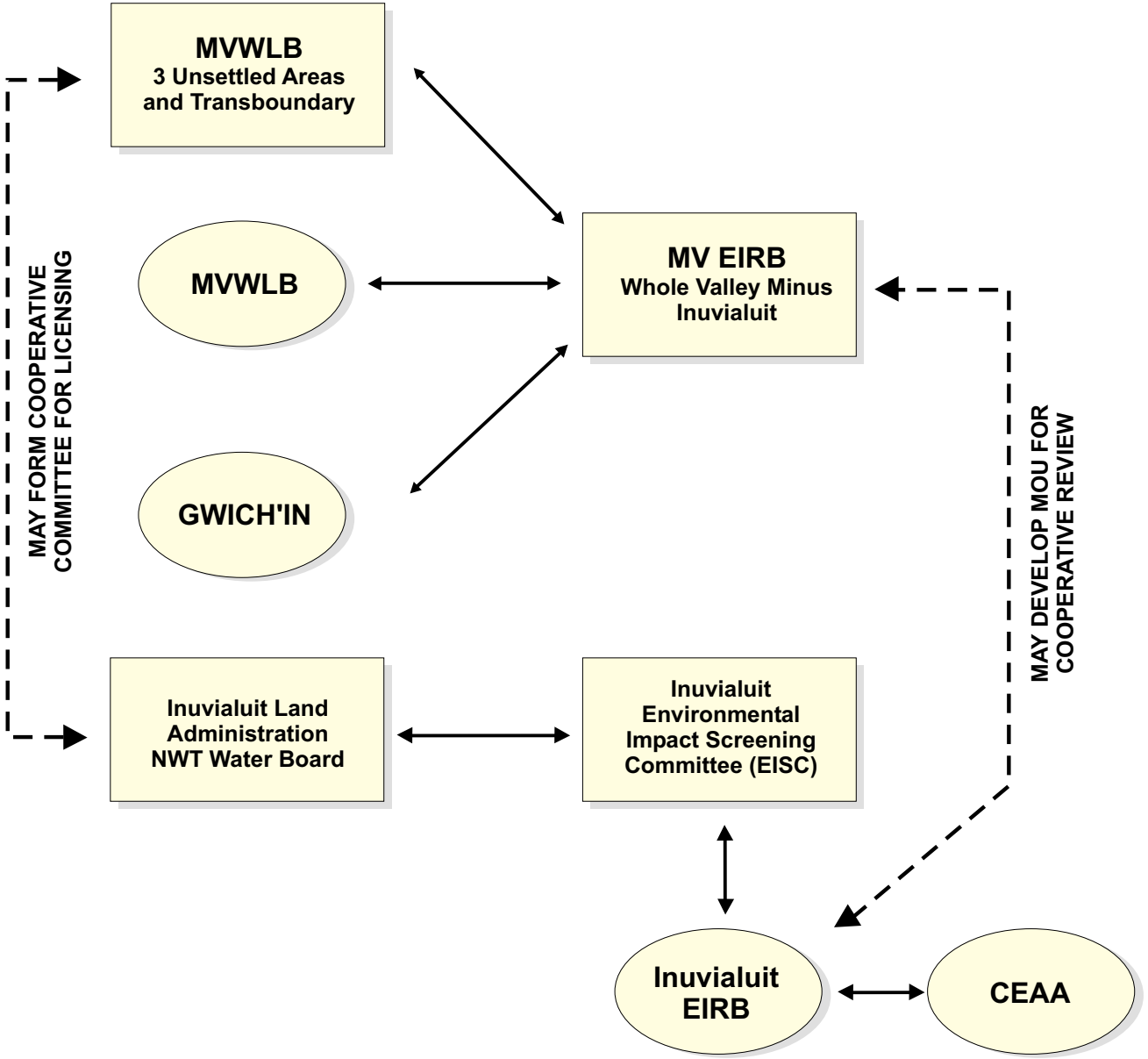
The involvement of other Boards (*e.g.* MVEIRB) may be dependant on the desire of the Boards to be involved in a project that will involve primarily Inuvialuit lands.

8.4.4 GNWT Department of Resources, Wildlife, and Economic Development

The GNWT Department of Resources, Wildlife and Economic Development (RWED) was represented at a meeting on November 9, 1998 with the project team by Mr. Emery Paquin, Director, Environmental Protection Services Division (EPS), Mr. Ken Hall, Manager, (EPS) and Ms. Karin Clark, Environmental Assessment Analyst, Policy, Legislation and Communications Division, RWED. The following information was provided by these representatives.

RWED does not have an Environmental Assessment Act nor an official EA process.

RWED does not have a licensing or permitting role for the proposed development.



Interaction Between Land and Water Boards and Environment Impact Review Boards

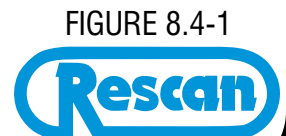
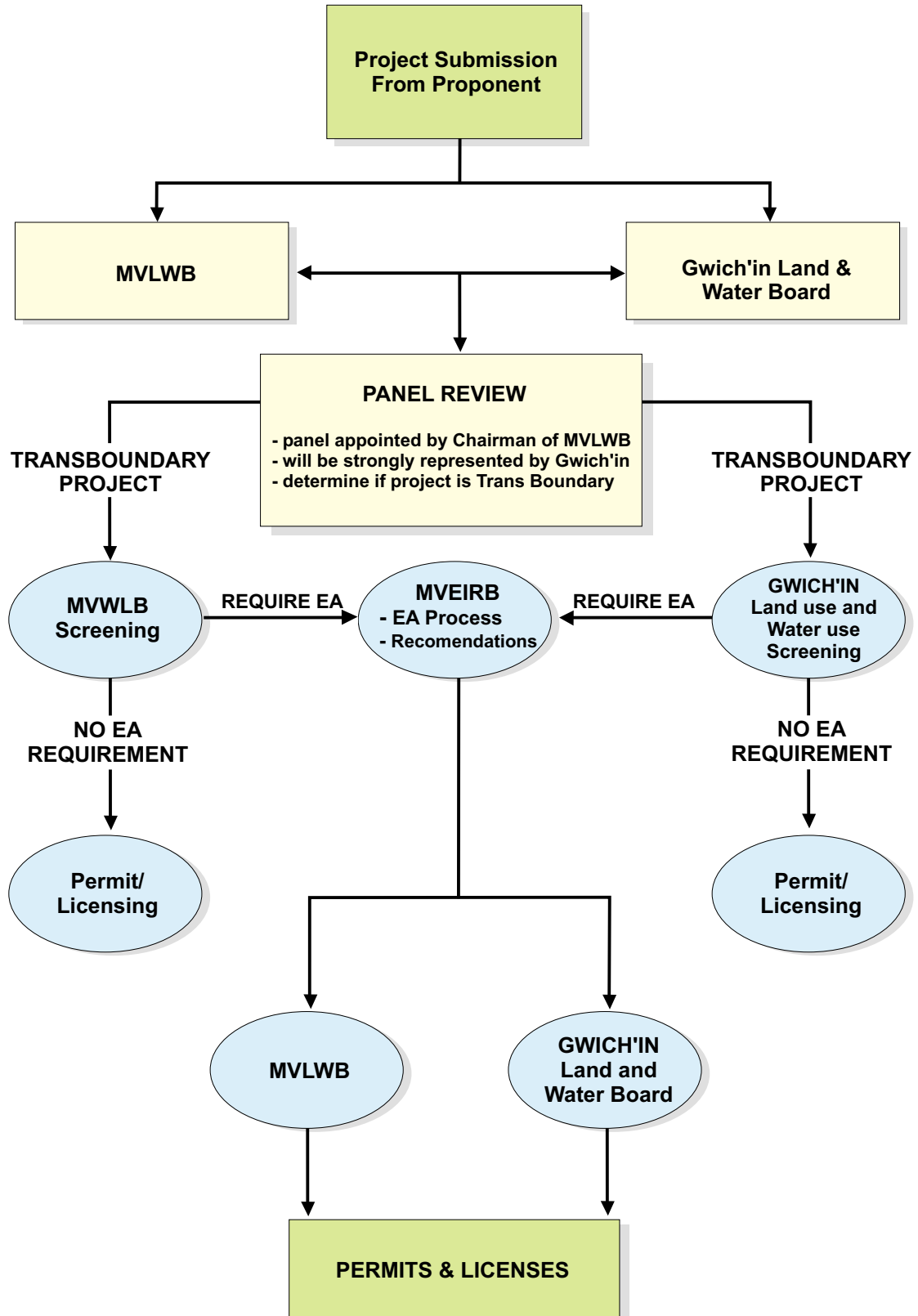


FIGURE 8.4-1



Potential Review Process to Meet the Needs of the MVRMA



RWED will be involved in the EA process in the following manner:

- RWED may be a resource to the lead agency if requested. This may take the form of providing information to the agencies on such issues as harvesting, resources *etc.*
- RWED has representation on the EIRB and the Environmental Impact Screening Committee (EISC).
- RWED also has the option to be an intervenor to the review process. RWED would require that the review process of the proposed development is an open process such as CEAA.

RWED would encourage the use of the *One Project - One Process* approach that has been adopted by the CCME Canada Wide Accord on Environmental Harmonization.

The specific requirement that RWED would be looking for in an EA would be determined through the development of the terms of reference for the EA.

It was suggested that other departments of the GNWT may be involved in the review process. These departments may include; Municipal and Community Affairs (MACA if Commissioner's lands are crossed with the project), Education, Culture and Employment for training issues, and Health and Social Services with respect to the socioeconomic aspects.

8.4.5 Department of Fisheries and Oceans (DFO)

The Department of Fisheries and Oceans was represented at a meeting held on November 10, 1998, by Mr. Doug Chiperzak, Area Habitat Biologist for the Inuvialuit, Gwich'in and Sahtu regions. Mr. Chiperzak provided the following comments.

The proclamation of the MVRMA will not effect the regulatory role or jurisdiction of DFO.

The authorization to alter or destroy fish habitat will be regulated under the Fisheries Act, Section 35.2. This will be an issue for the proposed development at stream and water crossings.

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There may be compensation issues related to the development of a road in the area. The preferred approach to compensation requires the creation of new habitat to replace habitat lost by a development. Financial compensation may be possible as a last resort.

The use of explosives is regulated by Natural Resources Canada (NRCAN), but DFO has a guideline for the use of explosives near or in waterbodies.

DFO would be involved in the review of proposed removal of granular material from shores, or from lake or ocean bottoms for the road construction.

DFO and the Inuvialuit co-manage the fisheries within the Inuvialuit settlement area.

