

# **KITWANGA**

## ***OFFICIAL SETTLEMENT PLAN***

Consolidated with amendments to January 1984

***REGIONAL DISTRICT OF KITIMAT-STIKINE***

REGIONAL DISTRICT OF KITIMAT-STIKINE

BY-LAW NO. 157

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A by-law to establish an Official Settlement Plan for a Specified Portion of Electoral Area "B" of the Regional District of Kitimat-Stikine.

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WHEREAS pursuant to Section 809 of the Municipal Act the Regional District of Kitimat-Stikine is required to prepare Official Settlement Plans;

AND WHEREAS the requirements of Section 810 in the Municipal Act for the preparation of an Official Settlement Plan have been duly met;

NOW THEREFORE the Regional Board of the Regional District of Kitimat-Stikine, in open meeting assembled, enacts as follows:

1. This By-law may be cited as "Regional District of Kitimat-Stikine Kitwanga Official Settlement Plan By-law No. 157, 1981, Electoral Area 'B'.
2. The attached text entitled "Kitwanga Official Settlement Plan and Schedule "A" attached thereto comprise the content of the Kitwanga Official Settlement Plan and forms part of this by-law.

READ a first time this 21 day of March, 1981.

READ a second time as amended this 12 day of December, 1981.

A Public Hearing in respect of this By-law was held 6 day of April, 1981.

READ a third time this 12 day of December, 1981.

APPROVED by the Minister of Municipal Affairs on the  
16 day of March, 1982.

RECONSIDERED AND FINALLY ADOPTED the 24 day of  
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Lee Ellis  
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## SUMMARY OF OBJECTIVES AND POLICIES

It is the Objective of the Board of the Regional District of Kitimat-Stikine

O: II. 7(1) to have adequate utility and energy services provided to the Kitwanga Settlement Area.

O: II. 8(1) to increase the level of municipal-type services to the Kitwanga Settlement Area.

During this settlement plan time frame, the objective is to obtain a community water supply system.

O: III. 1(1) to provide for future growth in a rational and sequential manner which is consistent with other community objectives.

During this settlement plan time frame, the plan identifies a concentration of the core area for infilling and intensification of land uses as the main direction of development.

O: III. 2(1) to preserve existing and potential farmlands for agricultural uses.

O: III. 3(1) to provide various types of residential and rural residential lots in order to accommodate a variety of life styles.

O: III. 4(1) to encourage orderly growth and development of residential areas.

O: III. 5(1) to develop an attractive community core comprised of various compatible land uses.

O: III. 6A(1) to encourage a stable economic base by allocating sufficient land for commercial and industrial development.

O: III. 8(1) to provide community recreation facilities.

During this settlement plan time frame, the objective is to construct a skating rink and a curling rink on community owned property.

O: III. 9(1) to prevent development in potentially hazardous areas.



It is the Policy of the Board of the Regional District of Kitimat-Stikine

- P: II. 1(1) that water courses important to the fish and wildlife of the area shall be protected, and that the maintenance of the quality of water shall be encouraged.
- P: II. 1(2) that land uses adjacent to water courses shall be compatible with the preservation of water quality to minimize the disturbance to the natural environment.
- P: II. 2(1) that the lands designated as "national historic site" be preserved for uses which are compatible with the archeological significance of the historic site.
- P: II. 3(1) that lands benefitting from the growth of a stable tree cover such as escarpments, along water courses, and other environmentally sensitive zones shall be protected and enhanced.
- (2) that existing forested land identified for its recreation potential shall be encouraged for conservation by means of appropriate land use designations.
- (3) that existing trees shall be retained where possible, to serve as a buffer between differing land uses, and between residential dwellings and traffic arterials.
- P: II. 4(1) that crown lands within the Settlement Area shall be encouraged for retention by the Crown unless and until suitable development proposals compatible with the overall plan and contingent on performance are received.
- P: II. 5(1) that land uses within flood-prone areas shall be restricted to compatible uses such as agriculture, wildlife reserves, parks, recreation areas, and greenbelts unless riverbank protection measures and/or flood-proofing of structures below the critical floodplain elevations meet the criteria outlined by the Ministry of Environment.
- (2) that residential land use within floodplain areas shall be discouraged.

- (3) that, where there is no alternative to development on the floodplain, and where mobile homes or buildings to be used for habitation, business, or storage of goods damageable by flood waters are to be located or constructed in any area liable to flooding, such buildings or mobile homes shall be adequately flood-proofed in accordance with the floodproofing requirements of the Ministry of Environment and these requirements shall be contained in the appropriate implementing by-laws.
  - (4) that uses requiring placement of fill in channels or floodways or contributing to debris or effluent discharge into river channels shall generally be discouraged; however, where circumstances require placement of fill or effluent discharge, developments shall conform to pollution control standards of the Ministry of Environment.
  - (5) that the retention of natural vegetation along watercourses shall be encouraged.
  - (6) that, where planned development or disposal of wastes is to take place near an aquifer which provides, or may in the future provide, a source of water supply for the community, the development shall conform to standards and criteria of the Ministry of Environment.
- P: II. 5(7) that building development adjacent to cutbanks shall remain a safe distance away from the cutbanks in accordance to guidelines and regulations of the Ministry of Environment and the implementing by-laws of the Regional District.
- (8) that living trees, vegetative ground cover or soil shall not be removed from any designated open space or cutbank if the instability or potential for erosion of such areas is increased.
- P: II. 6(1) that transportation corridors shall be co-ordinated with planned uses of the land.
- (2) that roads and transportation systems shall be designed and constructed in a safe and functional manner.

