TELECOMMUNICATIONS IN NORTHWESTERN BRITISH COLUMBIA

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F I G U R E S

A. INTRODUCTION

The North West corner of British Columbia is the last large area of the province which lies outside of the continuous telecommunications facilities. The area communities are presently poorly served with respect to public common carrier facilities and private systems are used extensively by the larger public service agencies. Recently both CNT and B.C. Tel have applied for licenses to extend radio relay systems into the area.

In order to properly evaluate these applications a clear understanding of the present communities and their telecommunications facilities is necessary. Estimates must also be made of future requirements. What follows then is a survey of the area, its communities, its public and private telecommunications facilities. The two applications for radio relay systems are evaluated in regards to the needs of the area and a number of recommendations are made.

B. THE AREA

The area of interest is the Terrace-Watson Lake highway corridor shown in Figure I, this includes the area bounded on the south by the 56th parallel through Stewart, on the east, by the 128° W longitude, on the north and west by the Yukon and Alaska boundaries (exclusive of the Atlin area).

The topographical features of the area form similar boundaries that separate the area from the surrounding region. Straddling the

Figure I. The Area and its Communities

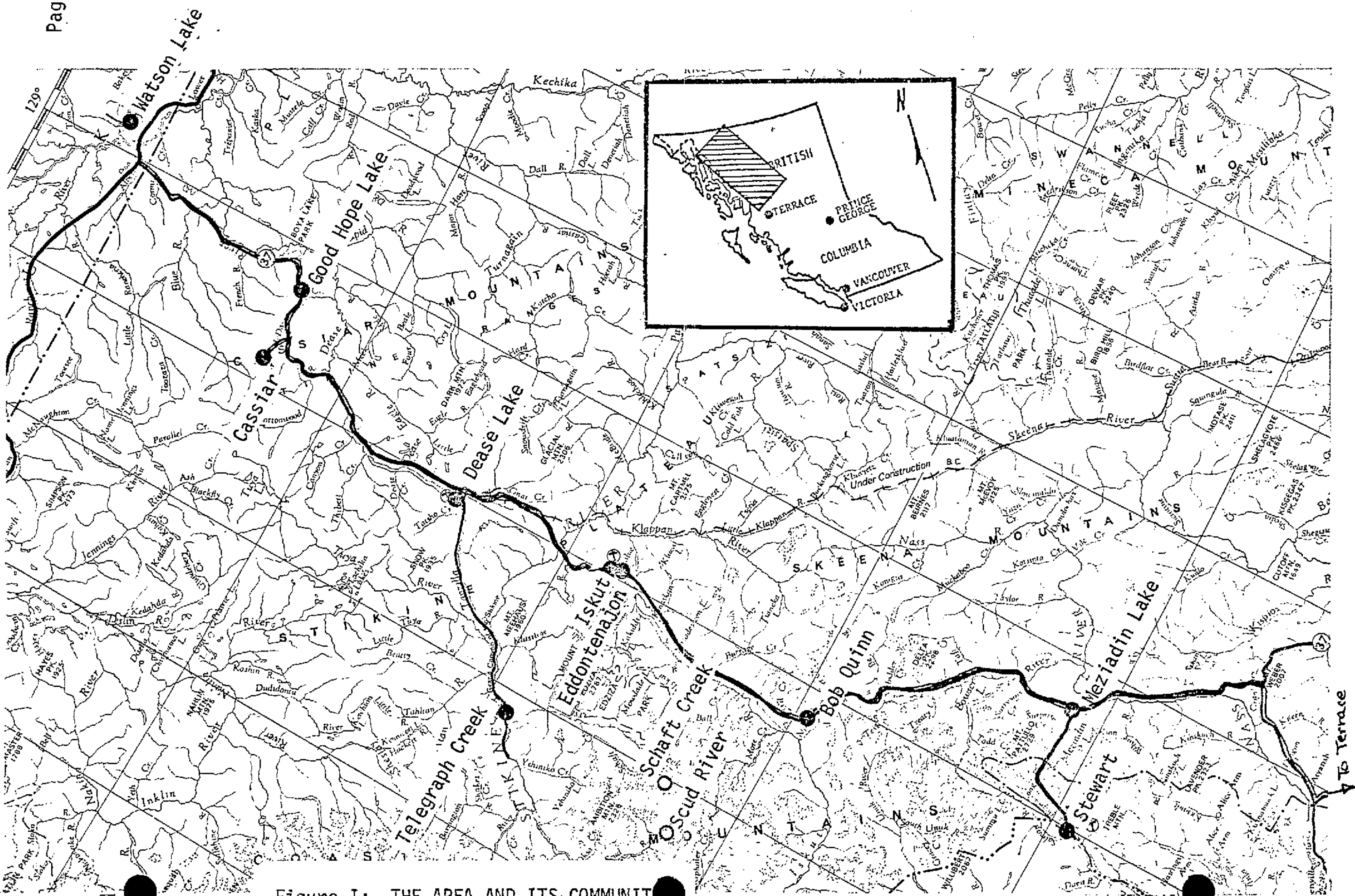


Figure I: THE AREA AND ITS COMMUNIT

Alaska - B.C. boundary on the west are the Coast Mountains forming a continuous range of 7,000 - 10,000 feet peaks. The Taku, Iskut and Stikine rivers cut across this range forming deep valleys that give access to the interior. The Bell-Irving River Valley divides the Coast Mountains from the Skeena Mountains to the east. North of the Skeena Mountains and divided from them by the Upper Stikine River are the Cassiar Mountains. In the middle and at the centre of the area is Stikine Plateau with an elevation of 4,000 feet.

Rainfall is heavy in the Coast Mountains while the plateau is dry. Although vegetation is heavy in the lower valleys, in the interior plateau the cover is sparce due to the dryness and the altitude. Logging quality timber is therefore confined to the lower Stikine, Taku, Iskut and Bell-Irving Rivers.

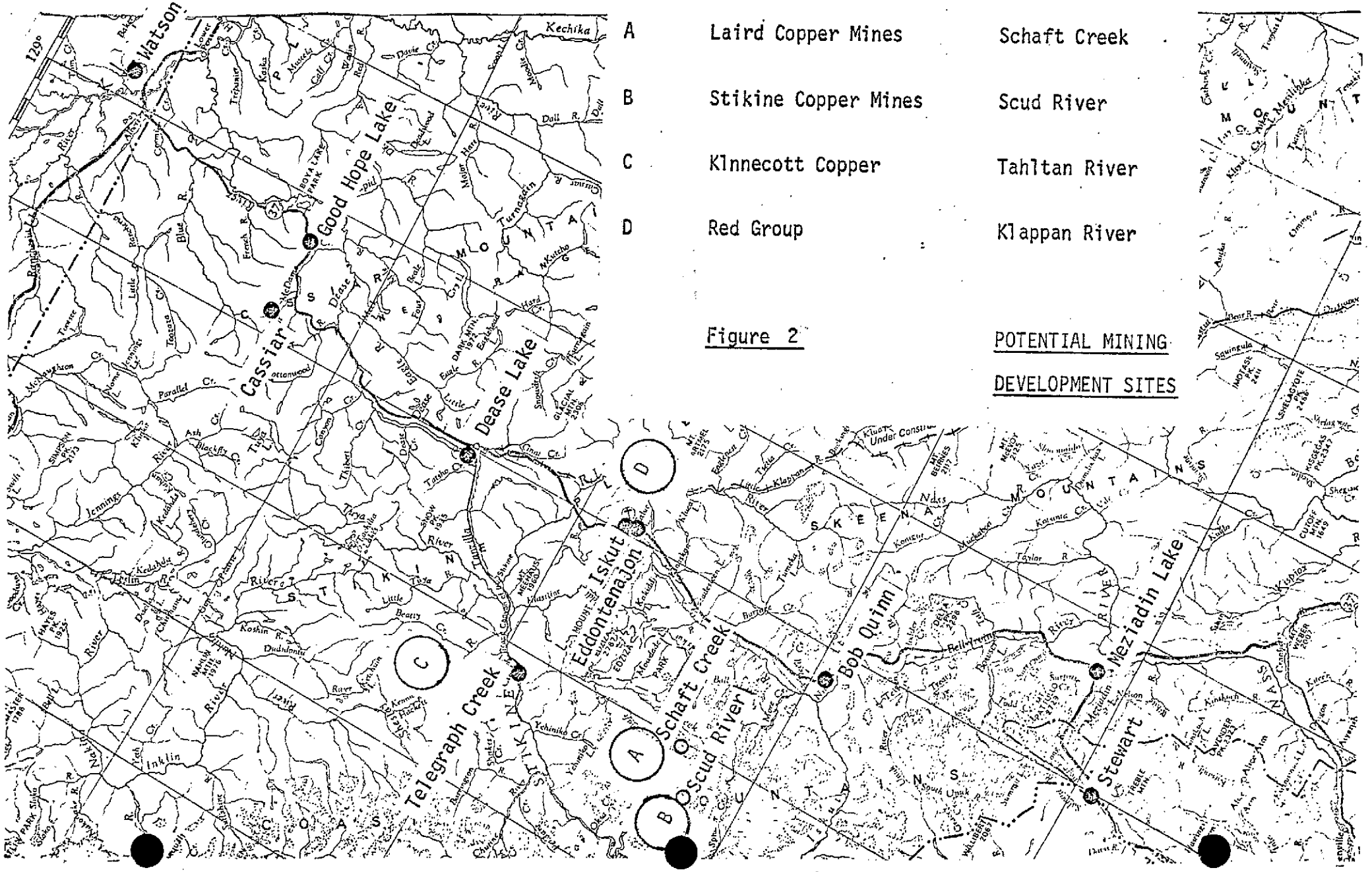
The main transportation artery through the area is the Terrace - Watson Lake highway which runs north and south following the Bell-Irving, upper Iskut and Dease River valleys. Only recently completed and although area residents often complain of its poor condition, it is classed as an all weather road which cuts 300 miles from the original Vancouver - Whitehorse road distance via the Alaska highway. Of greater impact to the area is the B.C. Railway line under construction between Fort St. James and Dease Lake. When completed this will give the area a rail link with the south and greatly reduce transportation costs, a primary consideration in the development of the mining potential of the area.

The economy of the area is centred on mining, logging and transportation. The native communities have subsistence economies engaging in the traditional pursuits of hunting and fishing. Big game guiding also provides employment.

There is presently only one operating mine in the area at Cassiar. This single industry supports a town of 1,500. The mining potential of the area is however only beginning to be realized. Some 30 sites are presently at the stage of exploration and feasibility study. Once transportation facilities are in place additional finds may well occur as more intensive prospecting takes place. The most promising finds exist near Telegraph Creek, Scud River, Schaft Creek and just south of Dease Lake as shown in Figure 2. Although exploitation of these resources appears inevitable it will take eight to ten years to bring a mine into production. The precise timing and intensity of mining ventures are dependent on the volatile world market. The area has the potential for three or four mining operations of a scale similar to the Cassiar mine.