8.4.6 Department of Indian and Northern Affairs (DIAND)

On November 10, 1998 the project team met with DIAND representatives Mr. David Livingstone, Mr. David Milbourne, Ms. Mary Tapsell, Ms. Marie Adams, and Mr. Steve Traynor. The following information was provided at this meeting.

In the Inuvialuit Settlement Region (ISR) DIAND will have an indirect role in the overall review process. The ILA, EISC and EIRB will lead the review process. Further the EIRB has applied for substitution under CEAA. The provisions of CEAA allow for substitution by the review process as prescribed by the Inuvialuit Final Agreement (IFA). However, to the knowledge of DIAND substitution has not been undertaken to date.

Water licenses for the project within the ISR would be dealt with by the NWT Water Board and DIAND would participate through this board as part of the Technical Advisory Committee to the NWT Water Board.

There are blocks of Crown land within the ISR that would be subject to review by EIRB but with recommendations being forwarded to DIAND for approval.

Provided the proposed road would eventually become a public road, any road right of way built on Crown Land would be transferred to the Commissioner of the Northwest Territories.

Quarry permits are provided directly by the Inuvialuit when on Inuvialuit land, and by DIAND on Crown land.

On Inuvialuit land future road maintenance can be completed without further permitting. On Gwich'in land, a land use permit may be required for all maintenance.

The use of Impacts Benefits Agreements (IBA) was suggested as a good idea for the proponent.

It was strongly recommended that early discussions be held by the proponent with the ILA.

8.4.7 Joint Secretariat

On January 22, 1999 the Rescan team met with Ms. Linda Graf, Secretary to the Inuvialuit Environmental Impact Screening Committee (EISC) and the Environmental Impact Review Board (EIRB). Based on discussions with Ms. Graf, the process for reviewing proposed developments on Inuvialuit Settlement Region (ISR) lands is generally as follows.

Initially, a "Project Description," structured in accordance with Section 4.4 of the Environmental Impact Screening Committee Guidelines and Procedures, must be prepared and submitted to each of the Inuvialuit Land Administration (ILA) for Inuvialuit Private Lands (7(1)(a)), and the Environmental Impact Screening Committee (EISC) for other lands (7(1)(b)) in the ISR.

Decisions about land use on Inuvialuit Private Lands are made by the Inuvialuit Land Administration Commission (ILAC). Because the proposed road project transverses both "Private" lands and other lands in the Settlement Region, the ILAC has the option and would be expected to refer the development proposal to the EISC for a more consolidated review.

The EISC process flow chart is outlined in Figure 8.4.3. The screening process typically takes about 50 days or less upon receipt of an acceptable Project Description.

Subsection 4.2 of the EISC Operating Guidelines and procedures presented as follows, outlines the materials and responsibilities of the proponent with regard to the submission of proposals for screening.

From EISC Operating Guidelines and Procedures

Subsection 4.2

Submission of a Proposal for Screening

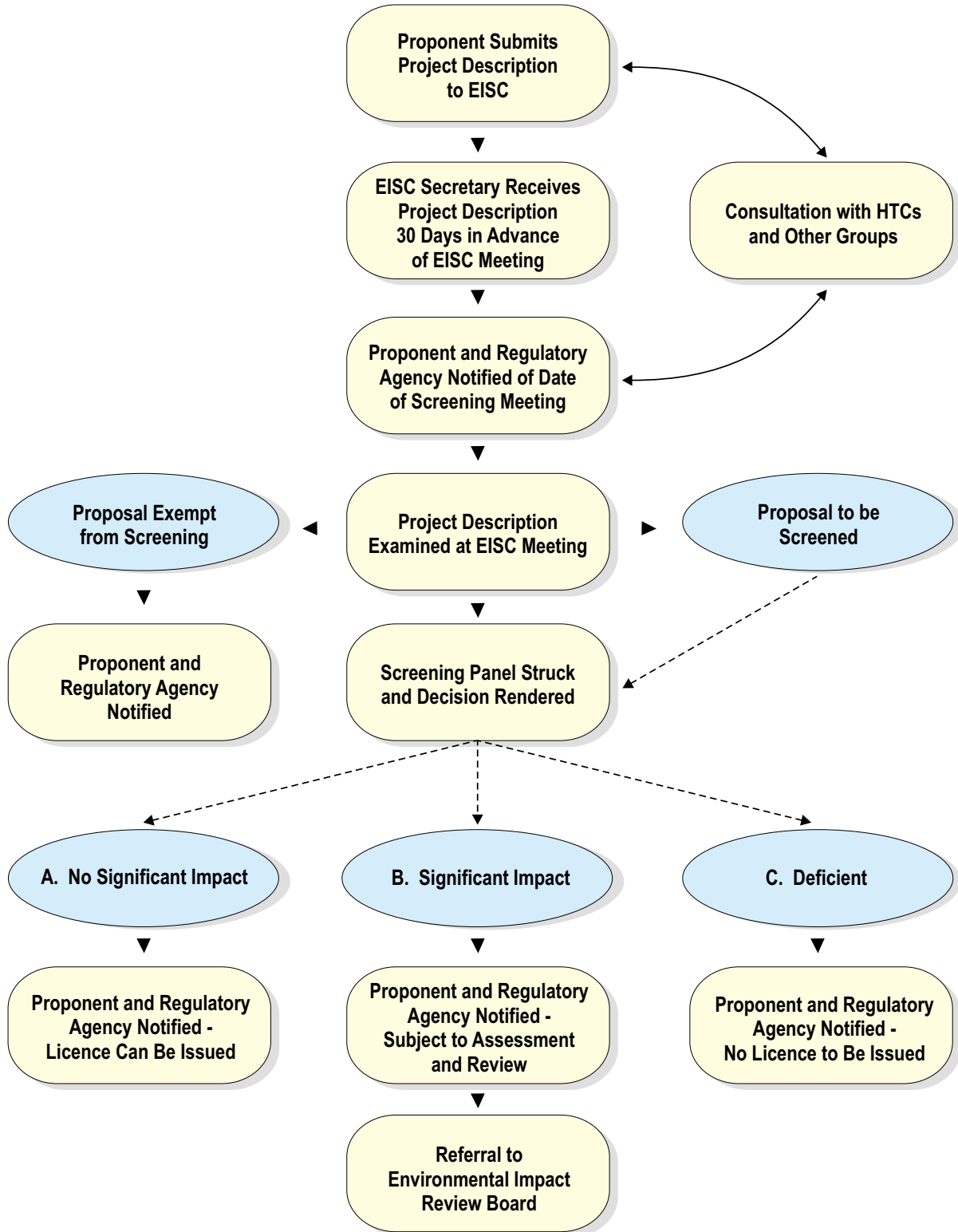
- (1) *Materials provided by a developer, either as part of a project description or as part of a presentation, will become a component of the meeting file and will therefore be accessible to the public.*

Any supplemental information provided to the EISC pertinent to a development being screened will be recorded in the Minutes and become part of the public record. This includes a list of any bulky documents eventually returned to the proponent.

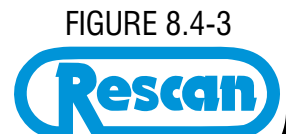
- (2) *Eleven copies of the project description, as per the recommended format, must be submitted to the EISC Secretary at the address indicated in Section 1.0. The date of receipt of mailed or couriered submissions will be the effective date to initiate the screening process. Faxed or emailed submissions are not acceptable.*

Single copies of scientific papers, diagrams, maps or other items may be provided as reference material for the EISC. If requested in the cover letter, these materials will be returned to the proponent after use.

- (3) *It is the responsibility of the developer to prepare the project description in the format described in Subsection 4.4, and to ensure that the complete submission (including a cover letter and eleven copies) reaches the Secretary at least 30 days before the next scheduled EISC meeting in order to be considered at that meeting. Waivers of this requirement may only be made by resolution of the EISC.*
- (4) *Screening typically occurs in 50 days or less of receipt of a completed project description.*



Environmental Impact Screening Committee Process Flowchart for Proposed Development on ISR Lands



The EISC screening process is intended to screen environmental impacts only, not socio-economic impacts. The EISC screening process will determine whether the project submission remains deficient, poses no significant environmental impacts, or may present significant impacts. The parameters to be considered in the determination of significance are provided in Appendix D of the Operating Guidelines and Procedures and are outlined as follows:

From EISC Operating Guidelines and Procedures

Appendix D

Determination of Potential for Significant Negative Environmental Impact

In determining the potential for significant negative environmental impact of proposed developments, the EISC considers, for example, the following questions:

- (1) Is there a conflict with the Inuvialuit community conservation plans or traditional Inuvialuit harvesting?*
- (2) Is there a conflict with wildlife management plans developed through the Inuvialuit co-management process?*
- (3) Is there the potential to exceed territorial and/or federal air and water quality standards?*
- (4) Does the proposed development have the potential to exceed established activity threshold levels?*
- (5) Is the proposed development in land use category C, D or E lands (as identified in Inuvialuit community conservation plans or the Regional Land Use Plan for the Mackenzie Delta-Beaufort Sea Region)?*
- (6) Are there unresolved environmental issues either related to the proposed development or within the ISR?*
- (7) Is there the potential for significant habitat loss, disturbance, or population decline for any species with special conservation status, keystone species or species harvested by the Inuvialuit, as*

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determined by the WMAC (Northwest Territories and/or North Slope) and/or Fisheries Joint Management Committee (FJMC)?

- (8) Does the proposed development encroach on areas with particularly high bio-diversity potential?*
- (9) Does the EISC lack confidence in the proposed mitigation?*
- (10) What are the cumulative effects of the proposed development?*

Because of the proximity of the proposed road to the Husky Lakes area, significant potential impacts can be anticipated which will require higher standards of performance and protection (Section 8(1), Inuvialuit Final Agreement). In addition, some of the socio-economic impacts related to the project (both positive and negative) will likely be significant.

For these reasons, the project has a high likelihood of being referred to the Environmental Impact Review Board (EIRB) for further review. The process for referring the proposed development from the EISC to the EIRB is described as follows:

From Section 5 of the EIRB Operating Procedures

- 5.4. If the EISC decides that a proposed development could have significant negative environmental impact, or significant negative impact on present or future wildlife harvesting, it shall refer that proposed development for further environmental impact review and assessment [11(16) and 13(7)].*
- 5.5. Where a proposed development is or may be subject to a governmental development or environmental impact review process, and in the opinion of the EISC that review process adequately encompasses or will encompass the assessment and review function, the EISC shall refer the proposal to the body carrying out that review process [11(15)].*
- 5.6. If, in the opinion of the EISC the review process referred to in section 11(15) does not or will not adequately encompass the assessment and review function, or if the review body declines to*

carry out such functions, the proposal shall be referred to the EIRB for a public review [11(16)].