- P: II. 7(1) that corridors for energy and utility easements shall be co-ordinated with planned uses of the land.
- (2) that the provision of utility and energy services to the Kitwanga Settlement Area shall be encouraged.
- P: II. 8(1) that the provision of a community water supply system for areas capable of economical servicing in the Kitwanga Settlement Area shall be encouraged.
- (2) that a water supply system shall provide adequate water for domestic consumption and fire protection to designated areas within the Settlement Area.
- (3) that, on provision of a community water supply system, all future lots in the designated supply area shall attach onto the community water system.
- (4) that the water supply shall be cognizant of and sensitive to overall drainage patterns.
- P: II. 9(1) that sewage shall be disposed of in a safe and sanitary manner.
- (2) that, where no community sewage system exists, minimum parcel sizes and density of dwelling units shall, in addition to planning requirements, be in compliance to standards established by the Ministry of Health and/or the Ministry of Environment.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

- P: III. 1(1) that land uses in the Kitwanga Settlement Area shall be encouraged as designated on the Land Use Plan, Schedule A of the Official Settlement Plan.
- (2) that the boundaries of land use designations shall be interpreted as general and not specific; and further, that the specific boundaries of neighboring land uses shall be refined and determined for the parcel concerned at the time of subdivision application.
- P: III. 2(1) that lands designated as "Agricultural" on the Land Use Plan shall be reserved for agricultural uses unless exempted by the Agricultural Land Commission and the applicable by-law amended by the Regional District.
- (2) that all uses and subdivision of ALR land, except those exempted under Section 19(1) of the Act, shall be in accordance with the provisions of the Agricultural Land Commission Act, regulations thereto, and orders of the Commission.
- (3) that, in the event land is excluded from Agricultural Land Reserve, the land shall remain in the "Agricultural" designation unless and until the lands are redesignated by by-law amendment.
- P: III. 3(1) that rural land uses shall be encouraged in designated areas.
- (2) that the rural option shall provide for both active and passive rural uses.
- (3) that other less intensive land uses such as agriculture, open space and recreation, and complimentary uses such as institution/education shall be permitted in rural areas.
- P: III. 4(1) that residential developments shall be designed and constructed in a manner which provides for the health and safety of the occupants.
- (2) that subdivision of lands shall reflect the economical provision of services.
- (3) that scattered residential developments shall be discouraged.

P: III. 5(1) that small scale commercial, office, residential, government, community, institutional, recreational and other such uses compatible with the aforementioned uses and with the general ambience of the area shall be permitted in the area designated for mixed use.

(2) that automobile oriented uses, industrial uses, large scale commercial developments, and unsightly uses shall not be permitted in the mixed use area.

P: III.6A(1) that commercial developments shall be located in designated land use categories.

(2) that home occupations shall be permitted, provided that it does not disturb the residential area.

(3) that adequate off-street parking shall be provided for all commercial developments.

(4) that commercial developments adjacent to other uses shall provide adequate screening and suffering to minimize land use conflicts.

P: III.7A(1) that the Industrial land use designation for the site of the Kitwanga Lumber Co. be changed to another appropriate land use designation by Settlement Plan review process if and when the use as lumber mill ceases to occupy the site.

(2) that appropriate provincial agencies shall be encouraged to support the viability of existing industrial uses.

(3) that industrial uses shall be encouraged to locate so as to minimize land use conflicts between industrial and other land uses.

P: III.7B(1) that highway oriented industrial uses shall be located in areas designated as Rural/Industrial on the Land Use Plan.

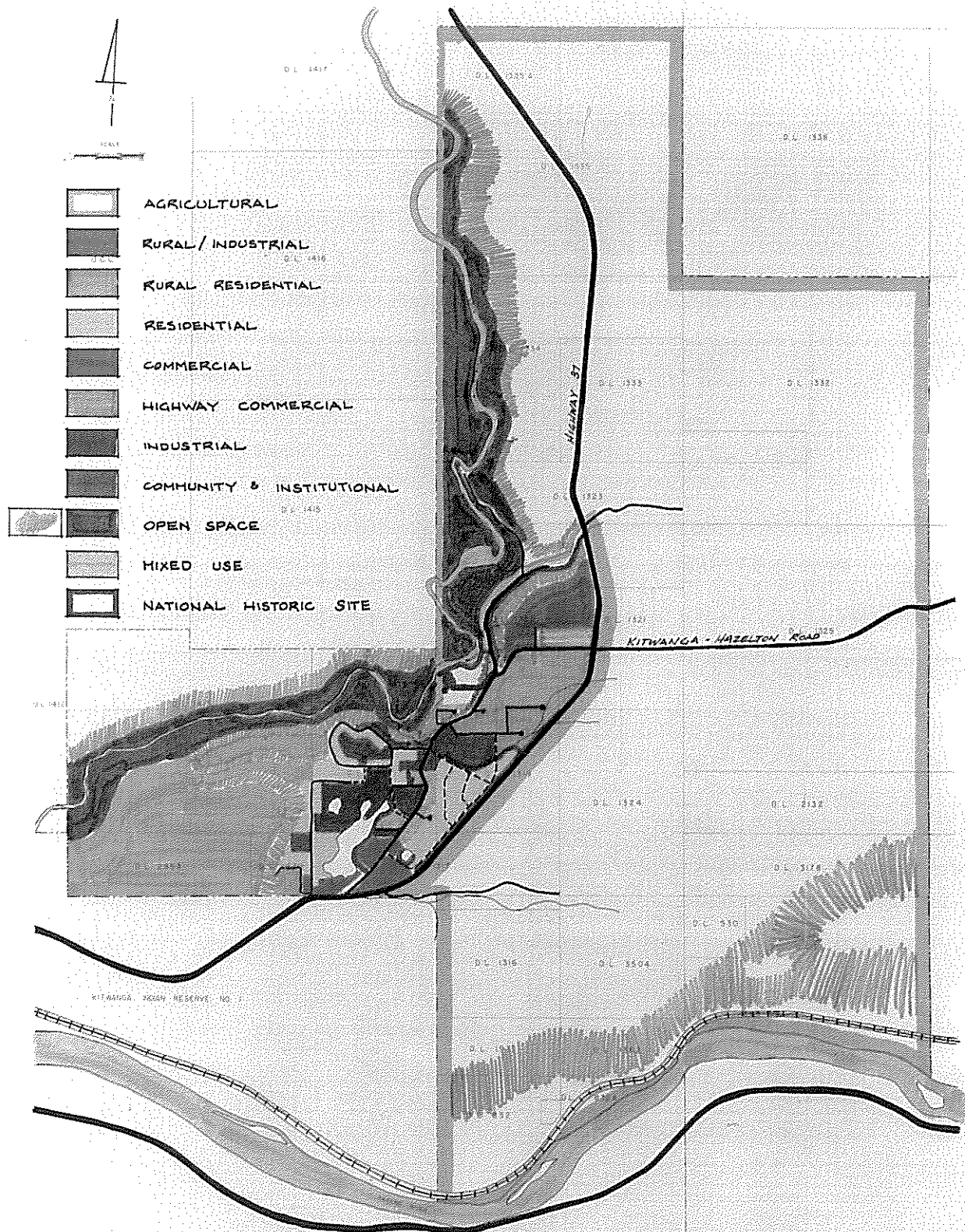
P: III. 8(1) that community aspirations for the provision of community recreation facilities shall be supported, provided such facilities are economically feasible.