The present logging activity in the area is confined to the lower Bell-Irving River just north of Meziadin Lake. The remaining logging quality timber stands in the other lower river valleys are well away from existing transportation facilities and so will not be exploited until extended facilities are in place.

Transportation is becoming a significant segment of the economy. The recently established highway maintenance camps and



A	Laird Copper Mines	Schaft Creek
B	Stikine Copper Mines	Scud River
C	Klnnecott Copper	Tahltan River
D	Red Group	Klappan River

Figure 2

POTENTIAL MINING DEVELOPMENT SITES

the railway under construction will see this sector grow in advance of other area industries.

C. THE COMMUNITIES

The area is presently sparsely populated with the people concentrated in the settlements shown in Figure 1. Table 1 lists these settlements and their populations, historical, current and projected.

Table 1

COMMUNITY	POPULATION			
	1966	1971	1975	1986
Cassiar	941	1,073	1,500 E	2,500 P
Iskut-Eddontenajon	200 E	200 E	350 E	500 P
Telegraph Creek	100	200 E	380 E	1,500 P
Meziadin Lake	-	-	40 E	500 P
Bob Quinn Lake	-	-	20 E	200 P
Good Hope Lake	105	-	80 E	200 P
Dease Lake	30	60	200 E	1,500 P
Scud River) possible future communities				1,500 P
Schaft Creek) possible future communities				1,500 P

E indicates estimate, P indicates projected

1966 and 1971 figures are from the Census

The largest area community is Cassiar, a company town established by the Cassiar Asbestos Corporation in 1953 which has grown to its present population of 1,500. Situated 85 miles south of Watson Lake and 8 miles off the Stewart-Watson Lake highway, Cassiar currently has closer links with the Yukon than with the more southern communities in the area. Transportation links run north as the closest airport is near Watson Lake, the only scheduled bus service runs to Watson Lake, and supply and product shipment routes for the mine run from the skagway port through the Yukon via the Alaska Highway. Further, the closest supplements to the limited social services that this isolated community provides are in Watson Lake and Fort Nelson; telephone service is provided by CNT via land line from Watson Lake; radio service is provided by a low power rebroadcaster of the Whitehorse CBC station. The community also receives CBC television service via a satellite ground station and low power rebroadcaster.

Since Cassiar is located off the main highway and has historically been totally dependent on mining, mining services and transportation, it would appear that not much potential exists for growth of the community through diversification.

Telegraph Creek is a community of some three hundred people. Although primarily a native community with status as a minor administrative centre for the area, Telegraph Creek now finds itself well away from the new transportation corridor created by

the recently completed highway. The railway now under construction is also remote from Telegraph creek. However, recent mineral discoveries near Telegraph Creek indicate its potential as a future mining centre.

Telegraph Creek's economy is based on subsistence hunting and fishing. There is a NWH nursing station, B.C. Hydro agent, an elementary school, a store and an hotel. The RCMP detachment will be moving from Telegraph Creek to Dease Lake in the near future. The main transportation link is a 55 mile spur road connecting Telegraph Creek to the Terrace-Watson Lake highway at Dease Lake. A small airstrip and summer river navigation provide alternate transportation links. The only public telecommunications link is via HF radio. A BC Tel agent operates a public facility which connects with Vancouver. A RAVEN* radio was recently installed to provide links with other native communities. No radio or T.V. broadcast signals are received.

Dease Lake is a settlement with a present population of approximately 200 people. Situated on the Terrace-Watson Lake Highway about 90 miles south of Cassiar, and with a commercial airstrip,

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* R.A.V.E.N. is the Radio and Visual Educational Network of the coastal Indians. Its H.F. radio system now extends throughout B.C. and consists of base stations at some 100 locations. Funding sources for this system are the Federal and Provincial Governments, as well as private institutions.

Dease Lake is the potential service and supply centre for the area. Dease Lake is the northerly terminal of the British Columbia Railway extension now under construction north of Fort St. James. Dease Lake therefore will be certain to undergo rapid growth in the future.

Presently Dease Lake is the location of a highways maintenance depot with some fifteen employees and their families, an MOT weather station, a B.C. Hydro agent, as well as various transportation, service and supply establishments in support of mining exploitation. The Dease Lake native reserve is presently unoccupied. The elementary school is attended by some 50 students. The RCMP detachment now located in Telegraph Creek will shortly be moving to Dease Lake, which is more centrally located. Present public telecommunications facilities are provided by CNT. A Rurax exchange serving 10 customers will shortly be replaced by a Crossbar-SA1 exchange with a 240 line capacity. Toll services are provided through a CNT agent via HF radio to Fort Nelson or Whitehorse. No television or radio signals are received.

The communities of Iskut and Eddontenajon are located one mile apart on the Terrace-Watson Lake highway 60 miles south of Dease Lake. Iskut is a native community of 325 people. Eddontenajon is a white community of some 50 people and contains a store, a lodge, and several ranches. The economic base of the white community is ranching and highway maintenance services. The native community is

involved in traditional subsistence, hunting and fishing. Social services are provided by an NHW nursing station, an elementary school with 57 students, and a B.C. Hydro agent. Although not located close to any potential mineral exploration sites, this community will show some growth as traffic over the transportation route increases.

Public telecommunications facilities consist of a B.C. Tel HF radio link to Vancouver operated by an agent in Eddontenajon and a recently installed RAVEN HF radio that links with other native communities. No radio or T.V. broadcast signals are received.

Situated on the highway 80 miles south of Iskut is Bob Quinn Lake, a highways maintenance camp. The B.C. Highways Department recently spent $1.5 million on vehicle maintenance and personnel accomodation buildings. There are currently eleven employees and their families housed in a trailer park. At the moment, the highway maintenance camp is the sole stay of the community. It is likely, however, that the community will expand into a transportation and tourist service centre as highway traffic increases. A potential hydro-electric generation site is located 7 miles northwest of Bob Quinn Lake on the More Creek. There are now no public communication facilities in this community. However, a trunked VHF repeater system operated by the Department of Highways links the camp with its administrative centres in Terrace and Prince George.

Good Hope Lake is another community centred around a

highway maintenance camp. Located 25 miles north of Cassiar, this camp houses some 12 - 20 employees and their families. Several native families have located themselves near by. Social services are provided from either Cassiar or Watson Lake. Telephone services are provided by CNT from the landline that follows the highway from Watson Lake.

Meziadin Lake is located at the southern limit of the area on the Terrace - Watson Lake highway at the junction with the spur into Stewart and is the site of a 20 men Department of Highways maintenance camp. Logging operations are also underway in the area. Located 110 miles north of Terrace and 40 miles from Stewart this community will likely become an important highways service centre for the area. Although the B.C. Telephone microwave system passes nearby, there is no breakout into Meziadin Lake. Radio-Telephone service is provided through the Bell-Irving PSRT. B.C. Telephone plans to install a toll station into Meziadin Lake in 1977.

For each of these communities described above, some indication has been given as to their potential for growth. In order to ascertain furture requirements for service, however, it is necessary to project population levels. This has been done by comparing the economic development levels that now exist in communities similar in location, climate, and social services. Thus by examining isolated mining and highway maintenance communities in other parts of the province and the Yukon, population levels of

the communities in Northwestern B.C. were obtained. Table 1 shows the results. The larger centres would probably be instant towns where growth takes place rapidly as the mines begin production. The figures in Table 1 assume maximum production from a few specific sites; the projections would be less if production were phased over a longer period.

D. PRIVATE COMMUNICATIONS FACILITIES

Given the poor public communication facilities in some of these communities it is not surprising that industries, agencies and individuals in the area have installed their own dedicated systems to satisfy their present needs. What follows is a survey of the private systems and facilities that connect the above communities with each other and with the outside.

(i) The B.C. Department of Highways presently operates a system of VHF repeaters along the Stewart-Watson Lake highway. The system consists of some eight repeaters of which four are located north of the limits of common carrier facilities at Bell-Irving Mountain. The battery-powered repeaters are located in Amperdomes at helicopter access sites along the highway giving complete highway coverage with the exception of one 10 mile stretch 15 miles east of Cassiar. There is no standby system and the repeaters are repaired on failure. Batteries are replaced every five years.

The highways Department operates some 50 mobiles on this system; 80% of traffic is inter-mobile and 20% of traffic is back to the District Office at Prince George. Two other government agencies in the area are allowed use of the trunked system. For emergencies, the RCMP at Good Hope Lake can access the system on an emergency basis via their own radios; at Iskut, the NWH nursing station has its own portable to access the Highways system in case of emergencies. With the exception of Good Hope Lake all of the highway camps lack public communications facilities. For these camps, both administrative and personal calls are handled on the Highway's VHF system.

(ii) B.C. Hydro through the use of isolated diesel generators supplies power to the communities of Telegraph Creek, Dease Lake and Iskut-Eddontenajon. These generators are operated by agents and require regular maintenance and re-supply. Communication is required between the agents and the supply centres of Terrace and Stewart and between agents and maintenance vehicles enroute.

B.C. Hydro's present communications facilities consist of VHF base stations at Telegraph Creek, Iskut, and Dease Lake, a VHF repeater located on the Highways Department site near Dease Lake to improve mobile coverage, and an HF radio at Dease Lake. Normally the agents call each other and maintenance vehicles in the area via VHF. To call 'outside' the agent calls via VHF to Dease Lake; the Dease Lake agent then calls via HF to B.C. Tel Vancouver and

back via public toll facilities to Terrace or Stewart.

B.C. Hydro has plans to install a VHF repeater near Telegraph Creek to improve mobile coverage. There is some possibility that Highways will share this site to extend its coverage into Telegraph Creek. B.C. Hydro also plans to share three of Highways sites and extend a trunked system south to Stewart. The current status of this is a verbal agreement between Hydro and Highways with the summer of 1976 as the planned implementation date.

(iii) The RCMP presently operate HF base stations and mobiles in Telegraph Creek, Cassiar and Stewart. One mobile works out of each base. Base to base communications are good but mobile to base at each location is poor. Use is made of a forestry repeater near Dease Lake to make patch calls when the detachment office is unmanned.

The RCMP plan to install a VHF base and mobile installation in Cassiar to improve mobile coverage of the area; further the RCMP plan to relocate the Telegraph Creek Detachment to Dease Lake.

(iv) MOT presently operates a weather station at Dease Lake. An SSB HF radio is used for weather reporting every three hours to Prince George. Pilots are not now required to file flight plans

with Dease Lake. Fliers either file a round trip flight plan from their point of departure or contact Fort Nelson or Watson Lake after take-off.

While MOT has no immediate plans to improve telecommunication facilities, the MOT is considering installing a LF radio-teletype circuit to Prince George or an automated weather station tied to Prince George via the proposed B.C. Rail microwave system.

(v) The B.C. Emergency Health Services Commission is in the process of establishing a province wide network of land mobiles for its ambulance service. There are however no plans at present to extend the system north of Terrace. The agency indicated that once the province wide system has been completed in 2 or 3 years time, those areas not now included will be studied. For remote locations, the agency favours the leasing of circuits from the common carriers whenever possible. It should be noted that the B.C. Highways Department presently operates an ambulance on behalf of the Commission along the Terrace-Watson Lake Highway; this ambulance is of course tied into the Highways VHF radio trunk system.