- 5.7. If the EISC decides to refer a proposed development to the EIRB, it will forward to the EIRB a formal referral package containing;
 - a. a letter of referral detailing the decision of the Screening Panel and any reasons for the decision that the EISC believes would be pertinent to further environmental impact review and assessment;*
 - b. one copy of the development description that was screened, including any supplements provided by the proponent; and*
 - c. one copy of the minutes of the EISC meeting at which the decision to refer the development proposal was made.**
- 5.8. The EISC will inform the proponent and all of the appropriate regulatory agencies of its decision, and of the IFA requirement that no permits or approvals be issued by any approval authority that would allow the proposed development to proceed pending the outcome of the EIRB public review [11(31)].*
- 5.9. Sections 11 and 13 of the IFA provide the EIRB with the specific authority to conduct public reviews and make recommendations.*
- 5.10. When a proposed development is referred to the EIRB, subsequent proceedings shall be conducted as a public review [11(16)].*
- 5.11. The EIRB is required to expeditiously review all proposed developments referred to it, and on the basis of the evidence and information before it recommend whether the development should proceed [11(24)].*
- 5.12. Should the EIRB wish to substitute its process for that set out in the Canadian Environmental Assessment Act, the EIRB will immediately following a referral from the EISC notify the*

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Minister of Environment and the Canadian Environmental Assessment Agency of the referral. According to an agreement between the Minister of the Environment and the EIRB dated _____ the Minister will notify the EIRB within 5 days after receiving notice of the referral, if the Minister is not in agreement with the EIRB substituting for the review process under the Canadian Environmental Assessment Act. Should the Minister be in agreement with the substitution of the EIRB review process, the EIRB will follow its procedures as outlined in this document.

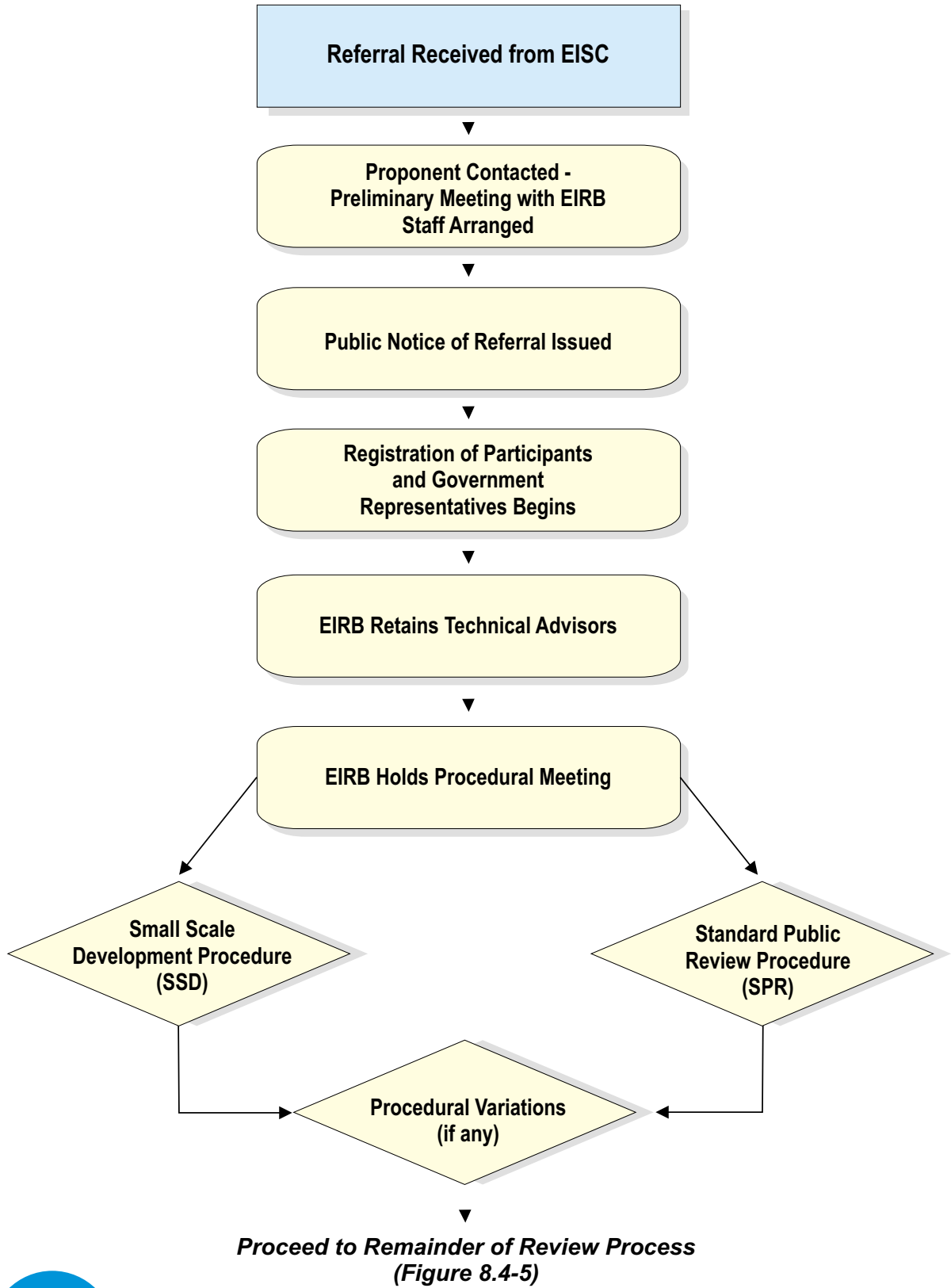
5.13. A Review Panel selected by the Chair of the EIRB from amongst the Permanent Members conducts the public review¹. The Review Panel is considered to be the same as the EIRB for the purpose of the public review; therefore a decision of the Review Panel is a decision of the EIRB.

A Review Panel will normally consist of four (4) permanent members (two selected from among those appointed by Canada and two selected from those appointed by the Inuvialuit), plus the Chair of the EIRB, for any given Public Review. Additional members from Eligible Native Organizations, in particular in this case, the Gwich'in Tribal Council, can be appointed as described in Sections 11.3 and 11.4 of the EIRB Operating Procedures.

The initial steps of the EIRB review process are illustrated in Figure 8.4-4. Given the nature of the proposed road project, the EIRB is likely to determine that the Standard Public Review Procedure (SPR) should be employed. The main steps of this procedure are illustrated in Figure 8.4-5. Section 14.0 of the EIRB Operating Procedures details the standard procedures to be followed.

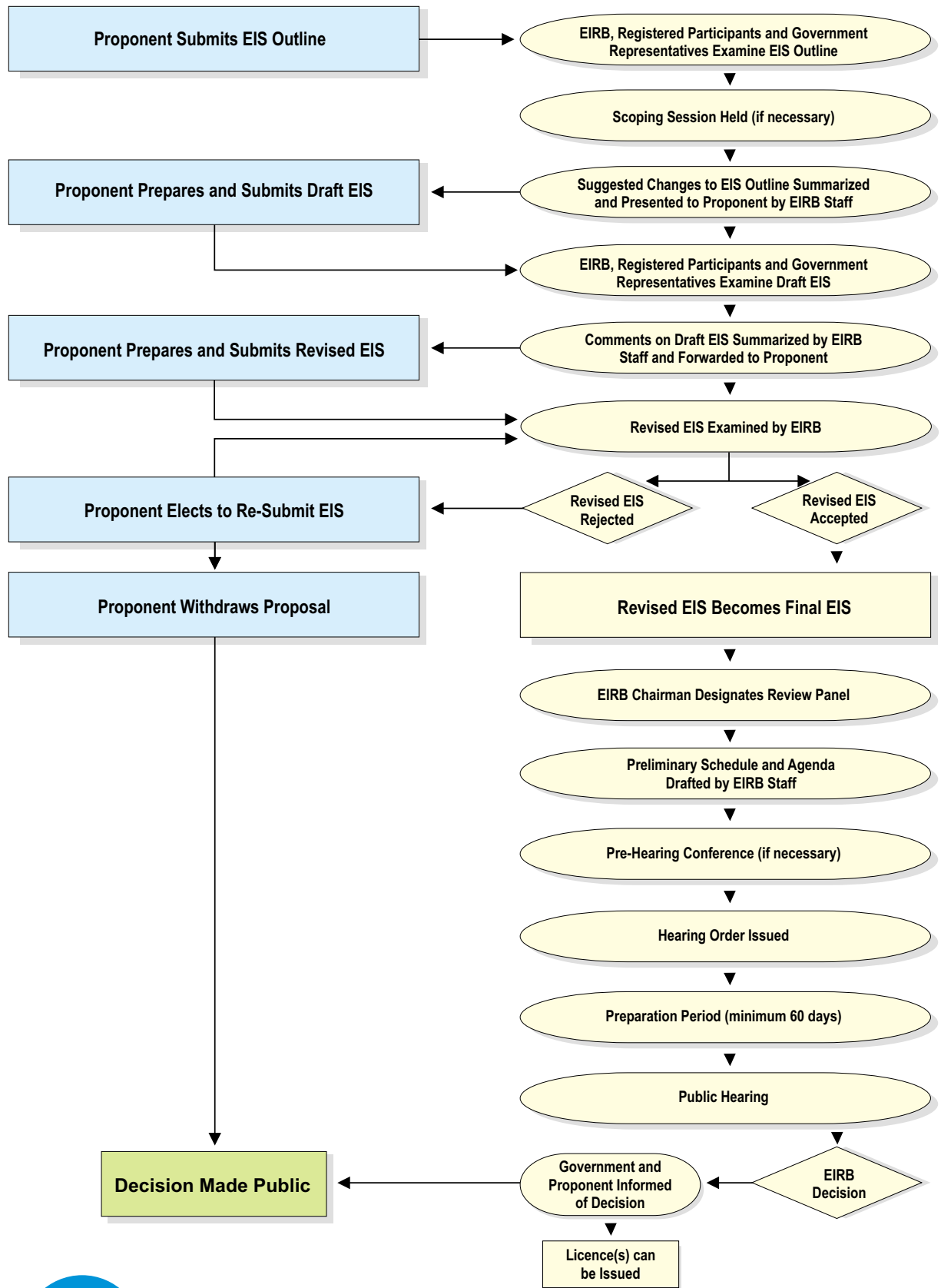
Sections 5.14 to 5.20 of the EIRB Operating Procedures, presented as follows, outline the Review Panel decision options and follow-up.