P: III. 9(1) that environmentally sensitive areas shall be preserved in their natural state.

(2) that the framework for an integrated open space system shall be provided by means of appropriate land use designations.

(3) that development in hazardous areas shall be discouraged.

# KITWANGA SETTLEMENT AREA LAND USE PLAN



THIS LAND USE PLAN IS SCHEDULE 'A' OF BY-LAW NO. 157 OF THE  
REGIONAL DISTRICT OF KITIMAT - STIKINE

CHAIRMAN

June 20, 1981  
DATE

SECRETARY - TREASURER

## SECTION I: INTRODUCTION

## SECTION I: INTRODUCTION

### 1.1 PLAN BOUNDARIES

The boundaries of the Kitwanga Settlement Plan area were established for the purposes of preparing the Kitwanga Official Settlement Plan. These boundaries were formulated by the Kitwanga Advisory Planning Commission and circulated through the Technical Planning Committee and the Regional Resource Management Committee.

The area of the Kitwanga Official Settlement Plan includes all lands enclosed by the boundaries as indicated on Map 1.

### 1.2 RELATIONSHIP TO REGIONAL PLAN

Objectives and Policies contained within the Kitwanga Official Settlement Plan are subsequent to Objectives and Policies of the Regional Plan of the Kitimat-Stikine Regional District pursuant to Section 809 of the Municipal Act (1979 Revised Statutes).

### 1.3 TIME FRAME

The time frame of the settlement plan is for a 5 - 10 year period. Considerations for longer term development have been taken into account; however, changes in growth rate, the socio-economic climate and life-style aspirations can change over time. Therefore, the Official Settlement Plan should be reviewed in five years time. Constant monitoring of evolving land uses and population trends should be an integral part of the planning process.

### 1.4 INTERPRETATION OF THE PLAN

"Planning is essentially a process of anticipating change in land use and determining how best to manage or influence the expected changes...An official settlement plan is a document embodying a statement of the intended future development of a particular area. It should be a flexible tool, responsive to change, which will serve as a guide to day-to-day decision making."<sup>1</sup>

The Kitwanga Official Settlement Plan is intended to provide broad land use guidelines for the orderly development of the settlement area. Overall land use patterns have been developed in consideration of natural features and planning principles. Boundary situations should be interpreted as general and not specific. For development purposes, the exact location of boundaries between differing land uses should be investigated with site specific information.

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(1) Technical Guide for the Preparation of Official Settlement Plans by the Ministry of Municipal Affairs