(vi) The B.C. Forest Service presently has a VHF trunk extending from Lower Post to Dease Lake. One of the mountain top repeater sites is shared with Highways. Procurement is

underway for three sites between Lower Post and Dease Lake to improve coverage. Future plans exist for three or four more sites to link the northern VHF trunk from Lower Post via Dease Lake to the Forest Service Prince Rupert - Hazelton system. When the system is completed there will be approximately 40 mobile and 50 portables operating on the Forest Service System in the Hazelton - Lower Post corridor.

(vii) The National Health and Welfare Department currently maintain two nursing stations in the area. The Telegraph Creek station has its own HF base station used to call B.C. Tel Vancouver. The Iskut Lake station has a NHW owned portable that can access the Highways Department VHF repeater on an emergency basis when the B.C. Tel HF radio in Eddontenajon is non-operative. NHW has no plans to change the present system.

(viii) The Department of Indian Affairs and Northern Development presently administers two bands in the area at Telegraph Creek and Iskut. The Department has no facilities of its own. In Telegraph Creek calls are made via the B.C. Tel HF radio at the Tartan Motel one mile from the native village. In Iskut calls are made over the B.C. Tel agent operated base station in Eddontenajon or over the RCMP HF radio. Traffic consists of administrative and personal messages. DIAND has no present plans to improve facilities.

(ix) RAVEN radios have recently been installed at both Iskut and Telegraph Creek. These HF facilities located in the native villages provide links with other native settlements in the province.

(x) The Fisheries Branch of Environment Canada operates summer field camps in the area for fisheries research. The camps are occupied during the summer only and the locations usually differ in subsequent years. DOE owned HF radios in each camp are used to call the DOE base station in Vancouver.

It is possible to sum the above agencies into groups of similar needs. DIAND, NWH, MOT, and the service industries have a requirement for point-to-point communications to/from the communities of the area. The needs of these organizations are normally satisfied through the common carriers.

The requirements of DOE - Fisheries and of the prospecting and exploration agencies are best satisfied by private HF systems. These agencies operate away from the communities and the transportation corridors and more importantly are not fixed

geographically usually remaining for no longer than a season in one location. thus even if a common carrier infrastructure was in place between the communities, these agencies would still have to rely largely on private HF systems.

B.C. Highways, B.C. Forest Service and B.C. Hydro all requirements for base and mobile coverage along the main transportation corridors and for connections for calling to outside administrative centres. Each of these agencies has installed or plans to install a private trunked VHF system through the area. Each agency presently operates trunked VHF networks in other parts of the province for mobile highway coverage. Site sharing is common between B.C. Hydro and B.C. Highways. While the agencies appear to favour site sharing, the use of province wide mobile frequencies would seem to mitigate against shared frequencies or shared trunks.

The existence of good private trunked systems does not eliminate the use of common carriers by the agencies. Since the trunks are single channel and not protected, diversification of the extended systems through common carrier facilities would seem a welcome feature. The necessity of isolated personnel camps along the highway route add a requirement for personal communication by employees as well as increased administrative traffic to the outside centres. The Department of Highways, for example, approached CNT for quotes for connecting some of its highway camps south of Dease Lake with Dease Lake via rural radio.

Further, it is clear that the construction of more and more private systems is detrimental for two important reasons:

(a) private systems only serve the particular needs of the organizations which operate them. Private systems do little, if anything, to improve the circumstances of the public at large. In fact private systems often make the public more cognizant of their isolation. The public knows that fairly reliable communication facilities exist to which they are denied access.

(b) the telecommunication industry exhibits significant economies of scale. A number of small (private) systems is thus more expensive to install and operate than one large (common carrier) system. Further, a large system provides a more reliable and higher quality service than small systems deliver.

The current state of affairs thus suggests that effort should be made to expedite the extension of common carrier facilities into the area so that the public will have access and so that further proliferation of private facilities does not continue.

E. COMMON CARRIER FACILITIES

The present common carrier service to the area communities are summarized in Table 2. As can be seen, nearly

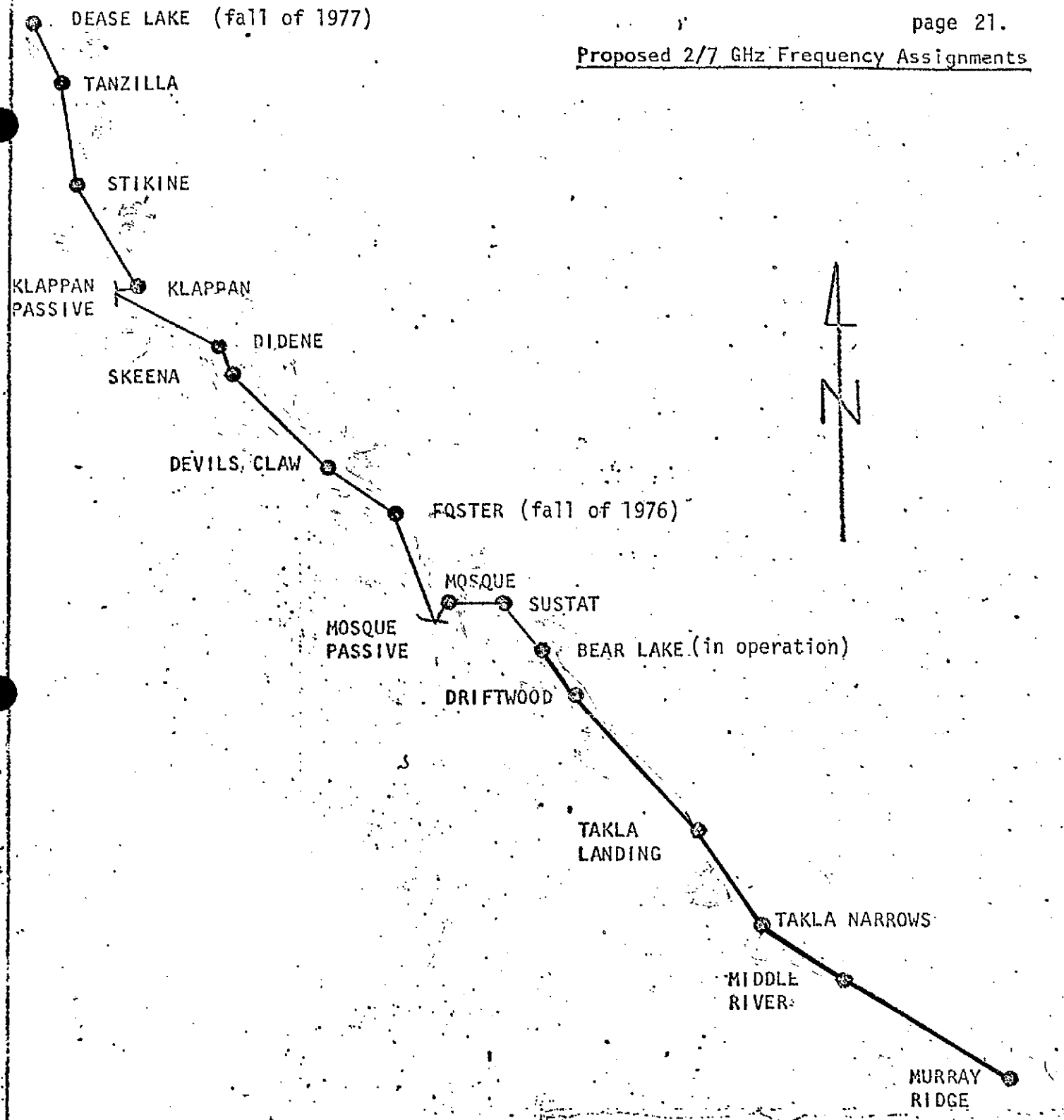
Table 2.

Community (1975 Pop.)	Local Exchange	Toll Facilities	Common Carrier	Radio	T.V.
Cassiar (1500 E)	160 lines	6 circuits	CNT	CBC LPRT	ANIK
Good Hope Lake (80 E)	Yes	yes	CNT	No	No
Dease Lake (200 E)	12	HF	CNT	No	No
Telegraph Creek (380 E)	No	HF	BC Tel	No	No
Iskut and Eddontenajon (350 E)	No	HF	BC Tel	No	No
Bob Quin (20 E)	No	No	None	No	No
Meziadin Lake (40 E)	No	PSRT	BC Tel	No	No

Note: All population levels are estimates; further, the Dease Lake exchange will be replaced by a higher capacity machine in 1976.

1,000 people residing in this area lack basic telephone service. To help improve this low level of service, both CNT and B.C. Tel have requested DOC permission to construct new micro-wave facilities. Further, the DOC approved a BCRR application some 3 years ago to construct a radio relay system along the railroad extension into Dease Lake. The three systems are discussed below:

Proposed 2/7 GHz Frequency Assignments



L E G E N D

: ACTIVE REPEATER

: PASSIVE REPEATER

( ): in service date

SCALE: APPROX. 1:2,500,000

SYSTEM MAP

MURRAY RIDGE - DEASE LAKE

FIGURE 3 BC RAIL RADIO RELAY

(I) B.C. Railroad This system is shown in figure 3, and is now operational as far north as Bear Lake. BCRR intends to construct three more sites in 1976 and the remaining 7 sites in 1977. The complete system is scheduled to be operational by January 1st, 1978. It should be noted that this system extends North-West from Prince George and is separated by the Skeena Mountains from the Stewart-Watson Lake Highway (see also figures 1 and 6).

The B.C. Rail microwave system is a light route (2/7 GHz), 300 channel radio system which is estimated to cost $4.-- million. Although mainly intended for railroad dispatch and control, the system clearly could be used to trunk Dease Lake telecommunication traffic into the switched network via Fort St. James or Prince George.

It should be pointed out that the B.C. Railroad extension to Dease Lake has in the past been delayed through a great number of factors; internal labor trouble within the Company; native land claims culminating in blockage of railroad right-of-way; financial problems of the Company; and political controversy.*

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* The pre - 1972 Social Credit government negotiated a cost sharing agreement for the railroad extension with the Federal Government. This agreement was re-negotiated by the 1972-1975 NDP government. Just prior to finalising this latter agreement the NDP government was defeated. The new Social Credit administration has indicated its intention to again re-negotiate the costs of this project.

These problems persist today. It is therefore doubtful that the BCRR system into Dease Lake will be completed on schedule by January 1st, 1978.

(II) Canadian National Telecommunications has requested permission to upgrade its facilities into Cassiar through the construction of a 1 hop microwave system between Watson Lake and Dennis (see figure 4). This facility will replace 60 miles of landline at an estimated cost of $350,000. This system is scheduled to be operational in 1977. It should be noted that CNT withdrew an earlier application to further extend the radio system from Dennis via one repeater (Chicken Neck) to Dease Lake. CNT has indicated that this withdrawal was based on the uncertainty in regards to the B.C. Railroad extension into Dease Lake and thus uncertainty in regards to the future population size of Dease Lake. However, CNT does plan to construct a public access VHF repeater at Chicken Neck (half way between Cassiar and Dease Lake) in order to provide complete VHF highway coverage from Watson Lake to Dease Lake.