¹ For further details on Review Panel selection, refer to section 11 of the *Operating Procedures*

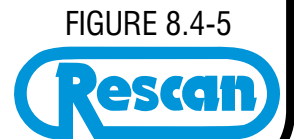


Initial Steps of the EIRB Process for Proposed Developments on ISR Lands





Standard EIRB Public Review (SPR) Procedure for Proposed Developments on ISR Lands



From Section 5 of the EIRB Operating Procedures

- 5.14. *If the Review Panel recommends that a proposed development should proceed, it shall recommend any terms and conditions that should be applied, including mitigative and remedial measures, and shall provide an estimate of the potential liability of the developer, determined on a worst case scenario [11(24) and 13(11)].*
- 5.15. *The Review Panel may also recommend that the proposed development be subject to further assessment and review, and may specify the additional information required [11(24)].*
- 5.16. *Decisions of the Review Panel are made by a majority vote of the Review Panel Members. The Chair of the Review Panel will vote only in the event of a deadlock [11(25)].*
- 5.17. *Decisions of the EIRB are transmitted to the regulatory authority or authorities competent to authorize the development by means of a decision report with accompanying reasons. Both parties to the IFA, the proponent, the registered intervenors and the public must also be informed of the decision.*
- 5.18. *The regulatory authority must consider the decision of the EIRB when deciding if the proposed development may proceed, especially when attaching terms and conditions, and specifying mitigative and remedial measures. The ultimate decision of the regulatory authority must be consistent with the IFA, particularly section 11 [11(27)].*
- 5.19. *If the regulatory authority is unwilling or unable to accept, or wishes to modify, any of the recommendations contained in the decision of the EIRB, it must provide written reasons within thirty (30) days [11(29)].*
- 5.20. *The decision of the regulatory authority to accept, reject, or modify the recommendations of the EIRB must be communicated in writing to all of the interested parties, and be made public [11(30)].*

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Based on the experience of the Board to date, the EIRB review process for the Inuvik-Tuktoyaktuk road development is expected to take from six (6) months to one (1) year to complete.

8.4.8 Inuvialuit Land Administration

As a follow-up to the January 22, 1999 meeting with the Joint Secretariat in Inuvik, on January 25, 1999 the entire consultation team met with Mr. Hans Arends, Land Administrator of the Inuvialuit Land Administration (ILA) in Tuktoyaktuk. The following information was obtained.

Mr. Arends confirmed the key role that the Inuvialuit Land Administration will play in the regulatory review of the proposed Inuvik to Tuktoyaktuk road project. In particular, decisions about land use on Inuvialuit Private Lands (7(1)(a)) will be made by the Inuvialuit Land Administration Commission.

Mr. Arends noted that the Ikhil Pipeline Project, located entirely on Inuvialuit Private Lands, was screened and approved by the ILA and ILAC. However, since the proposal Inuvik to Tuktoyaktuk Road Project would involve both private (7(1)(a)) and other (7(1)(b)) lands within the Inuvialuit Settlement Region, ILAC has the option to refer this development proposal to the EISC for a more consolidated review.

The critical importance of the Husky lakes area to the Inuvialuit people was also noted. Section 8(1) of the Inuvialuit Final Agreement which follows, defines the intent of this section of the IFA.

From Section 8 of the IFA regarding Husky lakes:

8.(1) With respect to Area Number 2 (Husky lakes) approval for any development activity shall be withheld unless the developer proves that the proposed development activity meets acceptable environmental standards and accounts for his standard of performance. The criteria for establishing acceptable environmental standards and accounts for this standard of performance shall be set by the Environmental Impact Review Board.

As amended January 15, 1987

***Environmental
Standards for
Husky Lakes***

8.4.9 Gwich'in Land and Water Board

On January 22, 1999, the Rescan team met with Mr. Ken Weagle, Executive Director of the Gwich'in Land and Water Board (GLWB) and obtained the following information on the possible role of the GLWB in the most likely regulatory process for the proposed Inuvik to Tuktoyaktuk road project.

Following promulgation of the Mackenzie Valley Resource Management Act on December 22, 1998, the Gwich'in Land and Water Board now represents “the first point of entry” for proposed development projects to be located within the Gwich'in Settlement Area (GSA) or in adjacent areas (*e.g.* the Inuvialuit Settlement Region) which may impact the GSA.

On the assumption that the proposed Inuvik to Tuktoyaktuk road project would be located entirely within ISR lands, by starting at the terminus of the existing Navy Road, it was indicated that the primary review process for this proposed development would be that administered by the EISC and EIRB established under the Inuvialuit Final Agreement.

Gwich'in Tribal Council participation, if determined to be necessary, could be pursued through representation on either the EISC or the EIRB by nominating a person for appointment as a Senior Member of either or both IFA review bodies in accordance with Section 15 of the MVRMA.

In addition, the Gwich'in Tribal Council may make direct representations to the EISC or EIRB as part of the normal screening and/or review processes that would be followed under the IFA.

The Gwich'in Land and Water Board would also be responsible for reviewing and issuing Land Use Permits and/or Water Licenses for activities such as borrow pits and quarries located within the Gwich'in Settlement Area (*e.g.* Campbell Lakes) which may be used to supply aggregate for the road project.

For such activities, the developer would submit the Project Description (prepared for IFA process needs) and the necessary applications for Land Use Permits and/or Water Licenses to the GLWB for preliminary screening to determine the following:

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- a) Does the proposed activity pose a significant adverse impact on the environment or is it of public concern? If not the application can proceed through the process.
- b) If the proposed activity may have significant adverse environmental impacts, the application will be referred to the Mackenzie Valley Environmental Impact Review Board.
- c) If there is public concern about the proposed activity, the GLWB may conduct a public hearing or refer the application to the Mackenzie Valley Environmental Impact Review Board.
- d) Should application be rejected? GLWB would have to provide reasons for its decision.

Figure 8.4-6 illustrates the anticipated process for preliminary screening and processing of Land Use and Water License applications in the Gwich'in Settlement Area.

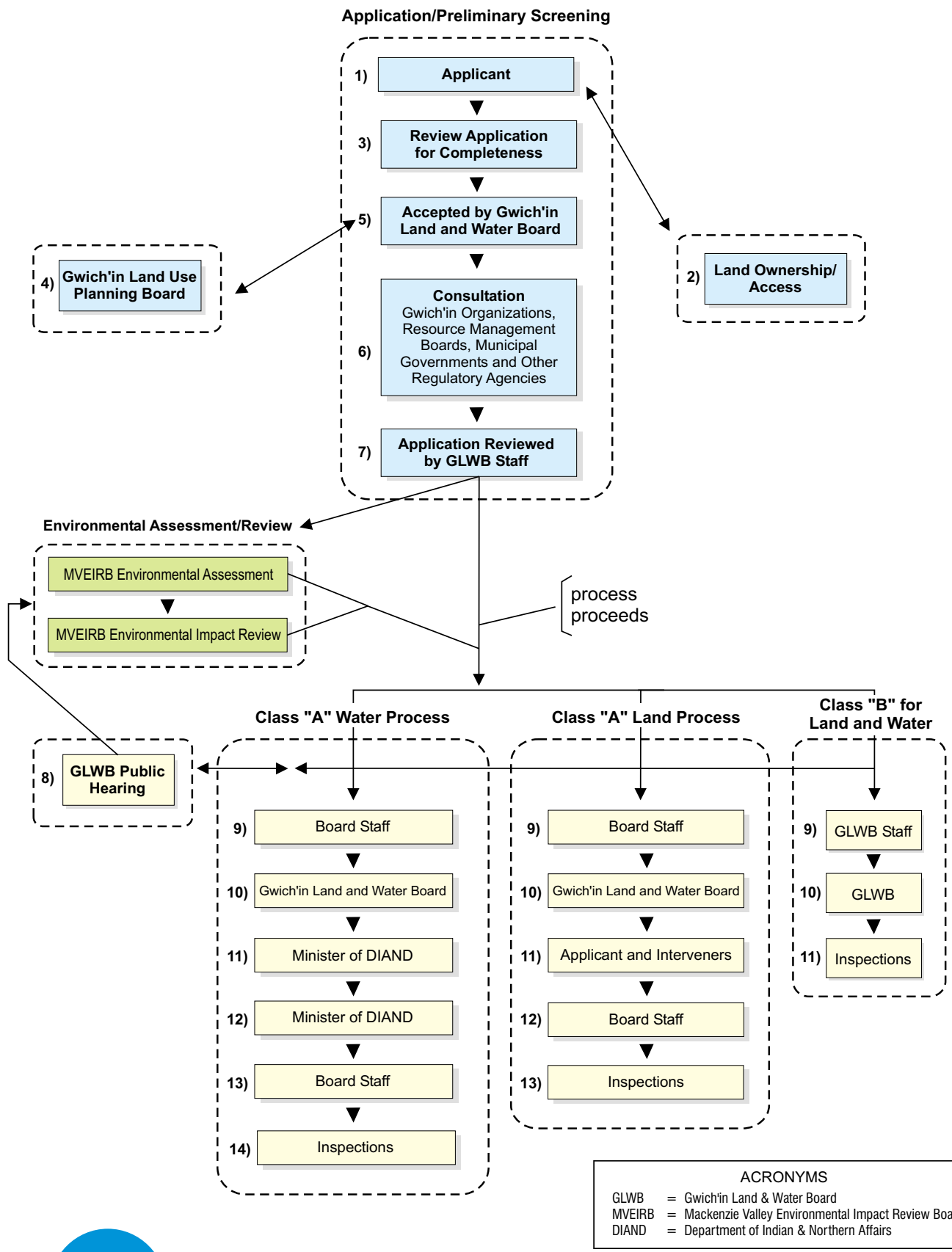
For borrow pits or quarries located in the Gwich'in Settlement Area, it appears unlikely that the associated applications would require referral to the Mackenzie Valley Environmental Impact Review Board.

8.5 Summary of Possible Regulatory Process Options

Section 8.4 of this report summarized the main results of the meetings convened with each of the regulatory agencies that may or will play roles in the future regulatory process for the proposed Inuvik to Tuktoyaktuk road project assuming it were to proceed to the approvals phase.

The precise nature of the likely regulatory process to be followed remains somewhat uncertain because of a number of factors including:

- a) Whether the proposed road will be located entirely within the ISR or whether it will straddle both ISR and GSA lands;
- b) The lack of a firm schedule for implementation of the project; and
- c) The continuing evolution of the northern regulatory framework.