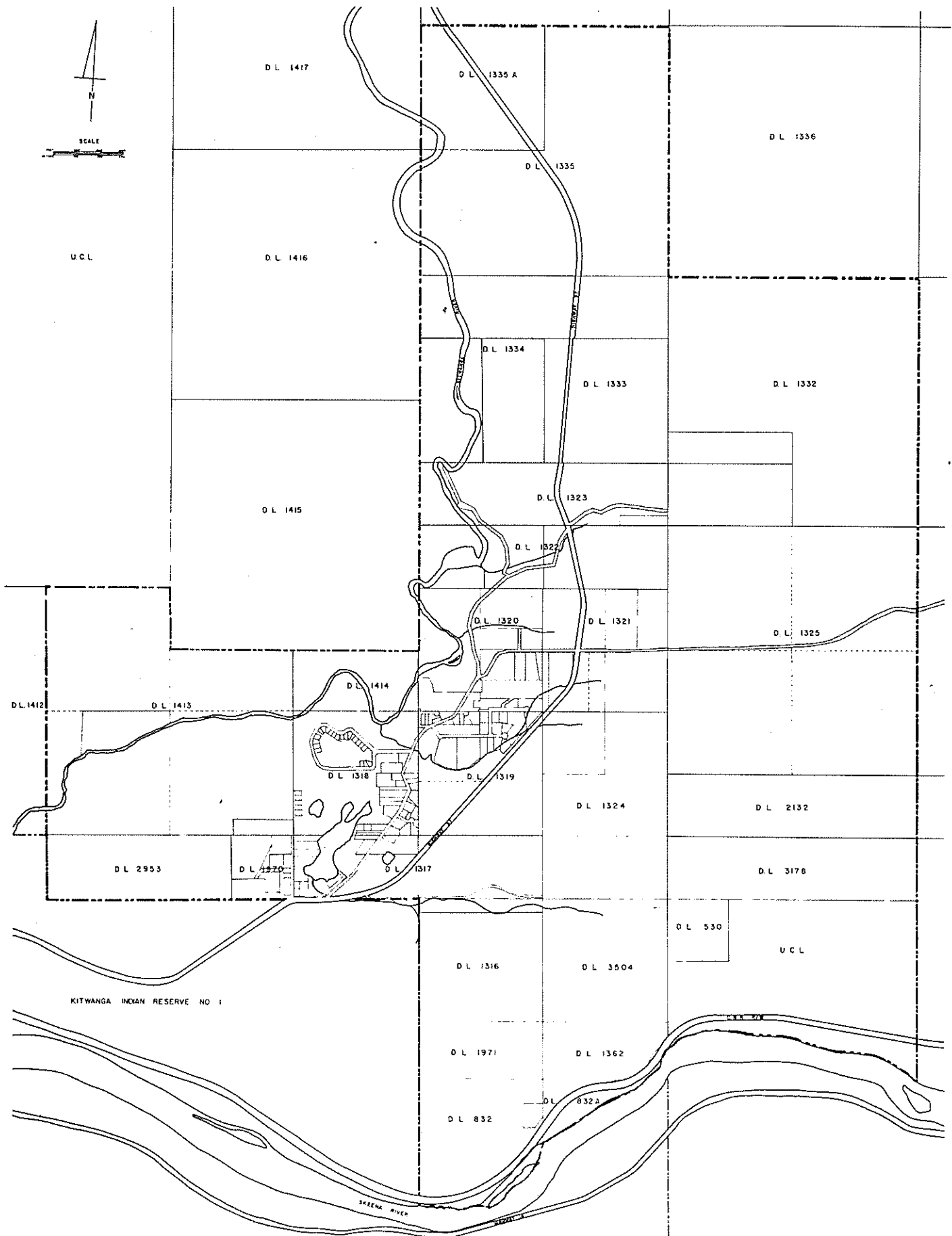


Land use designations indicated on the Land Use Plan, Schedule A of the Official Settlement Plan, are generalized for purposes of conceptual land use organization. Detailed land uses are to be as designated on the implementing documents.

Policies are categorized under appropriate sections. Some policies may apply to categories other than those under which they are stated. For purposes of brevity, and to avoid repetition, the policies have not been restated; therefore, it should be interpreted that policies are generally applicable and not that the policies apply only to the section under which they are stated.

Where contradictions in policies occur for particular situations, the interpretation should be at the discretion of the approving authorities.

# MAP 1: PLAN BOUNDARIES KITWANGA SETTLEMENT AREA



## SECTION II: EXISTING FEATURES

## SECTION II: EXISTING FEATURES

### II.1 FISH AND WILDLIFE HABITAT

The area around Kitwanga contains populations of various wildlife species including moose, goat and deer. Deer inhabit the flatlands along the Skeena and Kitwanga Rivers; the goat population is located generally on mountainous slopes on higher elevations, and moose wander throughout the wooded areas away from built up areas. The usual northern wildlife such as grouse, porcupine, bear, etc., can also be seen around the area. As human settlement increases in the area, the wildlife population will likely be pushed further into the backwoods.

The Kitwanga River is a major producer of fish stock due to the good aquatic environment of the lakes and streams. Kitwanga Lake acts as a reservoir providing a stabilizing influence on the system. The lake aids in regularizing the fluctuation of water temperatures in the river and streams below the lake; it stabilizes the water flows; it provides the appropriate aquatic environment for fish sustenance, and it minimizes the disturbance in spawning conditions.

The predominant species of salmon in the Kitwanga River system is the pink salmon with annual runs of 250,000 pinks being recorded. The pinks generally spawn below the lake predominantly between the outfall and Moonlit Creek with some spawning also occurring down to the confluence of the Kitwanga and Skeena Rivers.

Other species of salmon are also recorded. The Chinook, or spring salmon, spawn throughout the river system below Kitwanga Lake with annual runs of roughly 150 springs. Approximately 10,000 coho per year spawn in the small feeder streams to Kitwanga Lake and in the streams which feed directly in the Kitwanga River. There is a small run of sockeye salmon -- about 3,000 to 4,000 fish per year -- which also spawn in the small feeder streams to the lake. About 500 to 1,000 steelhead per year spawn in the upper reaches below the lake.

Kitwanga Lake is a prime recreation area which, in addition to its importance in stabilizing water flows and providing an aquatic environment for salmon spawning, contains numerous species of trout including cutthroat, dolly varden, rainbow, and various species of whitefish. The productivity of this water system should be preserved and enhanced for its fish population.

It is the policy of the Board of the Regional District of Kitimat-Stikine

P: II. 1(1) that water courses important to the fish and wildlife of the area shall be protected, and that the maintenance of the quality of water shall be encouraged.

It is the policy of the Board of the Regional District of Kitimat-Stikine

P: II. 1(2) that land uses adjacent to water courses shall be compatible with the preservation of water quality to minimize the disturbance to the natural environment.