(III) B.C. Telephone has proposed to extend its 300 channel 2 GHz radio relay system north from the existing Bell-Irving site to Zechoo Mountain with 120 channel spurs to Eddontenajon, Dease Lake, and Telegraph Creek. The capital cost of this

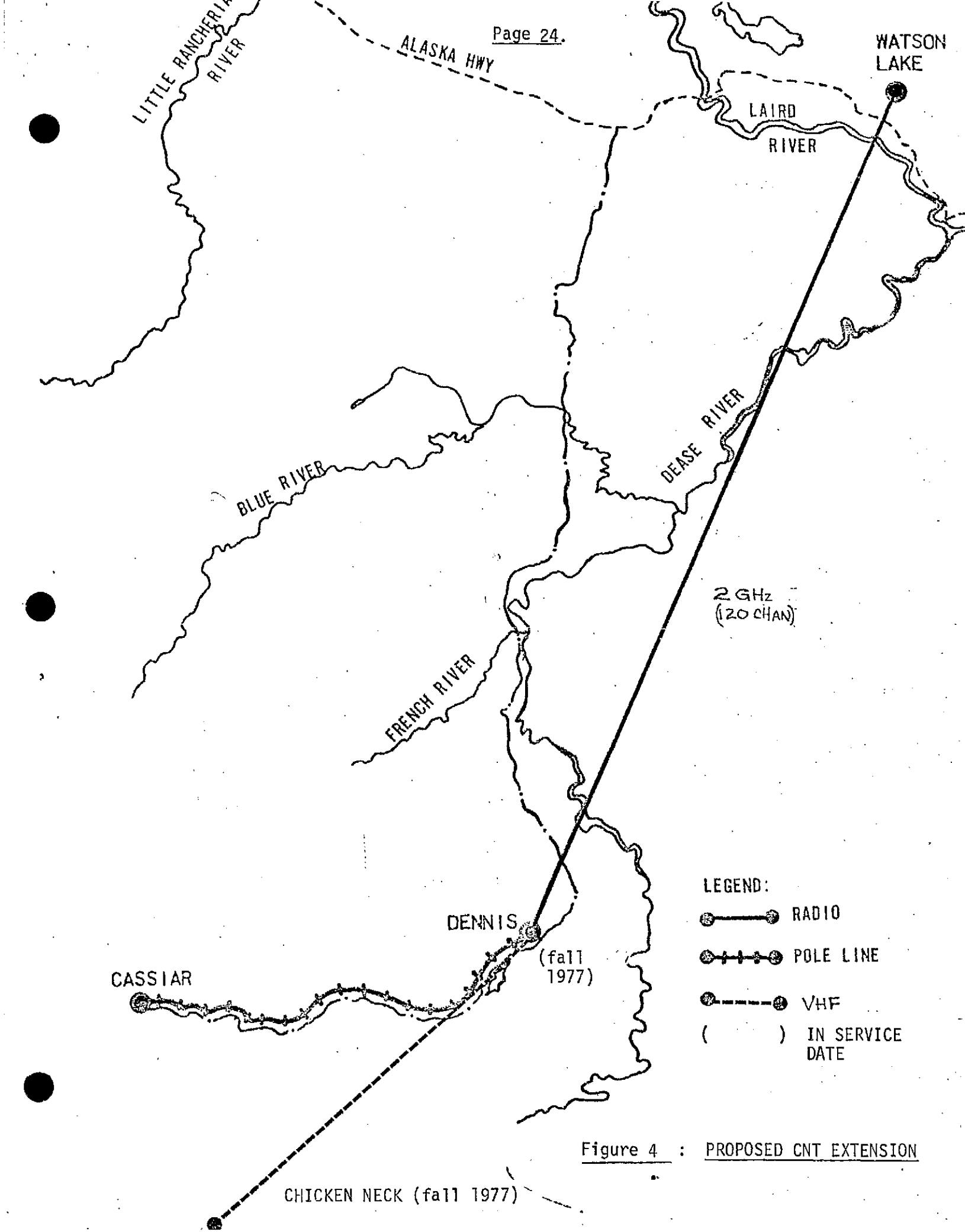


Figure 4 : PROPOSED CNT EXTENSION

project is estimated to be $2.1 million (see figure 5).

The B.C. Telephone application would extend both local exchange and toll faiclities to all of the presently unserved area communities and provide mobile radio telephone highway coverage. These communities will also interconnect with each other. However the implementation program necessary for the system as proposed is poor in that the most pressing requirements are satisfied last. The plan as it exists calls for the extension of service to Bob Quinn in 1977, to Eddontenajon - Iskut in 1978, to Telegraph Creek in 1979 and to Dease Lake in 1980. Radio-telephone highway coverage in the southern part of the area is provided first. The most urgent requirements are for the extension of service to Telegraph Creek and Eddontenajon which presently lack service and to Dease Lake which presently lacks good toll facilities. The present very lightly used PSRT at Bell-Irving would indicate that the need for radio-telephone highway coverage is not a pressing one.

All three proposed systems are shown in figure 6, page 27.