Gwich'in Land and Water Board Water License and Land Use Permit Application



FIGURE 8.4-6

Given these factors, the following are our views on the two most likely regulatory review process options that would be followed depending on the final routing of the road alignment relative to the ISR and/or GSA lands.

8.5.1 Option 1 – Road Alignment Limited to ISR Lands

To optimize the regulatory review process, it would appear to be advantageous to locate the entire road corridor within the physical boundaries of the primary land claim area to be affected, namely the Inuvialuit Settlement Region. This can be achieved by starting the proposed new road at the present terminus of the existing Navy Road. By pursuing this option the paramount environmental impact assessment process to be satisfied would be that embodied in the Inuvialuit Final Agreement (IFA).

As indicated previously in Sections 8.4.7 and 8.4.8, for proposed developments on ISR lands, the proponent would initially be required to submit a Project Description to the Inuvialuit Land Administration (ILA) for Inuvialuit Private Lands (7(1)(a) lands) and the Environmental Impact Screening Committee (EISC) for other lands (7(1)(b) lands) in the Inuvialuit Settlement Region.

The Project description would be screened as per Figure 8.4-3. Since it is likely that a number of significant environmental and/or socio-economic impacts would be identified, the project would most probably be referred to the Environmental Impact Review Board (EIRB) for further review as per the process described in Figure 8.4-5.

To most effectively address concerns of the Gwich'in Settlement Area, in particular in relation to the use of aggregate borrow or quarry sites located on Gwich'in lands, and possible transboundary issues, direct Gwich'in participation in the review process would be essential.

Sections 11.3 and 11.4 of the EIRB Operating Procedures allow for the appointment of members from Eligible Native Organizations such as the Gwich'in Tribal Council to the EIRB Review Panel and Section 15 of the MVRMA specifies the process for nominating Gwich'in representatives consistent with the expectations of the IFA.

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Figure 8.5-1 is a simplified representation of the Option 1 regulatory review process for the proposed Inuvik to Tuktoyaktuk road project.

8.5.2 Option 2 – Road Alignment Traverses Both ISR and GSA Lands

In the event that the final road alignment was located on both Gwich'in Settlement Area and Inuvialuit Settlement Region lands, the project would likely be determined to have Transboundary implications and would thus need to satisfy the review process requirements of both the Inuvialuit Final Agreement and the Mackenzie Valley Resource Management Act. To optimize the regulatory process needs of both authorities, it would be desirable to enter into an agreement to coordinate the two review processes.

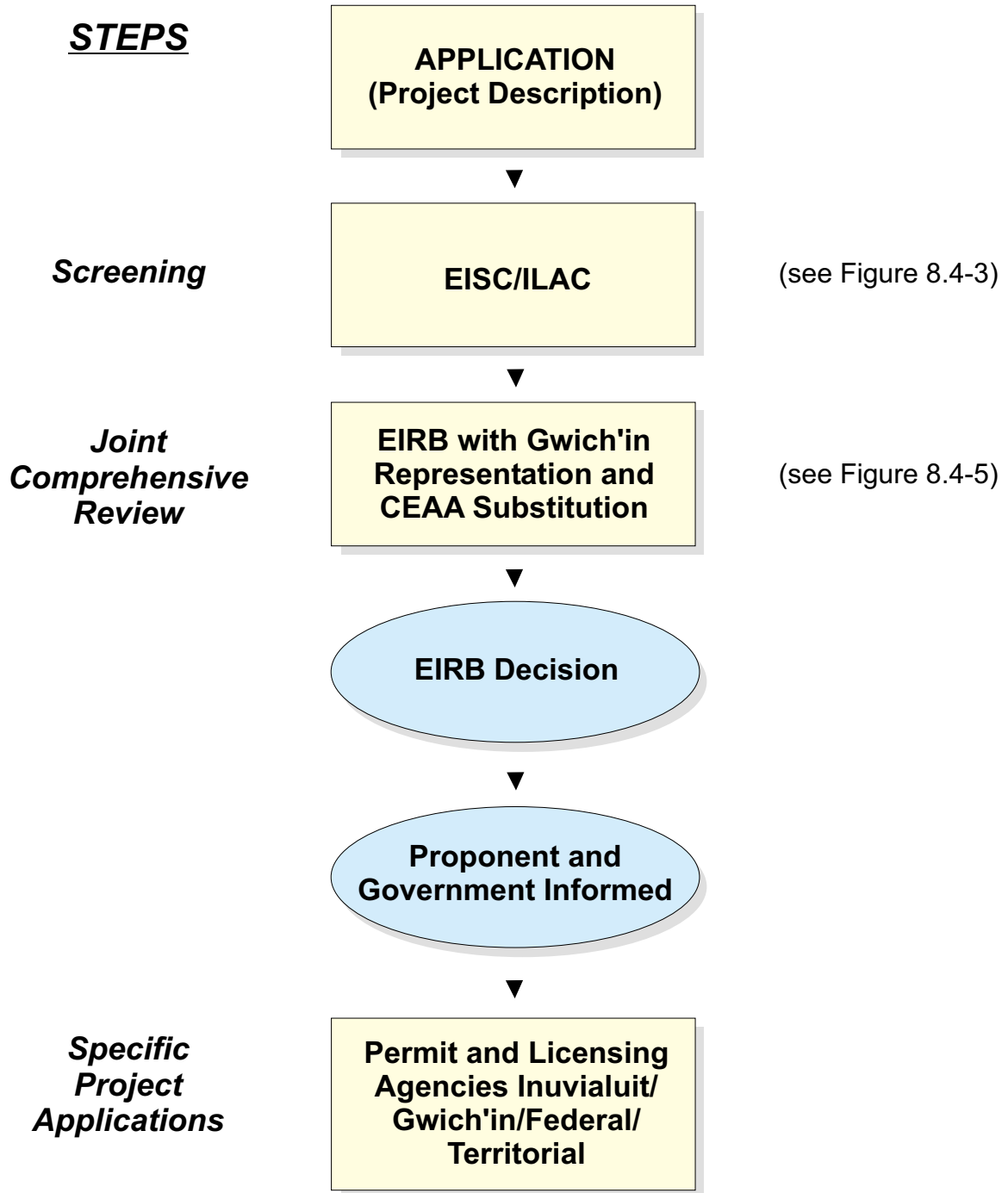
The details of the process to be followed would need to be defined, but in general is expected to involve both joint screening, followed by more detailed review of the project by a joint review panel established under the authorities of the IFA and the MVRMA.

Figure 8.5-2 presents a simplified representation of the Option 2 joint regulatory process which could be established for the proposed Inuvik to Tuktoyaktuk road project. The report of the joint review panel would be submitted to the federal ministers of DIAND and Environment for signoff prior to the authorization of specific permits, licences and other approvals by the various regulatory agencies as identified in Section 8.5.4.

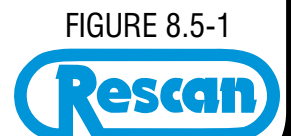
Before embarking on a project of this nature, it would be prudent for the proponent to further discuss and achieve agreement on the actual regulatory process to be followed at the time of application. This agreement should include timelines linked as closely as possible to the needs of the project and the processing schedules of the regulators.

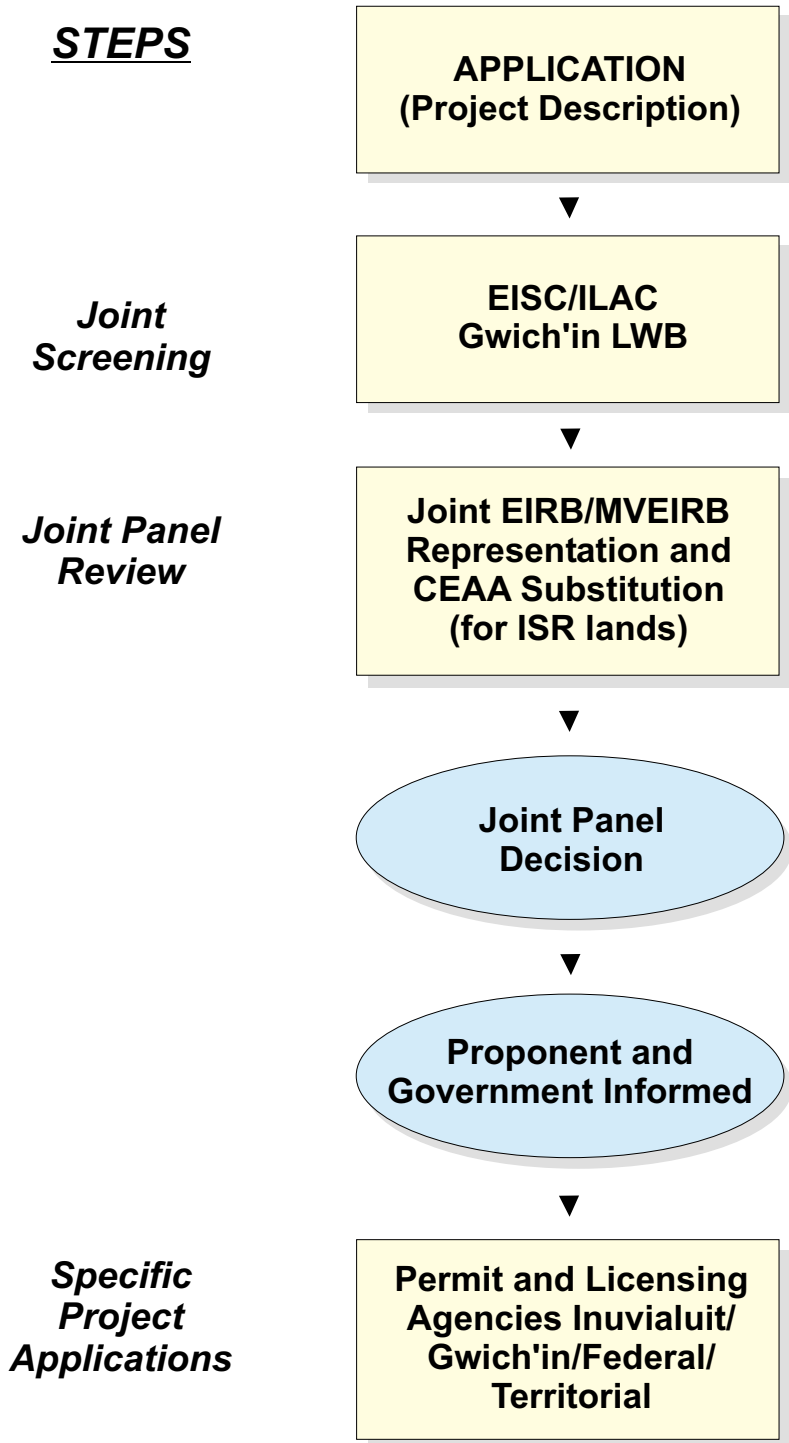
8.5.3 Cumulative Effects Assessment

The review processes embodied in both the IFA and the MVRMA require an assessment of the possible cumulative impacts that may result from a development in combination with other existing and/or impending projects planned for the development area.