## II.2 NATIONAL HISTORIC SITE

A portion of the SW $\frac{1}{4}$  of D.L. 1320 Cassiar District includes a man made knoll called Battle hill. This site has been declared a National Historic Site by Parks Canada.

The unique mound known as Ta'awdzep (also spelled Dhawdezp), or Battle Hill is a prominent feature in the legends and history of the Indian people. One account of the legend as stated by an anthropologist (Barbeau 1929:52,53) is as follows:

"A party of Haida, from Queen Charlotte Islands, raided a fishing camp at the mouth of the Nass, massacred many of the occupants, and captured a beautiful young woman of high rank, whose name was Lutraisuh. She became the wife of Qawaek, a Haida Chief, and gave birth to two sons, whom the father smothered to death after their birth, for fear that some day they might avenge the death of their uncles. Lutraisuh deceived her husband as to the sex of her third child, making him believe in the birth of a daughter, whose life he spared for that reason. With the help of some relatives of the Raven crest, Lutraisuh murdered her Haida husband, cut off his head, and escaped by night in a dug-out. The tale of her flight across the sea to the mainland is illustrated in a few poles of this clan, which may be called the Naeqt (Tongue-licked) clan. Her child in the bow of the canoe is supposed to have sucked the protruding tongue of his father's head. Lutraisuh was rescued at the mouth of the Nass and was adopted there by a family of relatives. Her son, named Naeqt (Tongue-licked) from the episode of his mother's flight in a canoe, grew into a strong reckless boy, inheriting many of his father's characteristics. The uncles finally dismissed both mother and son, who then began a life of wanderings and solitude in the forest. Naeqt grew up with but one ambition, that of punishing the wrongs which he and his mother had to suffer. He became a bold and powerful warrior and made friends with some families on the Skeena which later were to become the Kitwanga tribe. He fashioned for his use an armour out of a grizzly-bear skin reinforced inside with a coat of pitch and flakes of slate, and began his career as a mysterious raider of coast and Nass River settlements. He was mistaken for a mythic

Grizzly-bear, whose attacks could not be resisted, on account of a magical war club in his front paw, the strike-but-once-club. But his identity was ultimately discovered, after he had killed many people. Several tribes, from Kitamat and the Nass, organized together to defeat him and his confederates and curb his ascent to power. He then established his tribal quarters on Ta'awdzep (Fortress), a pyramid-like hill 2 miles north of the present village of Kitwanga, on Gitwinlkul river. To protect his stronghold against a surprise attack, which was anticipated, he made a fence of logs around the five houses of his tribe, and a trap door covered with deer hoofs, which would rattle at the least contact. When the enemies one night tried to climb the steep slope of Ta'awdzep, they were crushed to death by the logs that rattled down as soon as they were released by the besieged warriors above. Naeqt was later wounded, some say by a gunshot (from the first gun used in the country), while he donned his grizzly-bear armour on an expedition, and then clubbed to death."

In terms of the land uses on and surrounding the historic site, it is desirable that the use of land respect, and be compatible with the objectives for preservation and minimal disturbance of the site.

It is the policy of the Board of the Regional District of Kitimat-Stikine

P: II. 2(1) that the lands designated as "national historic site" be preserved for uses which are compatible with the archeological significance of the historic site.

### II.3 FORESTS

Forest stands within the Kitwanga Settlement Plan boundaries consist mostly of mixed small deciduous stands. No significant economic potential exists for logging of forest stock within the settlement plan boundaries. Designated provincial forests are not included in the settlement plan boundaries.

Forests, however, can provide amenities to the residential environment such as in buffering, parks, and open space; and forest cover aids in the retardation of erosion.

It is the policy of the Board of the Regional District of Kitimat-Stikine

P: II. 3(1) that lands benefitting from the growth of a stable tree cover such as escarpments, along water courses, and other environmentally sensitive zones shall be protected and enhanced.

- (2) that existing forested land identified for its recreation potential shall be encouraged for conservation by means of appropriate land use designations.
- (3) that existing trees shall be retained where possible, to serve as a buffer between differing land uses, and between residential dwellings and traffic arterials.

## II.4 LAND STATUS

The area enclosed by the Settlement Plan boundaries consists of roughly 2360 hectares (5832 acres). Approximately 39% of this area is presently held by the crown; the remainder is owned by the private sector. The amount of privately owned lands has been gradually increasing since original settlement at the turn of the century. During the 70 years from 1910 to 1980, the amount of privately owned lands has increased from 22% to 61%. From 1910 to 1950 agriculture was the main economic base of the settlement area and land requirements reflected this need. Beginning in the 1950's, the main economic base shifted to forest related activities and the increase in population was absorbed by creating small acreages.

### Crown and Private Lands

	Crown Lands		Private Lands	
	<u>ha</u>	<u>%</u>	<u>ha</u>	<u>%</u>
1910	1840	78%	520	22%
1930	1340	57%	1020	43%
1950	1280	54%	1080	46%
1970	1090	46%	1270	54%
1980	920	39%	1440	61%

Population projections (see Table 20) and the need for better servicing standards indicate that, for the Settlement Plan time frame, there is sufficient land available to meet future residential requirements. In order to provide for the increased level of servicing standards, consolidation of residential land uses is needed to provide for economically viable servicing systems.