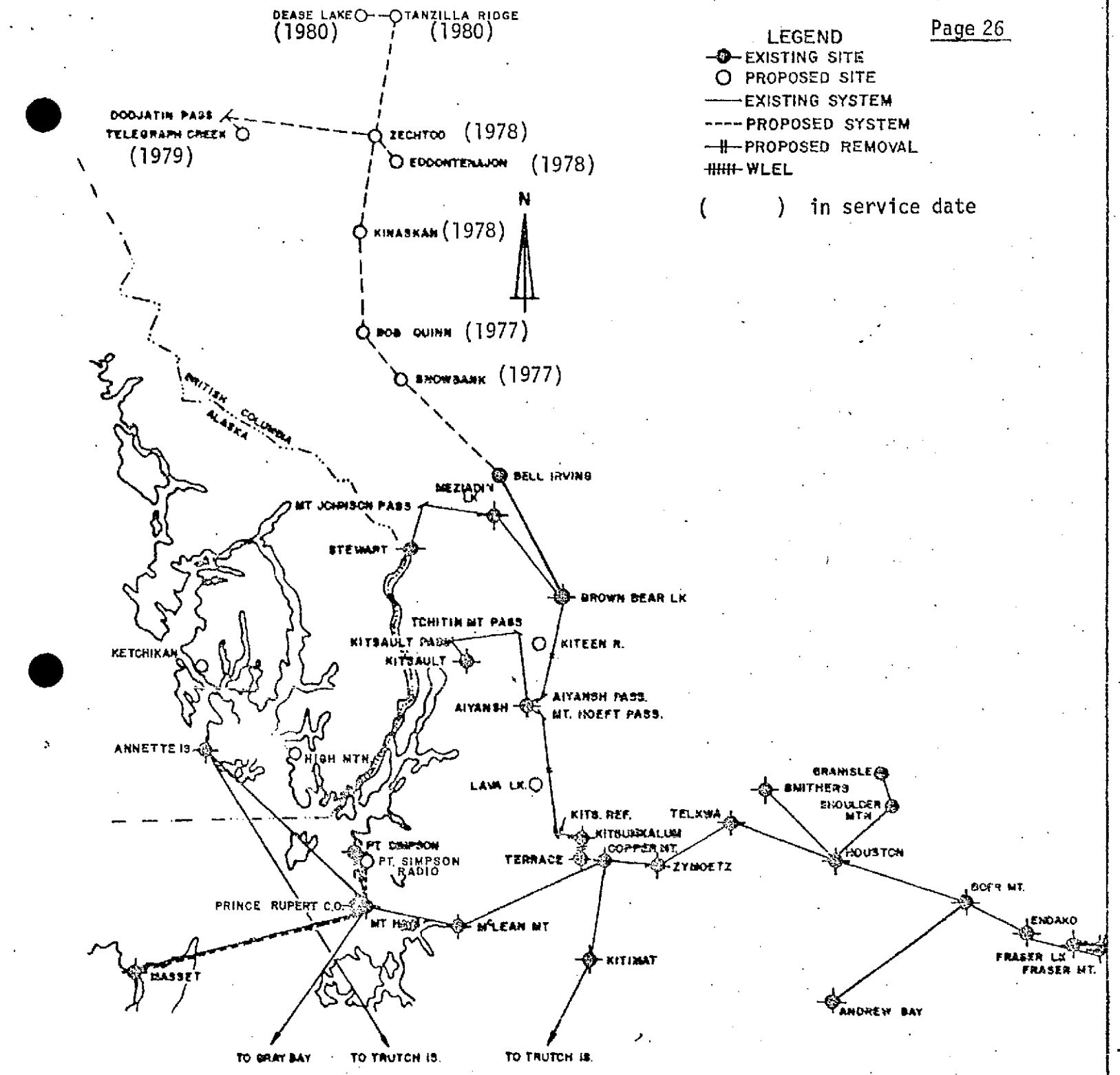


Figure 5 PROPOSED BC TEL EXTENSION

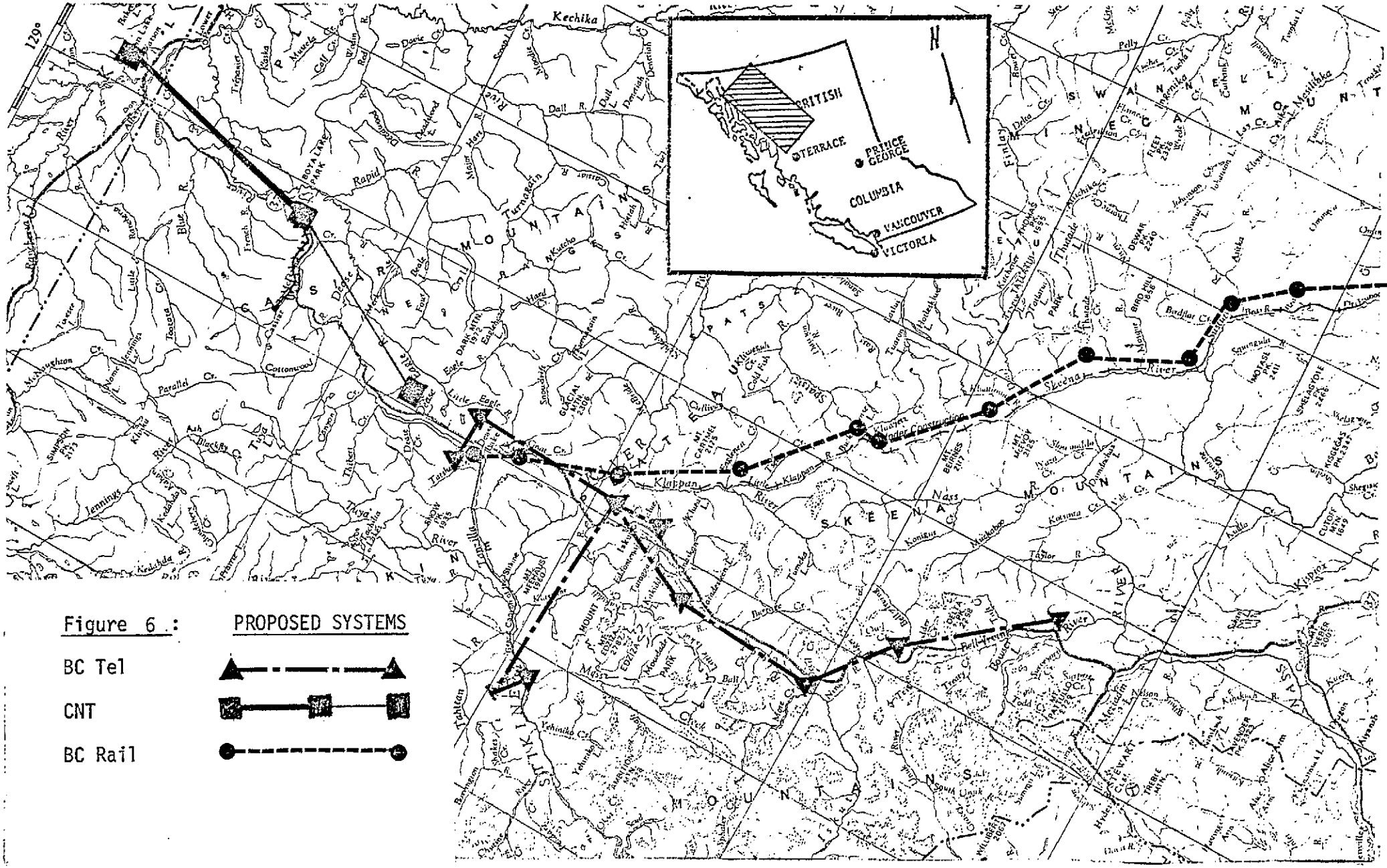


Figure 6 : PROPOSED SYSTEMS

BC Tel

CNT

BC Rail

F. DISCUSSION

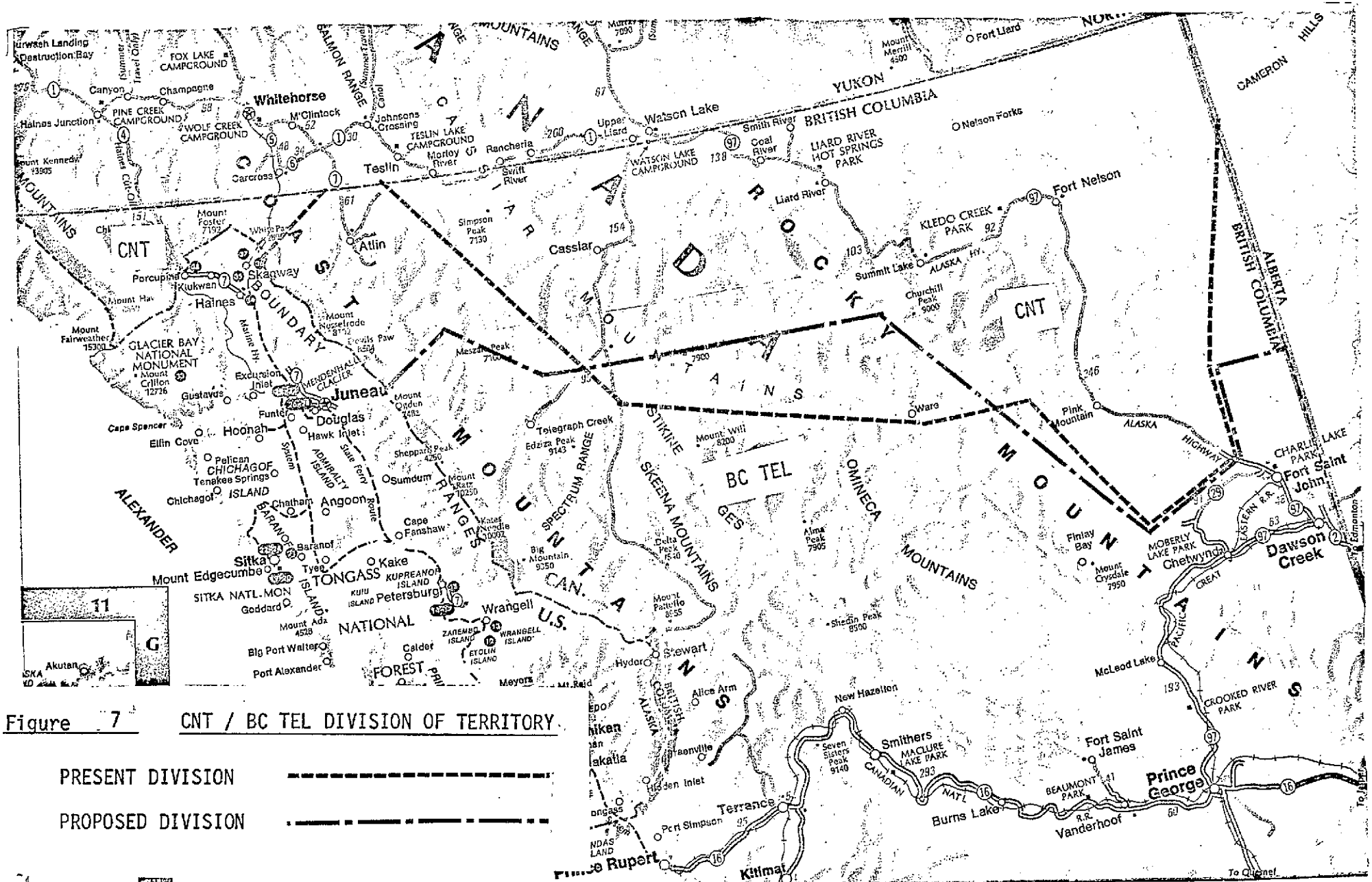
It is clear from the above that the area is poorly served from a telecommunication point of view. It is further apparent that this lack of service is, among other things, the result of a lack of coordination and planning. This lack of coordination and planning is apparent from the following anomalies:

(I) Operating Territory

CNT considers the area above the dotted line in figure 7 to be its operating territory. B.C. Tel does not recognize this dividing line but states that its charter allows it to operate anywhere in B.C. Raiding into each other's area takes place and creates problems. The Atlin exchange, although removed from the B.C. Telephone system, is operated by the B.C. Telephone Company but connects into the CNT system at Whitehorse. Because of its remoteness from the larger B.C. Tel system, the plant is more expensive to operate than it could be if CNT had responsibility for it.

(II) Provision of Service

Common carriers provide service when it becomes economically attractive. Thus Dease Lake, for example, will either be the terminal of two microwave systems, or none. CNT intends to extend service if the railroad is built; however, if the


CNT
BC TEL
PRESENT DIVISION
PROPOSED DIVISION
Whitehorse
Watson Lake
Teslin
Atlin
Skagway
Haines
Juneau
Sitka
Ketchikan
Petersburg
Wrangell
Fort Nelson
Fort Saint John
Dawson Creek
Prince George
Prince Rupert
Kitimat
Terrace
Burns Lake
Vanderhoof
Fort Saint James
Smithers
Stewart
Hyder
Chetwynd
Tumbler Ridge
Dease Lake
Cassiar
Telegraph Creek
Ware
Summit Lake
Fort Liard
Nelson Forks
Liard River
Coal River
Smith River
Swift River
Rancheria
Morley River
Carcross
Champagne
Canyon
Destruction Bay
Burwash Landing
Haines Junction
Klukwan
Porcupine
Gustavus
Hoonah
Angoon
Kake
Tenakee Springs
Pelican
Sumdum
Douglas
Hawk Inlet
Funter
Excursion Inlet
Elfin Cove
Cape Spencer
Chichagof Island
Baranof Island
Admiralty Island
Kuiu Island
Kupreanof Island
Zarembo Island
Etolin Island
Wrangell Island
Mount Edgecumbe
Sitka National Hist. Mon.
Big Port Walter
Port Alexander
Akutan
Calder
Meyers
Mt. Reid
Alice Arm
Hazelton
New Hazelton
Seven Sisters Peak 9140
Finlay Bay
McLeod Lake
Crooked River Park
Mount Edziza Peak 9143
Mount Wilf 8200
Mount Crysdale 7950
Alma Peak 7905
Delta Peak 7540
Sheppards Peak 4250
Mount Ratz 7070
Big Mountain 9350
Sheslay Peak 9500
Mount Patterle 8655
Mount Fairweather 15300
Mount Crillon 12726
Mount Nesselrode 8712
Mount Orden 7482
Mount Foster 7192
Simpson Peak 7130
Meszah Peak 7100
Churchill Peak 9000
Pink Mountain
Mount Merrill 4500
Mount Kennedy 13905
Mount Hay
Seals Paw Island
Glacier Bay National Monument
Tatshenshini-Alsek Provincial Park
Kledo Creek Park
Liard Hot Springs Park
Watson Lake Campground
Teslin Lake Campground
Wolf Creek Campground
Pine Creek Campground
Fox Lake Campground
Charlie Lake Park
Moberly Lake Park
Maclure Lake Park
Beaumont Park
Pacific Great Eastern R.R.
Canadian Nat'l R.R.
Alaska Highway
Alaska Hy.
Marine Hy.
Stikine Mountains
Skeena Mountains
Omineca Mountains
Cassiar Mountains
Spectrum Range
Coast Mountains
Boundary Ranges
Canadian Rockies
Cameron Hills
Alexander Archipelago
Alaska
British Columbia
Yukon
Alberta
To Edmonton
To Chetwynd
To Channel
Figure 7
CNT / BC TEL DIVISION OF TERRITORY

railroad is built, there is little need for a CNT system since the BCRR radio system can handle all the traffic.

(III) Private Systems

As long as the common carriers do not construct facilities, further growth in private communication systems will occur. However, the further growth of private system makes it less economical for common carrier systems to be constructed.

(IV) Common Carrier Plans

If/when all the present plans of the three carriers have been implemented, some $7.-- million would have been spent on inter-community facilities alone, yet these facilities (all light-route) would still not be capable of extending T.V. service to the area. Coordination between CNT and CBC, for example, could result in the replacement of the satellite ground station at Cassiar by a 2-3 hop extension of the Watson Lake signal via terrestrial facilities. Significant cost saving in the delivery of TV services to Cassiar could result and simultaneously reliable facilities constructed to provide Cassiar with better point-to-point tele-communication services. Again, coordination between B.C. Tel and CNT might well establish a heavy route microwave system between Terrace and Watson Lake supplying diversity, and added capacity to the North.

(G) Conclusions and Recommendations

In view of the foregoing, it is clear that the area is ill-served from a telecommunication point-of-view and that this poor service is the result of, among other things, a lack of coordination between users and suppliers of telecommunication services. It is further apparent that the BCRR system, licensed some 3 years ago, will not substantially improve this lack of service and neither supply any service in the near future. Moreover, the improvement plans of the common carriers either lack scope (CNT) or are poorly phased in terms of time (B.C. Telephone). To remedy this situation, it is therefore recommended that the DOC:

(i) Convene meetings of senior officials of CNT and B.C. Tel in order that questions of operating territory, and a planned approach to improved services, might be dealt with.