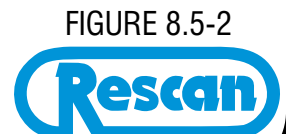


**Simplified Representation of the Option 1
Regulatory Review Process for the
Proposed Inuvik to Tuktoyaktuk Road**





**Simplified Representation of the Option 2
Joint Regulatory Review Process for the
Proposed Inuvik to Tuktoyaktuk Road**



The scope of the required cumulative effects assessment is not specified in either the MVRMA or the interim guidelines developed by the MVEIRB but is likely to follow the new guidelines developed by the Canadian Environmental Assessment Agency (1999), which coincidentally also meet the needs of the IFA.

Citing from CEAA (1999), *“cumulative effects are changes to the environment that are caused by an action in combination with other present and future human actions. Cumulative assessments (CEA’s) are typically expected to:*

- *Assess effects over a larger (i.e., “regional”) area that may cross jurisdictional boundaries; (includes effects due to natural perturbations affecting environmental components and human actions)*
- *Consider effects on Valued Ecosystem Components (VECs) due to interactions with other actions, and not just the effects of the single action under review;*
- *Include other past, existing and future (e.g., reasonably foreseeable) actions; and*
- *Evaluate significance in consideration of other than just local, direct effects.*

Cumulative effects are not necessarily that much different from effects examined in an EIA; in fact, they may be the same. Many EIAs have focussed on a local scale in which only the footprint or area covered by each action’s component is considered. Some EIAs also consider the combined effects of various components together (e.g., a quarry and its access road). A CEA further enlarges the scale of the assessment to a regional level. For the practitioner, the challenge is determining how large an area around the action should be assessed, how long in time, and how to practically assess the often complex interactions among the actions. In all other ways, CEA is fundamentally the same as EIA and, therefore, often relies on established EIA practice.”

In the context of the proposed Inuvik to Tuktoyaktuk Road development, cumulative effects considerations could arise primarily from the increase in people and vehicles that would travel up the new road, which in turn could place increased pressures on the existing natural resources communities and infrastructure of the region.

8.5.4 Future Permits, Licences and Authorizations

Assuming the project proceeds through and successfully completes the eventual regulatory review process established for this project, the proponents would then proceed to obtain specific land use permits, water licences and other authorizations from the appropriate Inuvialuit, Gwich'in, federal or territorial government regulatory agencies as required. Table 8.5-1 provides a summary of licences, permits and authorizations that may be required for the proposed Inuvik-Tuktoyaktuk road development.

Table 8.5-1
Permits, Licences and Authorizations Required for the Development
of the Inuvik-Tuktoyaktuk Road

Permit/Approval	Activity	Legislation	Lead Agency
<u>Planning, Design and Environmental Assessment Phase</u>			
Land Use Permit			
• Inuvialuit Settlement Region	Access, route survey, clearing location of camps, borrow sites, miscellaneous land use.	Inuvialuit Final Agreement Inuvialuit Land Administration Rules and Procedures Territorial Lands Act and Regulations	Inuvialuit Land Administration (private lands) Department of Indian Affairs and Northern Development (Crown Land)
• Gwich'in Settlement Area	Access, route survey, clearing location of camps, borrow sites, miscellaneous land use.	Gwich'in Comprehensive Land Claim Agreement Mackenzie Valley Resource Management Act and Land Use Regulations	Gwich'in Land and Water Board Gwich'in Land Administration (private lands)
Water Licence			
• Inuvialuit Settlement Region	Water use and waste disposal at camps.	Inuvialuit Final Agreement Inuvialuit Land Administration Rules and Regulations NWT Waters Act and Regulations	NWT Water Board
• Gwich'in Settlement Area	Water use and waste disposal at camps.	Gwich'in Comprehensive Land Claim Agreement Mackenzie Valley Resource Management Act and Land Use Regulations	Gwich'in Land and Water Board
Scientific Research Permit			
• Terrestrial/Wildlife	Conduct of research and wildlife studies in support of environmental assessment.	NWT Research Act NWT Wildlife Act	Aurora Research Institute GNWT Resources, Wildlife and Economic Development
• Fisheries	Conduct of fisheries studies.	Fisheries Act	Department of Fisheries and Oceans
<u>Construction Phase</u>			
Land Use Permit/Quarry Permit			
• Inuvialuit Settlement Region	Route clearing, camps, lay down and staging areas, borrow sites.	Inuvialuit Final Agreement Inuvialuit Land Administration Rules and Procedures Territorial Lands Act and Regulations	Inuvialuit Land Administration (private lands) Department of Indian Affairs and Northern Development (Crown Land)
• Gwich'in Settlement Area	Route clearing, camps, lay down and staging areas, borrow sites.	Gwich'in Comprehensive Land Claim Agreement Mackenzie Valley Resource Management Act and Land Use Regulations	Gwich'in Land and Water Board Gwich'in Land Administration (private lands) Department of Indian Affairs and Northern Development (Crown Land) MACA (Commissioners Land)

(continued)

Table 8.5-1
Permits, Licences and Authorizations Required for the Development
of the Inuvik-Tuktoyaktuk Road (Completed)

Permit/Approval	Activity	Legislation	Lead Agency
<u>Construction Phase (Continued)</u>			
Water License			
• Inuvialuit Settlement Region	Water use and waste disposal at camps stream crossing.	Inuvialuit Final Agreement Inuvialuit Land Administration Rules and Regulations NWT Waters Act and Regulations	NWT Water Board
• Gwich'in Settlement Area	Water use and waste disposal at camps stream crossing.	Gwich'in Comprehensive Land Claim Agreement Mackenzie Valley Resource Management Act and Land Use Regulations	Gwich'in Land and Water Board
Fisheries Authorizations	For works or undertakings affecting fisheries habitat <i>e.g.</i> , culverts, diversions, ponding <i>etc.</i>	Fisheries Act	Department of Fisheries and Oceans
Permit for Construction within Navigable Waters	Construction of bridges or culverts across or over navigable water bodies.	Navigable Waters Protection Act and Regulations	Canadian Coast Guard, Department of Fisheries and Oceans
Explosives Magazine Permit, Blasting Permit	Temporary storage and use of explosives in camp and work areas.	Explosives Act	Natural Resources Canada
Transportation of Dangerous Goods Certificate	Transportation of dangerous goods.	Transportation of Dangerous Goods Act	Transport Canada
Health Permit	Sewage disposal, sanitation at camps, food storage and handling.	Public Health Act	NWT Health and Social Services
Scientific Research Permit			
• Terrestrial/Wildlife	Conduct of research and wildlife studies in support of environmental assessment.	NWT Research Act NWT Wildlife Act	Aurora Research Institute GNWT Resources, Wildlife and Economic Development
• Fisheries	Conduct of fisheries studies.	Fisheries Act	Department of Fisheries and Oceans

9. DATA GAPS

One objective of the Environmental Scoping Study was to identify data gaps arising from the review of existing environmental and socioeconomic baseline information, the community consultation sessions and traditional knowledge interviews, that will need further study in support of a future environmental assessment and development application for the proposed Inuvik to Tuktoyaktuk road.

The following summarizes the status of available information and the primary data gaps and/or future study needs identified through the program of work undertaken for the various components of the Environmental Scoping Study.

9.1 Climate and Air Quality

An excellent climatological database has been developed for the Inuvik-Tuktoyaktuk area by Environment Canada. The available information, which will continue to be built upon in the years to come, will be sufficient to meet the environmental assessment and construction/operational needs of the proposed Inuvik-Tuktoyaktuk road.

9.2 Surficial Geology

In general the surficial geology of the 1977 PWC Surveyed Route is well documented and sufficient for the further planning of the proposed road. However, at the Tuktoyaktuk and Inuvik community public consultation and elder interview sessions held in January 1999 (chapters 6 and 7), some individuals expressed considerable concern over the proximity of the proposed road to Husky Lakes and requested that the alignment be relocated two to three kilometres inland in this area if possible.

Based on these concerns, the feasibility of relocating the alignment in the Husky Lakes area should be examined. In particular, a level of “ground truthing,” similar to that completed for the 1977 PWC Surveyed Route is recommended.

9.3 Hydrology and Water Quality

The regional hydrological characteristics of the Tuktoyaktuk Peninsula were analyzed in some depth in the Environmental Scoping Report. For final road alignment and design purposes, flood flows determined by using the regional frequency curves will need to be confirmed by calibrating precipitation – runoff models for the major stream crossings.

In addition, an important phenomenon that was not addressed is that of culvert icings and river ice jams. If culverts are subject to icing, the magnitude and frequency of the icings must also be taken into account and allowances made during the design phase. No estimates have yet been made for the effects of river ice jams on the magnitude of floods in the corridor area.

Once the detailed alignment of the proposed Inuvik-Tuktoyaktuk road has been established, all watercourses that will be crossed by the road will have been identified. Due to the low relief of the Tuktoyaktuk Peninsula, even minimal terrain disturbance could potentially result in lakes drying up and ponding as a result of blockage of the natural flow paths. Should minor flow paths be disrupted, an assessment of the potentially drained and flooded areas would be required.

9.4 Aquatic Biota

The use of the freshwater lake and stream systems in the upland Mackenzie Delta and Tuktoyaktuk Peninsula is well documented compared to other regions of the Northwest Territories. An earlier reconnaissance survey of the lakes and streams along the proposed road alignment has provided valuable information on the potential amenability of these waterbodies for use by migratory species (Percy and Hoban, 1977). Actual migrations and utilization of these waterbodies, particularly along the southern 82% of the proposed road alignment, have not been as well documented as other systems in the region. However, information provided by other studies in the region provide valuable information that can be used to infer potential impacts and therefore aid in preventing impacts and/or developing mitigation strategies prior to development and therefore minimizing any potential impacts. Data gaps therefore exist where there is a potential for use of lake and stream systems by migratory species but where migrations have not been actually documented.

9.5 Vegetation

The existing baseline vegetation information for the Tuktoyaktuk Peninsula in the vicinity of the proposed road corridor indicates that the vegetation units and plant species found are typical of this region.