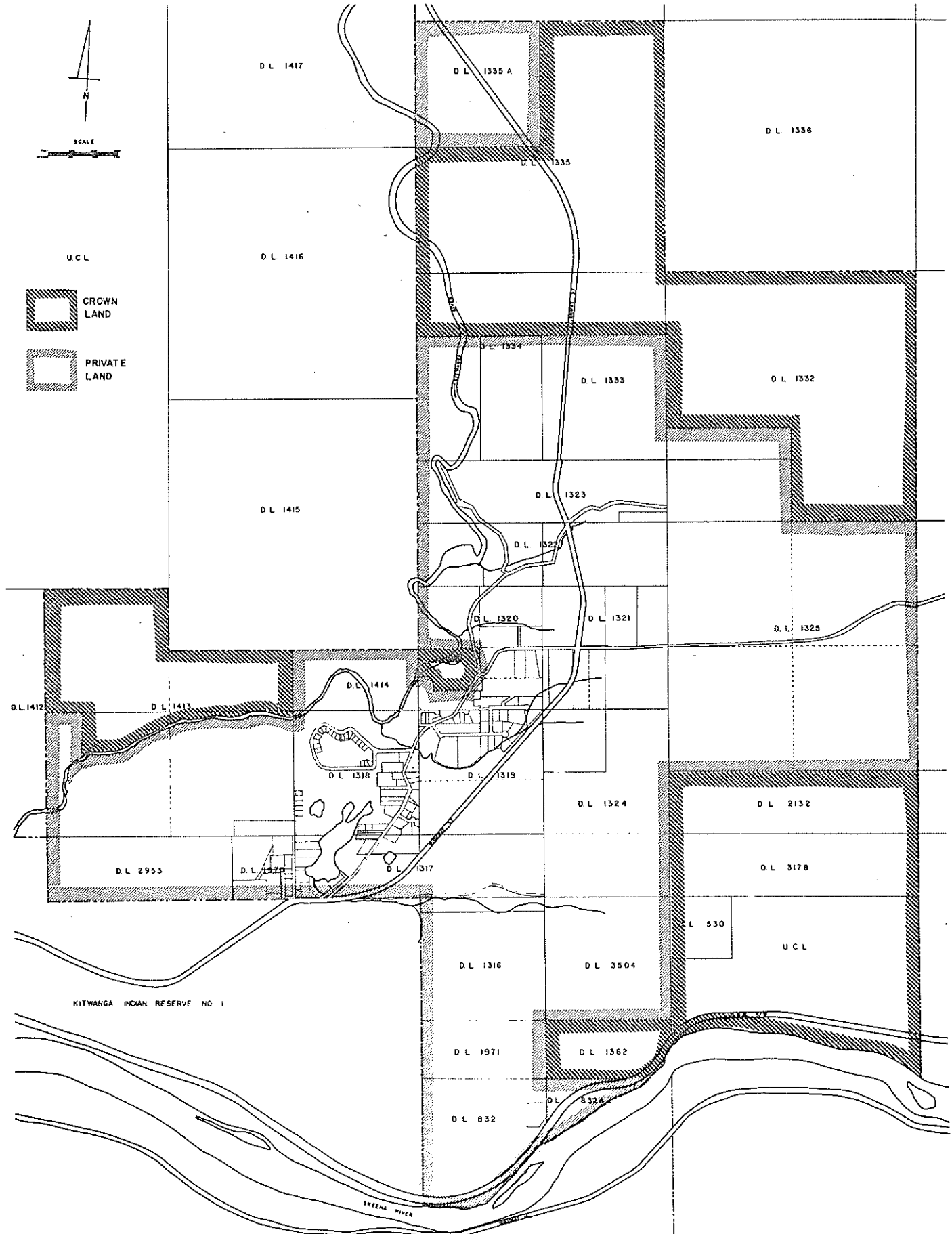
Crownlands designated as agricultural on the Land Use Plan might be released by the Ministry of Lands, Parks and Housing for this use; however, this should be contingent on use and performance.

It is the policy of the Board of the Regional District of Kitimat-Stikine

P: II. 4(1) that crown lands within the Settlement Area shall be encouraged for retention by the Crown unless and until suitable development proposals compatible with the overall plan and contingent on performance are received.



# MAP 2 : LAND STATUS KITWANGA SETTLEMENT AREA



## II.5 FLOOD PLAINS AND CUTBANKS

Areas adjacent to major water courses, namely the Skeena River and the Kitwanga River, are susceptible to flooding. The actual location depends on the level of the land in relation to the adjacent level of water in the water course. Floodplain mapping for the Skeena and Kitwanga Rivers was not available at the time of writing. Thus the following policies for floodwater protection reflect generalized concerns; specific development proposals should be evaluated with site specific information.

Areas subject to flooding have been defined by the Water Resources Service of the Ministry of Environment. Specific building requirements are based on 200 year flood levels. Local topographical information is applied to determine habitable floor levels in relation to the flood levels.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

- P: II. 5(1) that land uses within flood-prone zones shall be restricted to compatible uses such as agriculture, wildlife reserves, parks, recreation areas, and greenbelts unless riverbank protection measures and/or flood-proofing of structures below the critical floodplain elevations meet the criteria outlined by the Ministry of Environment.
- (2) that residential land use within flood-plains shall be discouraged.
  - (3) that, where there is no alternative to development on the floodplain, and where mobile homes or buildings to be used for habitation, business, or storage of goods damageable by flood waters are to be located or constructed in any area liable to flooding, such buildings or mobile homes shall be adequately flood-proofed in accordance with the floodproofing requirements of the Ministry of Environment and these requirements shall be contained in the appropriate implementing by-laws.
  - (4) that uses requiring placement of fill in river channels or floodways or contributing to debris or effluent discharge into river channels shall generally be discouraged; however, where circumstances require placement of fill or effluent discharge, developments shall conform to pollution control standards of the Ministry of Environment.
  - (5) that the retention of natural vegetation along watercourses shall be encouraged.