(ii) Convene meetings between officials of CBC and CNT in order to establish a planned approach for improved radio and television delivery services to the area.

(iii) Persuade CNT to extend its radio relay system from Watson Lake via Dennis to Dease Lake on a priority basis and that this system be capable of carriage of TV signals.

(iv) Persuade B.C. Tel to modify its application for a radio relay system into Dease Lake. This modification to ensure that the system is extended from Dease Lake to the South (rather from Bob Quinn to the North) thereby extending services to the larger population centres of Telegraph Creek and Iskut/Eddontenajon at an earlier date.

(v) Convene meetings with the operators of the various private systems in order to ensure that private system growth will be kept to a minimum and private needs be furnished by the common carriers whenever possible. (An approach similar to the Yukon's YTCP project is envisaged).

(vi) Convene meetings with the Provincial Department of Transport and Communications to apprise this Department of the above and to seek support for the above approach in regards to private systems operated by Provincial Departments or Crown Corporations.

APPENDIX "H"

May 6, 1975

4002-2-C

Mr. R.J. Wells
Regional Manager
CN Telecommunications
CN Tower 10004
104th Avenue
Edmonton, Alberta.

Dear Mr. Wells:

As you know, there has for some time now been a very keen interest in furthering the economic development of Northern B.C. This interest extends to both the Federal government and the Provincial government and encompasses all of Northern B.C. from the Alberta to the Alaska borders.

In support of this anticipated economic development, the DOC has received a number of applications for further telecommunication facilities to serve this part of British Columbia.

In order to ensure that a rational telecommunications system develops in this part of Canada,tthe DOC is interested in obtaining answers to the following questions:

(i) What area of Northern B.C. does CN Telecommunications consider to be within its operating territory?

(ii) How was this operating territory established? (i.e. through formal negotiations, through ad hoc developments?)

(iii) At what Northern B.C. locations does CNT presently operate exchange, radio telephone, or private line facilities? What is the type and capacity of these facilities?

(iv) What are CNT's 5 year plans to improve or extend telecommunication services within its operating territory as defined in (i), above?

.../2

Your kind co-operation is appreciated. Please be assured that the above information will be treated confidentially within the D.O.C.

Thank you.

Sincerely,

Original Signed By
ED PIEKAAR

Ed Piekaar, Economic
and Regulatory Advisor

APPENDIX "J"

5E ?

BRITISH COLUMBIA TELEPHONE COMPANY
768 SEYMOUR STREET, VANCOUVER, CANADA V6B 3K9 TELEPHONE: 683-5511 AREA CODE 604
TWX NUMBER 610-922-6044

PLEASE ADDRESS YOUR REPLY TO THE UNDERSIGNED

File: REG BOD 1-18
Planning - Northern B.C.

July 25, 1975

Mr. E. Piekaar
Economic and Regulatory Advisor
Department of Communications
Room 320 - 325 Granville Street
Vancouver, B.C.

a copy of this letter & attachment was sent to B.C. Dept of ... Comm. 8/22/75

Dear Mr. Piekaar:

This is in reply to your letter 4002-2-C of May 6, 1975, concerning our present and planned future operations in northern British Columbia. You have indicated an interest in all of northern B.C., "from the Alberta to the Alaska borders".

In conjunction with this, I have assumed that you are concerned about the area north of the population belts bordering Highway 16 between Prince Rupert and Prince George, and Highway 97 between Prince George and Dawson Creek. This population belt, already served by B.C. Telephone facilities, will therefore not be considered in the following replies to your specific questions.

Question (i) What area of northern B.C. does B.C. Telephone consider to be within its operating territory?

The answer to this question must be divided into two parts - the theoretical and the practical. B.C. Telephone's Charter permits it to operate telephone lines "between any places or anywhere in the Province of British Columbia", and "any places or anywhere outside the Province of British Columbia". There is a restriction to this general power in that if the Company wishes to operate within the City of Prince Rupert, or in the Province of Alberta, Saskatchewan or Manitoba, it must first obtain the consent of the municipality or the appropriate Lieutenant-Governor respectively. Otherwise, there is no Charter restriction on our ability to operate anywhere.

As to the practical extent of the Company's operating territory in northern B.C., I would generally say the whole of northern B.C. where we now provide some type of communications service, as outlined below. This, of course, excludes those areas which now obtain well-established non-competitive service from other telecommunications companies, for example, the area along the Alaska Highway north of Wonowon served by CNT. We do not wish to exclude those areas which do not now have any service, or which have no present requirement for service, as we would continue to expand into new areas as quickly as practicable, and as the requirement develops.

Question (ii) How was this operating territory established?

As explained above, B.C. Telephone does not have a defined "Operating territory" because this could be the theoretical area where the Company is permitted to operate, or those areas where it actually operates today, or additional areas where the Company may wish to undertake operations at some future time.

To be more specific, however, the Company's present area of operation was established through a combination of Charter authority to operate generally, purchase and acquisition of various operating telephone companies such as Chilliwack, East Kootenay, etc., acquisition of a Government owned service area in northern B.C., permission from the Lieutenant-Governor of Alberta to establish certain working lines in that province, agreement with General Telephone of Alaska to provide service at the Village of Hyder, continuous expansion of the system into areas not previously served, and development of new towns or re-arrangements of population, etc.

Question (iii) At what northern B.C. locations does B.C. Telephone presently operate exchange, radio telephone, or private line facilities? What is the type and capacity of these facilities?

Question (iv) What are B.C. Telephone's five year plans to improve or extend telecommunications services within its operating territory as defined in Question (i)?

With the development of any new area, the available communications facilities tend to follow a traditional growth pattern. It begins with the established MF/HF service, and progresses through VHF/PSRT's and rural radios as requirements increase and facilities become available, and finally to the establishment of a local exchange with a connecting VHF/microwave radio toll system. With the establishment of the toll radio system, services such as data transmission, radio program channels and TV would become available.

In reply to questions (iii) and (iv) it is convenient to answer them together and in the order discussed above:

1. MF/HF Land Stations

Refer to the attached documents:

a. B.C. Tel drawing RL-0045
b. April 1975 Radio Channel Usage Report - for MF/HF Land Service, dated May 31, 1975
c. Graph - MF/HF Land Radiotelephone Service
d. GTE Practice - Section 390-105-900 BC, "General Description of MF/HF Radiotelephone Services"
e. B.C. Tel Radio Engineering Report dated April 1972, "Planned Development of the MF/HF (Land) Radiotelephone Service"

The most widely used B.C. Tel communications facility to remote northern B.C. is the single channel MF/HF radio, which links numerous subscribers to B.C. Tel toll and exchange facilities in Vancouver.

The attached drawing RL-0045 shows the locations of each of the subscribers to this service. The Company owns the stations at Fort Ware, Eddontenajon and Telegraph Creek, but all others are privately owned by the subscribers, and are permitted access under contract to the B.C. Tel network.

A more detailed description of the MF/HF service is contained in the attached GTE Practice 390-105-900 BC, "General Description of MF/HF Radiotelephone Services".

Two documents are attached to show the present usage of this service; the April 1975 Radio Channel Usage Report, with an accompanying graph giving the pictorial view of usage over the past three years for MF/HF Land Radiotelephone Service. Please note that the usage figures are for the whole of B.C., as it is not currently possible to separate the usage information for northern B.C. alone. However, channels VL1, VL8, VL11 and VL13 are preferred for northern use, and reference to those channels will give a reasonable indication.

Immediate future plans call for the addition of channel VL15 in 1977 to alleviate the load on channel VL7, and the addition of channel VL16 in 1979 to alleviate the projected load on channel VL5. More detailed and long range plans can be seen in the attached engineering report "Planned Development of the MF/HF (Land) Radiotelephone Service".

B.C. Tel also provides basic design information to customers to assist them in equipping their radios with the best MF/HF channels for their location, and with channel use information throughout the day and year. A sample of this information is contained in Appendix 2 to the above mentioned report.

2. VHF Land Mobiles (Refer to Drawing RF-005 attached)

B.C. Tel currently operates eleven Public Service Radiotelephone Terminals (PSRT) north of highways 16 and 97. These are located at Bell Irving, Brown Bear Lake, Aiyansh, Mt. Dixon, Murray Ridge, Morfee (2), Hudson Hope (Bullhead Mtn.), Fort St. John (2) and North Pine. As each terminal is connected through the telephone operator to the switched network, telephone service is provided to vehicles and to a variety of industrial and private users within the coverage areas. These eleven terminals handled over 5,800 completed calls during May 1975.

Ten additional PSRT terminals are planned for this area in the next five years. These terminals to be located at Durham Creek, Mackenzie and Murray Ridge (1976); Shoulder Mtn. and Stewart (1977); Bob Quinn and Greenville (1978); Germansen (1979); Prespatou and Zechtoo (1980), will fill existing gaps and increase coverage in a northerly direction. Further additional terminals will be added to extend coverage northward as requirements arise.

3. Point-to-Point Rural Radio Systems (Refer to Drawing RS021 attached)

B.C. Tel has recently developed a VHF Rural Radio package designed to extend exchange service to customers up to sixty miles away from established central offices. Approximately 21 of these systems are currently in use in the B.C. Tel network. Two are in the area north of highways 16 and 97, operating between North Pine and Prespatou and between Mackenzie and Blackwater camp. We expect that additional systems will be provided in northern B.C. over the next few years.

4. Point-to-Point Microwave Systems (Refer to Drawing RS021)

The Company presently operates the following microwave systems in northern B.C.:

a. Terrace-Kitsault/Stewart/Bell Irving
b. Houston-Shoulder Mtn.-Granisle
c. Fraser Mtn.-Murray Ridge-Fort St. James
d. Morfee-Mackenzie
e. Bear Mtn.-Mile 30-Fort St. John
f. Atlin-Whitehorse (jointly with CNT)

These systems are generally light-route systems with 120-300 channel capacity, however the route designs will permit expansion to heavy-route or television as required.

B.C. Tel has firm plans for two additional microwave systems extending into northern B.C.:

a. Fort St. John-Bullhead Mtn. (120 channel system)
b. Bell Irving-Dease Lake/Telegraph Creek (300 channel system)

Economic/Commercial Briefs in support of these systems were submitted to the Department on August 13, 1974 and March 18, 1975 respectively. Additional copies are attached for your information.

The Bell Irving-Dease Lake/Telegraph Creek brief proposes a phased program for extension northward along the route of the newly completed Stewart-Cassiar Highway. The first two hops would be constructed in 1978, with additional hops in 1979 and 1980. This is a modification of the original plan due to economic considerations.

PSRT coverage would be added as the system is extended, and exchange services would be provided as required. This system has also been designed to facilitate spur links to potential mining and hydro-electric developments, and for a future extension to connect with the existing Atlin-Whitehorse system. It should be noted that the schedule for development is to some extent dependent upon economic conditions in Northwestern B.C.