However, to assist in establishing the optimal location of the proposed road and associated infrastructure, a baseline ecosystems (terrain and vegetation) survey should be undertaken for the corridor area in the future. The survey results, expressed in map form, will provide an integrated inventory of terrain, soil and vegetation resources, which can be used to identify terrain and vegetation sensitivities that should be avoided or protected. In addition, the community consultation sessions and traditional knowledge interviews confirmed that portions of the corridor area are rich in berries which are harvested annually by the local residents.

9.6 Wildlife and Habitat

The review of the available scientific information and input received from the public consultation and traditional knowledge sessions confirmed the importance of certain portions of the proposed road corridor, in particular the areas around Husky, Parsons and Noel lakes, for wildlife and local resource harvesting activities. Thus, to provide optimal future protection for the wildlife resources of the region, additional work will be required in some areas.

More information on seasonal caribou distribution, abundance, and habitat use within the Inuvik-Tuktoyaktuk corridor will be required to evaluate the specific potential effects of future road development.

Because of the grizzly bear's ecological and economic importance, and its potential for conflict with construction and use of a road, local knowledge of grizzly bear use of the Inuvik-Tuktoyaktuk corridor requires updating.

The potential for local sources of construction materials as important wildlife habitat (*e.g.*, carnivore denning areas) should be determined by intensive surveys of those sites.

The potential for raptor nest sites within the Inuvik-Tuktoyaktuk corridor should be evaluated through a survey program.

9.7 Heritage Resources

Recent geomorphologic and archaeological studies associated with the NOGAP project have indicated that the archaeological potential within portions of the Mackenzie Delta is higher than previously expected. Sites have been found inland from the rivers and coast and along abandoned river and creek channels. Aerial photograph interpretation and helicopter survey have contributed significantly to the archaeological record, but ground reconnaissance is still required, especially in densely vegetated areas. Archaeological resources relating to the Arctic Small Tool tradition (Palaeo-eskimo), more recent prehistoric use, and the historic Inuit are present within the Mackenzie Delta and could be encountered within the proposed study area. In addition, it is possible that earlier occupations may be encountered on paleo-landforms and that evidence of non-Inuit historical activity will be found.

Although the potential for archaeological sites is not high in the interior of the Tuktoyaktuk Peninsula, the existing data on archaeological resources indicate that they are sufficient to warrant further work. In addition, any ancillary facilities such as gravel borrow sites, work and staging areas and storage locations should be identified early in the planning process to permit the assessment of archaeological potential.

The first step in further investigating the archaeological resources of the Inuvik to Tuktoyaktuk Road study area should be to compile additional background data, including a review of the archaeology site inventory on file with the Canadian Museum of Civilization. Aerial photograph and topographic map interpretation of the proposed route should then be undertaken to identify landforms and areas with sufficient archaeological potential to justify ground reconnaissance (maps and air photos of a suitable scale would be required). This should be supplemented, if possible, by helicopter reconnaissance and consultation to access traditional knowledge relevant to the area of interest. Consultation with knowledgeable local residents or with other specialists who have worked in the area would be of considerable assistance in the determination of archaeological potential.

Once additional background research, topographic interpretation, consultation and preliminary field reconnaissance has been completed, it would be possible to determine the level and scope of future archaeological field investigations. It is likely that at least some detailed ground reconnaissance will be required since archaeological resources have been found on interior lakes near the proposed road route in the vicinity of the community of Tuktoyaktuk.

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Appendix 3.3-1
Annual Maximum Flows and Date of Occurrence

		1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Boot Creek near Inuvik	10LC010					21-May	03-Jun	01-Jun	-	22-May	05-Jun	31-May	31-May	27-May	27-May						
Trail Valley Creek near Inuvik	10ND002	31-May	07-Jun	27-May	-	30-May	09-Jun	03-Jun	-	31-May	08-Jun	07-Jun	04-Jun	31-May	30-May	17-May	01-Jun	02-Jun	01-Jun	28-May	30-May
Hans Creek above Eskimo Lakes	10ND004												04-Jun	08-Jun	03-Jun	28-May	08-Jun	07-Jun	30-May	-	07-Jun
Hans Creek near Inuvik	10ND001	04-Jun	14-Jun	28-May	18-Jun	05-Jun	-	07-Jun	07-Jun	04-Jun	13-Jun	09-Jun									
Freshwater Creek near Tuktoyaktuk	10ND005														05-Jul	03-Jul	06-Jul	29-Jun	05-Jul	30-Jun	

		Maximum Daily Discharge m ³ /s																			
		1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Boot Creek near Inuvik	10LC010					4.59	2.52	4.2	-	1.25	1.27	4	1.55	1.69	3.42						
Trail Valley Creek near Inuvik	10ND002	45.9	7.08	4.25	-	7.2	8.13	8	-	7	8.65	7.3	5.3	8	4.81	4.14	6	6.5	1.24	3.82	6.8
Hans Creek above Eskimo Lakes	10ND004												11.5	18.1	18	14.3	20.3	24	13.1	-	28.5
Hans Creek near Inuvik	10ND001	30.6	23.5	17.5	87	29.8	-	16.5	10	9.8	10.9	18.4									
Freshwater Creek near Tuktoyaktuk	10ND005														1.54	1.18	2.76	2.54	1.37	1.47	

Source: Environment Canada, WSC (1998)

Appendix 3.3-2
7-Day Average Low Flows and Date of Occurrence

Boot Creek near Inuvik 10LC010		Trail Valley Creek near Inuvik 10ND002		Hans Creek near Inuvik 10ND001		Hans Creek above Eskimo Lakes 10ND004		Freshwater Creek near Tuktoyaktuk 10ND005	
Date	(m ³ /s)	Date	(m ³ /s)	Date	(m ³ /s)	Date	(m ³ /s)	Date	(m ³ /s)
1977		26-Jul	0.028	14-Aug	0.378				
1978		n/a	n/a	nsl	nsl				
1979		31-Jul	0.049	n/a	n/a				
1980		21-Jul	0.002	28-Aug	0.511				
1981	25-Sep	0.051	29-Jul	0.617	01-Jul	1.191			
1982	nsl	nsl	03-Aug	0.007	n/a	n/a			
1983	nsl	nsl	23-Jul	0.000	nsl	nsl			
1984	n/a	n/a	n/a	n/a	21-Aug	0.040			
1985	nsl	nsl	nsl	nsl	nsl	nsl			
1986	06-Aug	0.001	22-Jul	0.004	26-Aug	0.316			
1987	10-Aug	0.004	21-Jul	0.024	01-Aug	0.754			
1988	25-Jul	0.011	29-Jul	0.033			14-Aug	0.081	
1989	10-Jul	0.020	09-Jul	0.018			13-Aug	0.575	
1990	04-Jul	0.014	04-Jul	0.045			07-Jul	2.033	nsl nsl
1991			18-Jul	0.010			11-Aug	0.181	09-Sep 0.295
1992			06-Aug	0.000			nsl	nsl	nsl nsl
1993			29-Jul	0.003			25-Aug	0.065	27-Sep 0.244
1994			01-Aug	0.002			n/a	n/a	nsl nsl
1995			15-Aug	0.036			n/a	n/a	14-Aug 0.505
1996			26-Jul	0.021			n/a	n/a	

note: n/a = not available

nsl = no summer low flows observed, i.e. hydrographs decline steadily from freshet to freeze-up

Date given is the the first day of the 7-day averaging period

Source: Environment Canada, WSC (1998)

Appendix 3.3-3 First Day of Ice-Conditions

	Boot Creek near Inuvik 10LC010	Trail Valley Creek near Inuvik 10ND002	Hans Creek near Inuvik 10ND001	Hans Creek above Eskimo Lakes 10ND004	Freshwater Creek near Tuktoyaktuk 10ND005
1977		n/a	n/a		
1978		n/a	n/a		
1979		10-Oct	18-Oct		
1980		14-Sep	16-Sep		
1981	01-Oct	28-Sep	17-Oct		
1982	25-Sep	30-Sep	n/a		
1983	23-Sep	29-Sep	09-Oct		
1984	n/a	n/a	30-Sep		
1985	01-Oct	08-Oct	03-Oct		
1986	25-Sep	26-Sep	26-Sep		
1987	08-Oct	08-Oct	10-Oct		
1988	28-Sep	27-Sep		29-Sep	
1989	12-Oct	10-Oct		10-Oct	
1990	01-Oct	01-Oct		01-Oct	n/a
1991		30-Sep		08-Oct	30-Sep
1992		15-Sep		01-Oct	16-Sep
1993		23-Sep		28-Sep	26-Sep
1994		23-Sep		26-Sep	17-Sep
1995		01-Oct		n/a	01-Oct
1996		27-Sep		27-Sep	n/a

note: n/a = not available

Source: Environment Canada, WSC (1998)

Appendix 3.3-4 Freeze-up Dates

	Boot Creek near Inuvik 10LC010	Trail Valley Creek near Inuvik 10ND002	Hans Creek near Inuvik 10ND001	Hans Creek above Eskimo Lakes 10ND004	Freshwater Creek near Tuktoyaktuk 10ND005
1977		n/a	n/a		
1978		n/a	n/a		
1979		25-Oct	05-Dec		
1980		09-Oct	27-Nov		
1981	15-Nov	20-Oct	27-Nov		
1982	01-Nov	14-Dec	31-Dec		
1983	09-Aug	31-Oct	13-Nov		
1984	n/a	n/a	21-Nov		
1985	01-Aug	14-Aug	03-Oct		
1986	18-Oct	19-Oct	22-Dec		
1987	31-Oct	27-Oct	26-Nov		
1988	12-Nov	25-Oct		30-Nov	
1989	20-Nov	04-Nov		15-Jan	
1990	05-Nov	26-Oct		07-Nov	n/a
1991		01-Nov		30-Nov	n/a
1992		21-Sep		13-Sep	10-Dec
1993		22-Oct		06-Dec	01-Feb
1994		08-Nov		16-Nov	04-Nov
1995		30-Oct		n/a	14-Nov
1996		23-Oct		09-Dec	

note: n/a = not available

Source: Environment Canada, WSC (1998)

Appendix 3.3-5
Mean Monthly and Mean Annual Discharge

	Station No.	Drainage Area km ²	Period of Record		Mean Monthly Discharge m ³ /s												Mean Annual Discharge m ³ /s
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Boot Creek near Inuvik	10LC010	28.2	1981-90	seasonal	0.000	0.000	0.000	0.000	0.416	0.492	0.045	0.023	0.043	0.018	0.001	0.000	0.087
Trail Valley Creek near Inuvik	10ND002	68.3	1977-96	seasonal	0.000	0.000	0.000	0.000	0.666	1.420	0.185	0.256	0.367	0.037	0.001	0.000	0.252
Hans Creek above Eskimo Lakes	10ND004	329	1988-96	continuous	0.000	0.000	0.000	0.000	0.457	7.140	1.700	0.435	1.120	0.789	0.110	0.008	0.985
Hans Creek near Inuvik	10ND001	337	1977-87	seasonal	0.000	0.000	0.000	0.000	0.257	9.330	2.580	0.775	1.140	0.545	0.176	0.028	1.390
Freshwater Creek near Tuktoyaktuk	10ND005	167	1990-95	continuous	0.023	0.000	0.000	0.000	0.013	0.992	1.470	0.780	0.622	0.409	0.228	0.091	0.463