- (6) that, where planned development or disposal of wastes is to take place near an aquifer which provides, or may in the future provide, a source of water supply for the community, the development shall conform to standards and criteria of the Ministry of Environment.

Cutbanks are produced along areas where fast moving water currents have eroded the riverbanks. Natural vegetative cover and root systems aid in retarding the rate of surface drainage and in retarding the erosion along the cutbanks.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

- P: II. 5(7) that building development adjacent to cutbanks shall remain a safe distance away from the cutbanks in accordance to guidelines and regulations of the Ministry of Environment and the implementing by-laws of the Regional District.

- (8) that living trees, vegetative ground cover or soil shall not be removed from any designated open space or cutbank if the instability or potential for erosion of such areas is increased.

## II.6 TRANSPORTATION CORRIDORS

The opening of the Kitwanga Bridge in 1975 and the up-grading of Highway 37 to provide access to northern parts of the province has altered the established patterns of vehicular circulation.

Prior to 1975, the Kitwanga/Hazelton Road served as the main vehicular link from Hazelton to the communities on the north side of the Skeena River. The Kitwanga Valley Road wound through the built up portions of the Kitwanga Community, thus exposing business along the road to passing vehicular traffic.

The new Highway 37 alignment by-passes the existing built up portions and is likely to place new emphasis for commercial and industrial build-up on key parcels of land alongside the transportation corridors. The new alignment carries the bulk of traffic volume through the valley, it is likely to redefine the role of the Kitwanga Valley Road to function as a collector.

Residential streets in the Kitwanga Valley have been evolved incrementally as necessity requires, and appears to lack planning for access to future residential areas. Many of the streets terminate in dead-end cul-de-sacs with no provision of access to lands behind. The rolling terrain of the

area and the incremental manner in which the roads have evolved, creates some corners where visual sight distance is hampered by sharp corners, knolls, and vertical curves.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: II. 6(1) that the provision of safe and functional road system shall be encouraged.

## II.7 UTILITIES AND ENERGY

Major transmission of natural gas is routed via the Telkwa Pass from Telkwa to Terrace. Natural gas service is not provided to the Kitwanga Valley area. Extension of natural gas transmission lines to service this area would require heavy commercial and industrial loads before distribution of service to Kitwanga would be viable. Pacific Northern Gas has no immediate plans for provision of natural gas to Kitwanga.

### Electricity

Electricity is provided by B.C. Hydro by means of a 25KV distribution line from Hazelton.

The main transmission line in the region is currently brought from the Williston substation to the Telkwa substation via a 500KV transmission line which extends through the Telkwa Pass to the Skeena substation near Terrace. At the Telkwa substation the voltage is stepped down to 138KV for transmission to the Hazelton substation. From here it is stepped down for distribution via the 25KV line to the Kitwanga Settlement Area.

The main users of electrical power in the area is the CanCel Mill and the Kitwanga Lumber Co. Mill. There is also 3-phase power provided to the school at Kitwanga. All residential areas in the settlement area are serviced with electrical power. The distribution line continues northward along Highway 37 and terminates at Kitwancool.

Existing power supply system is adequate for immediate future requirements unless a major industrial user were to increase significantly the power demand in the Kitwanga vicinity. If a major industrial user were to locate in the area, the 25KV distribution line from the Hazelton substation would require upgrading to service the user.

### Telephone

B.C. Tel provides standard telephone service to Kitwanga. Local calls are distributed by cable through the exchange building located on Barclay Road near its intersection with Highway 37. Long distance signals are carried by toll cable up to the microwave transmitter/receiver station on unsurveyed crownland as indicated on Map 6. The signals are radio shot to Nine Mile Mountain just outside Hazelton. From Nine Mile Mountain the signal is repeated to Smithers where it is carried via heavy microwave radio and repeated to Prince George.

In terms of future servicing requirements, there is surplus capacity with existing equipment to provide telephone service to projected population increases for the duration of the Settlement Plan time frame.

It is the objective of the Board of the Regional District of Kitimat-Stikine

O: II. 7(1) to have adequate utility and energy services provided to the Kitwanga Settlement area.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: II. 7(1) that corridors for energy and utility easements shall be co-ordinated with planned uses of the land.

## 11.8 WATER SUPPLY SYSTEM

It is the objective of the Board of the Regional District of Kitimat-Stikine

- O: II. 8(1) to increase the level of municipal-type services to the Kitwanga Settlement Area.

Domestic water in the Kitwanga Settlement Area is provided mostly by means of individual wells. A community water system provides services to eighteen homes in the CanCel subdivision. The water for this system is pumped up from the Kitwanga River to the wood stave reservoir located immediately west of the subdivision.

A preliminary study to determine the feasibility of a water supply system for Kitwanga is being conducted by the Water Resources Branch of the Ministry of Environment.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

- P: II. 8(1) that the provision of a community water supply system for areas capable of economical servicing in the Kitwanga Settlement Area shall be encouraged.
- (2) that a water supply system shall provide adequate water for domestic consumption and fire protection to designated areas within the Settlement Area.
  - (3) that, on provision of a community water supply system, all future lots in the designated supply area shall be attached onto the community water system.
  - (4) that the water supply shall be cognizant of and sensitive to overall drainage patterns.