5. Broadcast Services

a. CBC Radio Network (Refer to Drawing TRANS 12-223 attached)

B.C. Tel has a 10 year contract (effective October 1973) for extending the CBC Radio Network to many locations in B.C. In northern B.C. these include the major centers along highways 16 and 97, plus Portage Mtn., Hudson Hope, Fort St. John, MacKenzie, Fort St. James, Granisle, Kitwanga, Alice Arm and Stewart. This network is expected to be extended to Atlin in 1976, and Aiyansh in 1977. Additional extensions will be added as required by the CBC.

b. Television Transportation Systems

B.C. Tel currently carries the CBC English (Pacific Network) to Prince George and Terrace. A quotation has recently been forwarded to the CBC for an extension from Prince George to Dawson Creek.

Negotiations are nearing completion with Skeena Broadcasters for the transportation of the B.C. Television Network and two American Television channels from Prince George to Terrace, Kitimat and Prince Rupert. It is expected that this system will be in service in 1976.

The six B.C. Tel microwave systems extending north of highways 16 and 97 (ref. section 4) are generally capable of accepting additional equipment to carry television. The two proposed B.C. Tel systems will also have this capability. We anticipate and are prepared for the gradual development of television northward along these systems.

While the planned expansion of terrestrial microwave facilities continues to be the most economic method of carrying television signals to the majority of population centers in B.C., there are a number of remote communities which could receive service sooner via satellite. B.C. Tel is giving serious consideration to the use of satellite facilities for this purpose and is evaluating the cost effectiveness of remote television (RTV) earth stations with voice channel additions as required.

6. Leases

B.C. Tel has arranged to lease circuits on B.C. Railway's new Murray Ridge-Dease Lake microwave system, to extend toll station line (TSL) service to Leo Creek and Lovell Cove (on Takla Lake). Additional leases will be arranged as necessary for future toll station line service along this route.

7. Toll Station Lines/Local Exchange Service

Please refer to attached documents:

Peace River District TSL/Exchange Development Program
Prince George District TSL/Exchange Development Program
Terrace District TSL/Exchange Development Program
Drawing HQH-E1008-A Existing and Proposed Central Offices

B.C. Tel operates a number of toll station lines out of our toll centers in northern B.C. The new TSL service to Leo Creek and Lovell Cove will be added later this year. From 1976 to 1980, we are planning TSL service to Greenville, Kincolith, Telegraph Creek, Eddontenajon and Meziadin Lake. Other toll station lines are anticipated for the early and mid-1980's, or earlier if requirements develop.

The toll station line usually precedes provision of local exchange service. As demand grows we eliminate the TSL, utilizing P50, P100 or P200 type portable step-by-step exchange equipment, or small electronic type exchanges. For example, in 1976 the Prespatou conversion (Peace River District) will eliminate the Buick Creek and Prespatou toll station lines. With local exchange service, we also attempt to provide our customers with full DDD access to the toll network.

We are well advanced in the engineering of Prespatou and Takla Landing exchanges which go into service in 1976. Provision of exchange service to Telegraph Creek, Eddontenajon, Meziadin Lake and Greenville is anticipated in the early 1980's. We are tracking development at Bob Quinn, Kinaskan, Snowbank, Scud River, Iskut, Bell Irving, Germansen Landing, Finlay Forks and Manson Creek to be prepared for requirements in these areas.

Our past experience in both the Interior and Northern divisions has prepared us for providing service on short notice to instant towns precipitated by mining, forestry, construction or other developments. All of our current plans are subject to regular review and can be advanced should development proceed more rapidly than anticipated.

We have attached summaries of our program for expanding exchange and toll station line service in the three districts which make up our Northern Division. We hope this information will serve to illustrate how we are developing areas we now serve, as well as how we hope to serve new areas. We have highlighted items north of highways 16 and 97 for quick reference.

Also attached for your reference is drawing HQH-E1008-A, which shows the location of B.C. Tel's existing, planned and potential exchange central offices.

Summary

It is our policy to endeavour to make telephone service available to all potential customers within our operating territory.

In remote areas, where demand is very low or where economic penalties are too severe, the MF/HF radio service is available. As demand increases, radiotelephone coverage is provided, and toll station line service (by wire-line or by rural radio) is established. Finally, when demand becomes sufficient, local exchange facilities are provided. The information included with this letter outlines our current program for extending these services into the northern areas of British Columbia.

I hope this adequately answers your questions. We would be pleased to amplify any section or to discuss our planning further with you if you wish.

Yours very truly,

G.E. Valde
CORPORATE DIRECTOR
OF PLANNING

GEV/lb
Attach.

APPENDIX "K"

4002-2-C

Canadian National
Telecommunications
9920 - 104 Avenue
Edmonton, Alberta
T5J 2X1

27 June 1975

File: 3000-65

Mr. E. Piekaar
Economic and Regulatory Advisor
Department of Communications
Federal Building
325 Granville Street
Vancouver, B.C.

Dear Mr. Piekaar:

This refers to your letter of 6 May 1975 (file 4002-2-C) enquiring about CNT's presence and activities in Northern B.C. The following paragraphs are numbered to correspond with your questions.

(i) CNT's operating territory in Northern B.C. for Public Telephone and all other Telecommunications services is:

1. The Northwestern tip of B.C. enclosed by the Alaska-B.C. border, the Yukon-B.C. border and a line between:
   a. the point where Lat 59° 30' crosses the Alaska-B.C. border (59° 30' N 135° 02' W) and
   b. the point where Long 134° crosses the Yukon-B.C. border (60° 00' N 134° 00'W).

2. That part of Northern B.C. north of a line between the following points:

a. point where Lat 59° 30' crosses Alaska-B.C. border	59° 30' N	135° 02' W
b. point where Long 134° crosses Yukon-B.C. border	60° 00' N	134° 00' W

.../2

c.	point on Yukon-B.C. border 30 miles West of Alaska Highway	60° 00' N	132° 59' 01" W
d.	point 31 miles south of Dease Lake	58° 00' N	130° 00' W
e.	point 5 miles south of Ware	57° 21' 08" N	125° 38' 40" W
f.	point where Long 123° 30' crosses the Sikanni Chief River 39 miles west of Alaska Highway	57° 12' 30" N	123° 30' 00" W
g.	point 30 miles west of Hudson Hope	56° 02' 00" N	122° 41' 00" W
h.	the junction of Beatton River Road and Alaska Highway	56° 32' 30" N	121° 15' 20" W
i.	The Beatton River Road (both sides of this road served by CNT)		
j.	abandoned Beatton River Airport	57° 23' 00" N	121° 25' 00" W
k.	point where Lat 59° crosses B.C./Alberta border	59° 00' N	120° 00' W

In the remaining area of Northern B.C., CNT provides all telecommunications except Public Telephone and associated services such as TWX, VUCOM, etc.

(ii) CNT's operating territory was established through the entrustment of the facilities of the former Northwest Communications System by the Federal Government to CNT in 1958 and ad hoc discussions with B.C. Telephone Co. which culminated in the division of territory referred to in item (i).

(iii) Public Telephone exchange service is provided at the following Northern B.C. communities. In addition a class 4 toll switch and toll centre is operated at Fort Nelson.

Community	Type	Capacity
Cassiar, B.C.	Crossbar-SAI	400 lines
Coal River, B.C.	Rurax	25 lines
Dease Lake, B.C.	Rurax	25 lines
	Crossbar-SAI	240 lines scheduled for service June 1975
Fort Nelson, B.C.	Step-by-step TWX	1600 lines, 1900 terminals 400 line 600 terminal extension scheduled September 1975

.../3

Community	Type	Capacity
Lower Post, B.C.	Rurax	50 lines
Mile 92 Ala. Hwy.	Rurax	25 lines
Mile 392 Ala. Hwy. (Summit Lake)	Rurax	25 lines
Muskwa, B.C.	Step-by-step CDO	300 lines 400 terminals 100 line 200 terminal extension scheduled for late 1975
Muncho Lake, B.C.	Rurax	50 lines
Trutch, B.C.	Rurax	50 lines
Monowon, B.C.	Step-by-step CDO	100 lines 200 terminals

For subscribers outside base rate areas of above exchanges multi-party telephone service is provided from Mile 72 of Alaska Highway to Yukon border. Multi-party service is also provided along the Beatton River Road. (An exchange is scheduled here in 1976 at Buick Creek). Multi-party service is also provided on the Watson Lake to Cassiar Road. On this road a telephone concentrator is scheduled for service in October 1975 to provide individual and two-party service to the community at Good Hope Lake.

All above exchanges connect to the long distance toll network, except Dease Lake which has local telephone service only. A CNT agent in Dease Lake provides toll service via SSB radio. Dease Lake will be connected to the long distance network as soon as facilities are available for lease from B.C. Rail (1976).

Public Mobile Telephone Service is provided in Northern B.C. with base stations at the following locations.

Base Station	Channel
Cassiar, B.C.	scheduled for service 1976
Hyland Lake, B.C.	scheduled for service 1976
Fort Nelson, B.C.	YJ, JL
Mile 392 Ala. Hwy.	JP
Mould Creek, B.C.	JL
Muncho Lake, B.C.	YJ
Sixty Mile Hill, B.C.	JR
Trutch, B.C.	YR
Monowon, B.C.	YJ, JL
YoYo, B.C.	YL

In addition to above VHF base stations, 4 HF (SSB) channels are operated at Fort Nelson.

Existing Radio Systems with their capacities are covered on enclosed Drawing XE20-017.

.../4

(iv) CNT plans to improve or extend telecommunication facilities in Northern British Columbia over the next 5 years, as follows:

a. New 120 voice channel capacity radio link Watson Lake - Dennis with extension via open wire to expand and improve facilities to Cassiar. If B.C. Railway network is not extended northward to Dease Lake, CNT will extend its radio system westward from Dennis to Dease Lake.

b. New SA1 crossbar telephone exchange for Dease Lake to be connected via two telephone trunks leased from the B.C. Railway to provide connection to the B.C. Telephone toll telephone centre at Prince George.

c. New building addition and direct distance dialling equipment at Fort Nelson to provide DDD service for the following CNT telephone exchanges:

Fort Nelson
Muskwa
Cassiar
Wonowon

d. Various radio spurs and rural radio systems along the Alaska Highway between Fort St. John and the Yukon borders to replace sections of the Alaska Highway pole line and expand and upgrade service.

e. Addition of an extra two-way microwave channel along the Grande Prairie-Alaska microwave route between Grande Prairie and Fort Nelson. It is expected that this system will have to be constructed within the next 3 years to provide additional capacity.

f. New 960 voice channel microwave system Fort Nelson-Fort Simpson which is currently under construction.

g. Possible 1200 voice channel capacity microwave system between Paint Mountain, Y.T. and the Alaska Panhandle near Borden, B.C. This is to provide a new terrestial communications link between Northern Alaska and Alaska Panhandle.

h. Possible microwave system along route of proposed CNR Railway line between Terrace, B.C. and Ground Hog, B.C. (about 150 miles south of Dease Lake).