	Station No.	Drainage Area km ²	Period of Record		Mean Monthly Unit Yield L/s/km ²												Mean Annual Unit Yield L/s/km ²
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Boot Creek near Inuvik	10LC010	28.2	1981-90	seasonal	0.000	0.000	0.000	0.000	0.015	0.017	0.002	0.001	0.002	0.001	0.000	0.000	3.1
Trail Valley Creek near Inuvik	10ND002	68.3	1977-96	seasonal	0.000	0.000	0.000	0.000	0.010	0.021	0.003	0.004	0.005	0.001	0.000	0.000	3.7
Hans Creek above Eskimo Lakes	10ND004	329	1988-96	continuous	0.000	0.000	0.000	0.000	0.001	0.022	0.005	0.001	0.003	0.002	0.000	0.000	3.0
Hans Creek near Inuvik	10ND001	337	1977-87	seasonal	0.000	0.000	0.000	0.000	0.001	0.028	0.008	0.002	0.003	0.002	0.001	0.000	4.1
Freshwater Creek near Tuktoyaktuk	10ND005	167	1990-95	continuous	0.000	0.000	0.000	0.000	0.000	0.006	0.009	0.005	0.004	0.002	0.001	0.001	2.8

Source: Environment Canada, WSC (1998)

Appendix 3.3-6

Summary of Maximum Instantaneous (I) to Maximum Daily (D) Discharge (m³/s)

Boot Creek near Inuvik 10LC010				Trail Valley Creek near Inuvik 10ND002			Hans Creek above Eskimo Lakes 10ND004			Hans Creek near Inuvik 10ND001			Freshwater Creek near Tuktoyoktuk 10ND005					
	I	D	I/D	I	D	I/D	I	D	I/D	I	D	I/D	I	D	I/D			
1986	1.35	1.27	1.06	n/a	n/a	n/a	1991	15.70	14.30	1.10	1977	32.30	30.60	1.06	1990	1.58	1.54	1.03
1990	3.76	3.42	1.10								1978	24.90	23.50	1.06	1991	1.19	1.18	1.01
											1983	16.90	16.50	1.02	1992	2.79	2.76	1.01
											1985	10.70	9.80	1.09				
	Average		1.08	Average		n/a	Average		1.10	Average		1.06	Average		1.02			

note: n/a = not available

Source: Calculation based on data from Environment Canada, WSC (1998)

Appendix 3.3-7 Break-up Dates

	Boot Creek near Inuvik 10LC010	Trail Valley Creek near Inuvik 10ND002	Hans Creek near Inuvik 10ND001	Hans Creek above Eskimo Lakes 10ND004	Freshwater Creek near Tuktoyaktuk 10ND005
1977		28-May	31-May		
1978		01-Jun	01-Jun		
1979		21-May	23-May		
1980		n/a	04-Jun		
1981	06-May	21-May	30-May		
1982	19-May	17-May	n/a		
1983	27-May	29-May	27-May		
1984	n/a	n/a	27-May		
1985	16-May	18-May	20-May		
1986	31-May	30-May	05-Jun		
1987	25-May	30-May	01-Jun		
1988	11-May	31-May		30-May	
1989	21-May	27-May		01-Jun	
1990	15-May	25-May		25-May	14-Jun
1991		12-May		12-May	30-May
1992		26-May		27-May	12-Jun
1993		23-May		24-May	26-May
1994		17-May		17-May	20-May
1995		04-May		n/a	06-May
1996		26-May		29-May	

note: n/a = not available

Source: Environment Canada, WSC (1998)



PUBLIC INFORMATION BACKGROUNDER INUVIK — TUKTOYAKTUK ROAD PROPOSAL

Introduction

The Department of Transportation (DOT) GNWT is currently preparing a highway strategy that includes the study of the development of an all-weather road between Inuvik and Tuktoyaktuk. This proposed road could lower transportation costs for community resupply, increase mobility for residents, advance the potential for development of local renewable and non-renewable resources, increase tourism potential, increase business opportunities, provide access to gravel sources near Tuktoyaktuk, and provide training and employment opportunities during construction. Figure 1 shows the existing ice road from Inuvik to Tuktoyaktuk and the general location of the proposed all-weather road.

In support of this strategy, the GNWT is providing funding to carry out further planning and analysis including:

- pre-engineering and route analysis;
- environmental scoping, baseline information collection, and regulatory process review;
- socio-economic impact and benefit-cost analysis; and
- identification and analysis of project financing alternatives.

The information obtained from these various studies will be used by the GNWT Department of Transportation to develop recommendations and decisions on the next steps to be taken.

The proposed Inuvik-Tuktoyaktuk road is one of four projects that are presently being looked at. The others are the proposed extension of the Mackenzie Valley Highway, the Slave Geological Province Transportation Corridor and the acceleration of the reconstruction of Highway 3 from Rae to Yellowknife.

Starting soon and over the next few months, consultants working for the GNWT (DOT) will be contacting representatives of the five Mackenzie Delta communities (Aklavik, Inuvik, Fort McPherson, Tsiigehtchic, Tuktoyaktuk), Hunters and Trappers Associations, Renewable Resources Councils, Aboriginal organizations, government agencies and other stakeholders to arrange consultations for each Delta community early in the new year.

The community consultation sessions will be an important opportunity for the people of the Delta communities to learn more about the status of the Inuvik-Tuktoyaktuk road proposal and to help with the identification or scoping of environmental, social, cultural and other issues related to this proposed development.

Results of the community consultations will be used, along with other information obtained from earlier scientific studies, to prepare a report to the GNWT which outlines all of the most important issues raised by the communities and others that will need to be dealt with in a future environmental approvals process for the proposed Inuvik-Tuktoyaktuk road.

Inuvik-Tuktoyaktuk Road Proposal

At this time the community of Tuktoyaktuk can only be reached by road during the winter months on the ice road constructed along the Mackenzie River and Kugmallit Bay (Figure 1).

The present route for the proposed road is also shown in Figure 1. This route was first studied in 1975-1976 by Public Works Canada and is referred to as the 1977 PWC Route. It is approximately 140 kilometres long and is located entirely within the continuous permafrost zone. Although several other routes have been studied over the years it remains the shortest, most economical option and has received the most support from the Inuvik-Tuktoyaktuk Highway Committee. To further optimize the route, an alternate point of departure from Inuvik, at the end of Navy Road, is also currently under consideration (Figure 1).



PUBLIC INFORMATION BACKGROUNDER INUVIK — TUKTOYAKTUK ROAD PROPOSAL

This route would shorten the total length of the proposed road by about 5 kilometres.

Two standards of proposed road service are currently under consideration and both are referred to as all-weather road options. The first option is based on a design speed of 80 km/hr while the second option would be designed for a speed of 60 km/hr.

Both design options would have a roadtop width of 8.4 metres built on a minimum of 1.5 metres of embankment fill with 3:1 sideslopes. The 80 km/hr design option would have a lower minimum gradient (8%) compared with 8-10% for the 60 km/hr option. The lower maximum gradient for the 80 km/hr option would result in an increased stopping site distance (140 m), compared with 85 m for the 60 km/hr option. The 80 km/hr option would also require more general fill and crushed granular base material than the 60 km/hr option.

The timeframe for development of the proposed road will be dependent on a number of factors including project financing, engineering, environmental and other considerations. Development of the proposed road is expected to provide considerable training and employment opportunities during the construction phase and provide an economic stimulus to the region.

Environmental, Socio-economic and Cultural Issues

The proposed Inuvik -Tuktoyaktuk road has been discussed since the early 1970s and various economic, engineering and environmental studies have been completed over the years.

Construction and use of the proposed road offers a number of positive opportunities but may also pose some problems which will need to be carefully managed. The main purpose of the community meetings is to share information on the road proposal and to obtain input from community members on the various social, cultural and environmental issues that would need to be considered during the potential planning and approvals process should the road be developed.

However, to stimulate discussion, the following are some of the potential environmental and socio economic benefits and concerns that have been raised in previous discussions, including the recently completed Inuvik to Tuktoyaktuk Road Stakeholders Workshop organized by the GNWT Department of Transportation.

Potential Benefits of the Proposed Road Include:

- increased mobility for residents of the region;
- training and employment opportunities;
- lower transportation costs for community resupply;

- increased tourism and business opportunities; and
- year-round road access to the Arctic sea coast.

Potential Concerns that Must Be Managed Include:

- increased harvesting of wildlife and fisheries resources especially around Husky Lakes;
- effects on air, water quality and wildlife;
- stream sedimentation, blockage;
- increase in transient population going to the “end of the road”;
- freer movement of alcohol and other undesirable substances; and
- vehicle accidents, fuel spills and other chemical spills.

These and other issues will be reviewed and discussed at the community meetings.

***Your participation and
opinions are important and
are welcomed!***

c d

For more information on the environmental scoping project please contact:



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APPENDIX 7-1: THE COMMUNITY TRANSLATORS/FACILITATORS

Agnes White (née Gruben)

Agnes was born on Nalluk, the caribou calving grounds near Husky Lakes. She grew up on Banks Island where her father hunted white fox and caribou. She attended the Roman Catholic Mission School in Aklavik. She settled with her family in Tuktoyaktuk in 1969.

Agnes worked as an interpreter during the COPE process and for Canmar during the oil boom. She also worked for several years as a native language broadcaster on CBC radio. She currently resides in Anchorage Alaska and works regularly in the Canada. Her recent work has included conducting an oral history program for Parks Canada, gathering information for parks developments in the Yukon and on Banks Island. Agnes speaks English as well as several First Nations languages and dialects.

Bertha Francis

Bertha has lived her whole life in Fort McPherson except for the years she attended the Roman Catholic Mission school in Aklavik. Until the late 1980s she lived a traditional life on the land. She came directly from the land to work as a translator for land claims negotiations.

Bertha has worked as a native language broadcaster for CBC radio and she has spent five years as the community health representative. She performs work at the language centre making classroom material for school children on projects including a Gwich'in version of *The Three Little Pigs*. Bertha speaks English and Gwich'in.