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i. Commencing in the Summer of 1975 CN/CP Telecommunications will lease unchannelized frequency space from B.C. Telephone as follows:

Kamloops - Williams Lake	One 48 KHZ group
Quesnel - Prince George	One 48 KHZ group
Prince George - Smithers	One 48 KHZ group
" " - Terrace	One 48 KHZ group
" " - Prince Rupert	One 48 KHZ group
Smithers - Terrace	One 48 KHZ group
Terrace - Prince Rupert	One 48 KHZ group
" - Kitimat	One 48 KHZ group

This will permit an expansion and upgrade of facilities as well as permit:

(i) Abandonment of CNT pole lines Prince Rupert - Terrace and Terrace - Kitimat.

(ii) Reduction of wires on CNT pole line Terrace - Prince George.

j. Possible microwave system to serve compressor stations associated with an extension of the Westcoast gas pipeline between Fort Nelson and the Northwest Territories border near Fort Simpson to meet the proposed Foothills gas pipeline.

k. In Northern B.C. B.C. Telephone leases from CNT the following facilities:

Dawson Creek - B.C./Alberta border - Three 48 KC channelized groups (36 voice circuits) for toll trunks to AGT.

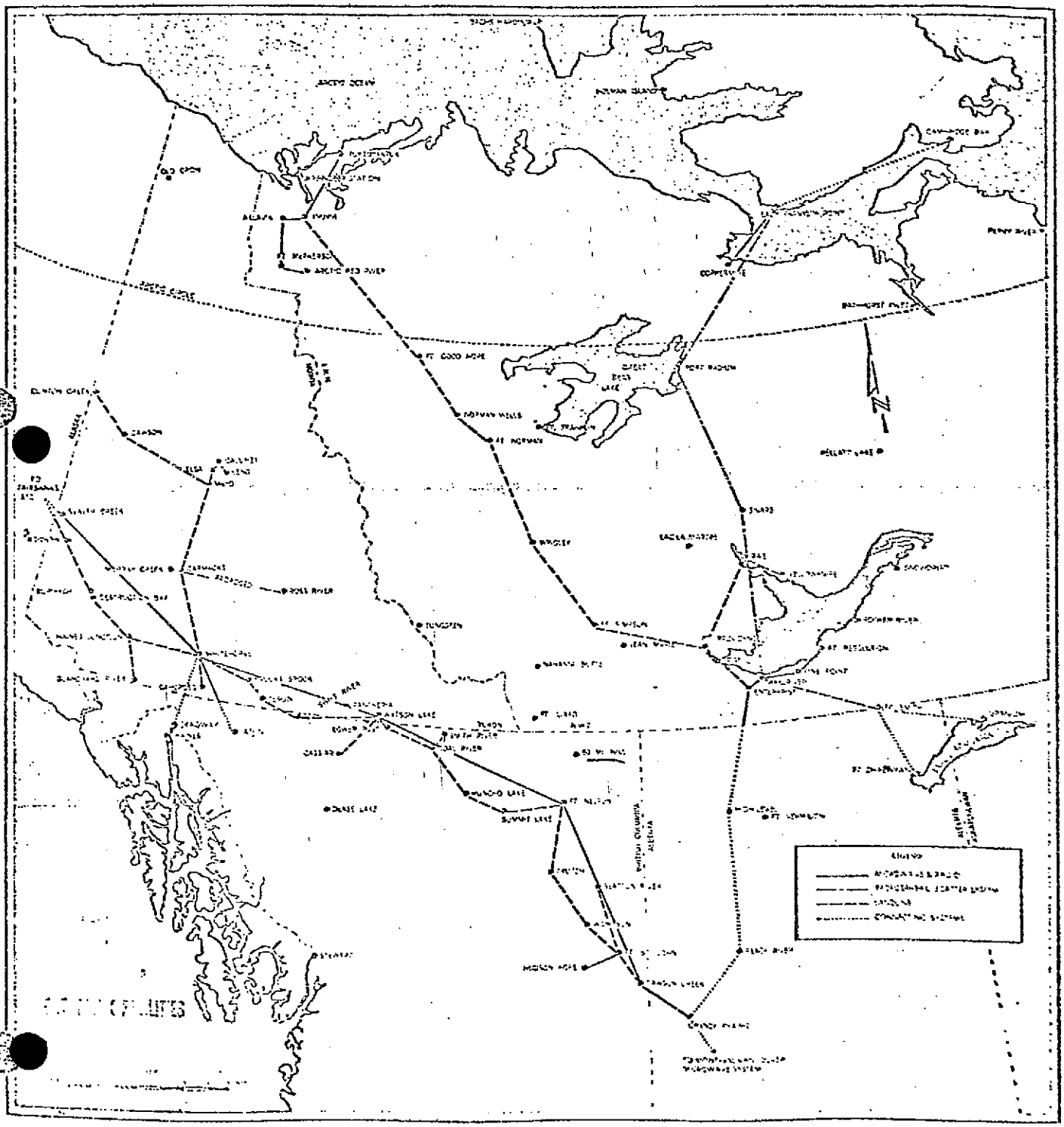
Dawson Creek - Ft. St. John - 6 voice circuits for toll trunks.

Ft. St. John to Mile 74 Alaska Highway - 3 physical pole line pairs.

I believe this answers your questions. However, please let me know if you require any further information.

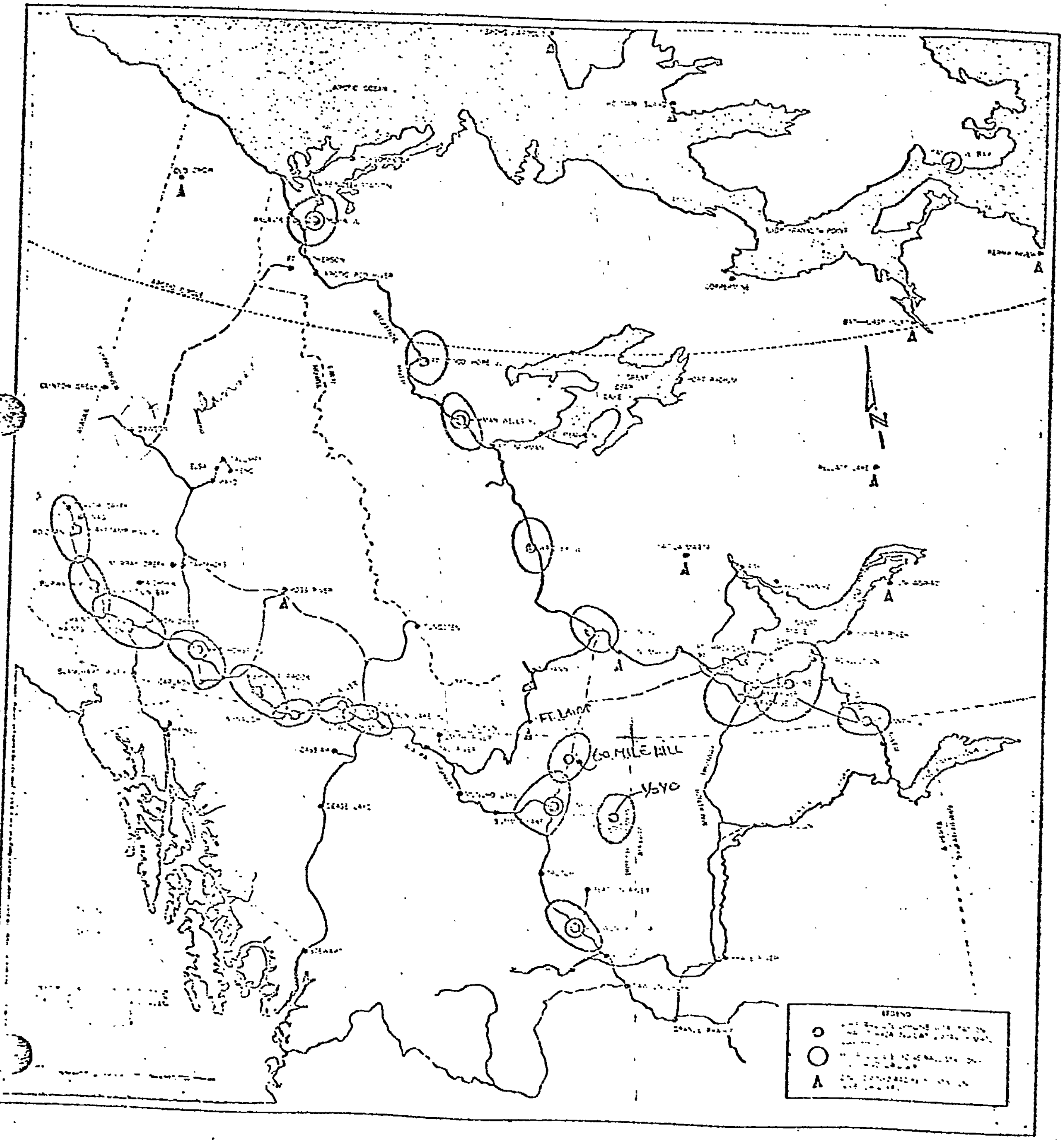
Yours truly,

R.J. Wells
Regional Manager



Public telephone coverage

telephone coverage



May 6, 1975

4002-2-C

Mr. G.E. Valde
Director of Corporate Development
B.C. Telephone Company
768 Seymour Street
Vancouver, B.C.
V6B 3K9

Dear Mr. Valde:

As you know, there has for some time now been a very keen interest in furthering the economic development of Northern B.C. This interest extends to both the Federal Government and the Provincial government and encompasses all of Northern B.C. form the Alberta to the Alaska borders.

In support of this anticipated economic development, the DOC has received a number of applications for further telecommunications facilities to serve this part of British Columbia.

In order to ensure that a rational telecommunication system develops in this part of Canada, the DOC is interested in obtaining answers to the following questions:

(i) What area of Northern B.C. does B.C. Telephone consider to be within its operating territory?

(ii) How was this operating territory established? (i.e. through formal negotiations, through regulation, or through ad hoc developments?)

(iii) At what Northern B.C. locations does B.C. Telephone presently operate exchange, radio telephone, or private line facilities? What is the type and capacity of these facilities?

(iV) What are B.C. Telephone's 5 year plans to improve or extend telecommunication services within its operating territory as defined in (i), above?

.../2

Your kind co-operation is appreciated. Please be assured that the above information will be treated confidentially within the D.O.C.

Thank you.

Sincerely,

Original Signed By
ED PIEKAAR

Ed Piekaar, Economic
and Regulatory Advisor

4002-2-C

Canadian National
Telecommunications
9920 - 104 Avenue
Edmonton, Alberta
T5J 2X1

16 May 1975

File: 3000-65

Mr. E. Piekaar
Economic & Regulatory Advisor
Department of Communications
Federal Building
325 Granville Street
Vancouver, B.C.

Dear Mr. Piekaar:

Your letter of May 6th (file 4002-2-C) has been passed to our headquarters in Toronto and will be answered by our Vice-President and General Manager.

Yours truly,

R.J. Wells
Regional Manager