## II.9 SEWAGE DISPOSAL SYSTEM

The disposal of sanitary sewage in the Kitwanga Settlement area is by means of individual septic tanks and tile fields. The installation of sewage disposal systems is regulated by the Ministry of Health and the Ministry of Environment. Since the rate of seepage depends on soil conditions which vary from one locale to another, the following objectives and policies have been derived to reflect the nature of individual inspection required for installation of sewage disposal systems.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: II. 9(1) that sewage shall be disposed of in a safe and sanitary manner.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: II. 9(2) that where no community sewage system exists, minimum parcel sizes and density of dwelling units shall, in addition to planning requirements, be in compliance to standards established by the Ministry of Health and/or the Ministry of Environment.

## II.10 DRAINAGE

The core area of the Kitwanga Settlement Area is located in a slight topographic depression. This area contains numerous ponds which hold water drained from the hillsides. Four of these ponds contain water the year round; two or three other ponds and swamps contain water during the peak season.

Two natural drainage courses provide water to the ponds. One of these drainage course drains from the swamp located on the west side of Highway 37 and traverses south of the school grounds and into a gravel depression situated north of the Mill Pond. The water seeps into the soil and drains into the Mill Pond.

The other main drainage course is located south of Highway 37 and drains directly into the Mill Pond. The water level of the ponds has been receding in recent years. This phenomena has been attributed to the location of numerous wells in the core area. The CanCel subdivision, for example, takes its water from underground sources in the core area and distributes water to the 18 households in the subdivision. The disposal system is located at the edge of the escarpment, and seepage occurs towards the river below. These wells may be affecting the level of water table in the core area, thus reducing the level of the ponds.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: II. 10(1) that future drainage systems shall be installed in a manner which retains the natural characteristics of the water flow and ponding in the area.



## II.11 PUBLIC TRANSIT

Two forms of public transit are available near the Kitwanga Settlement Area. These are the Greyhound Bus Lines and the Canadian National Railway's VIA Rail service.

The Greyhound bus runs seven days a week, twice daily in either direction. Going east, the bus arrives at the Highways 16 and 37 intersection at roughly 3:00 p.m. and 12:00 p.m., and going west, it arrives at this intersection at 6:00 p.m. and 3:30 p.m. Passenger service is provided by flagging down the passing bus.

Far West bus lines presently provides service from Terrace to Stewart by the Nass route through Aiyansh. When the Highway 37 route is paved, the bus line may be providing the service through Kitwanga.

The CNR's VIA Rail operates three days a week in each direction. On Wednesday, Friday and Saturday the train goes west and arrives in the Gitwangak Indian Reserve at 7:40 a.m. On Monday, Wednesday and Friday the passenger train goes east and arrives at the Gitwangak Indian Reserve at 9:00 p.m. The station is not a regular stop but service is available by flagging down the passing train.

### SECTION III: LAND USE

### III.1 GENERAL

The boundaries of the Kitwanga Settlement Area include roughly 2360 hectares (5800 acres) of land. The land forms consists of rolling terrain, escarpments, and drainage courses. The natural constraints of the land -- the Kitwanga River, the flood plains and cutbanks, escarpments, drainage courses, major transportation corridors, and Agricultural Land Reserves -- reduce the total area capable of being developed.

Proposed land use for the Kitwanga Settlement Area have been delineated into eight land use categories:

1. Agricultural
2. Rural
3. Residential
4. Mixed Use
5. Commercial (Core Commercial and Highway Commercial)
6. Industrial (Existing Industrial and Light Industrial)
7. Community and Institutional
8. Open Space

The organization of land uses have been established with regard to natural constraints and planning principles through a process of community representation, citizen participation and public agency input. These land uses have been organized to reflect:

1. the projected population growth for the time frame of the Settlement Plan,
2. rational organization of land use,
3. economic viability for modern servicing standards, and,
4. the needs and aspirations of the community.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: III. 1(1) that land uses in the Kitwanga Settlement Area shall be encouraged as designated on the Land Use Plan, Schedule A of the Official Settlement Plan.

Land Use designations indicated on the Land Use Plan have been derived from small scale maps with 100 foot contour intervals. These designations indicate general relationships of land uses; for development purposes, the exact location of neighboring land uses should be established using detailed topographic and site specific information.

It is the Policy of the Board of the Regional District  
of Kitimat-Stikine

- P: III. 1(2) that the boundaries of land use designations shall be interpreted as general and not specific; and further, that the specific boundaries of neighboring land uses shall be refined and determined for the parcel concerned at the time of subdivision application.

During the process of Settlement Plan preparation, numerous options for the direction of growth and development were investigated. In consideration of the aspirations of the community for increased level of municipal-type services (particularly community water) and the existing level of development in the main core area, the options for growth indicated that a concentration of the core area would allow the provision of these services and would increase the likelihood of developing an attractive core community.

It is the Objective of the Board of the Regional District  
of Kitimat-Stikine

- O: III.1(1) to provide for future growth in a rational and sequential manner which is consistent with other community objectives. During this Settlement Plan time frame, the Plan identifies a concentration of the core area for infilling and intensification of land uses as the main direction of development.

### III.2 AGRICULTURE

Agricultural Land Reserves (ALR) have been established by the B.C. Agricultural Land Commission on the basis of soil and climatic capability to ensure the continued viability of the Province's farming enterprises.

It is the Objective of the Board of the Regional District of Kitimat-Stikine

O: III. 2(1) to preserve existing and potential farmlands for agricultural uses.

The ALR's in the Kitwanga Settlement Area are indicated on Map 2. Lands within the ALR are subject to the Agricultural Land Commission Act; subdivision and non-farm uses are not permitted unless approved by the Commission.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: III. 2(1) that lands designated as "Agricultural" on the Land Use Plan shall be reserved for agricultural uses unless exempted by the Agricultural Land Commission and the applicable by-law amended by the Regional District.

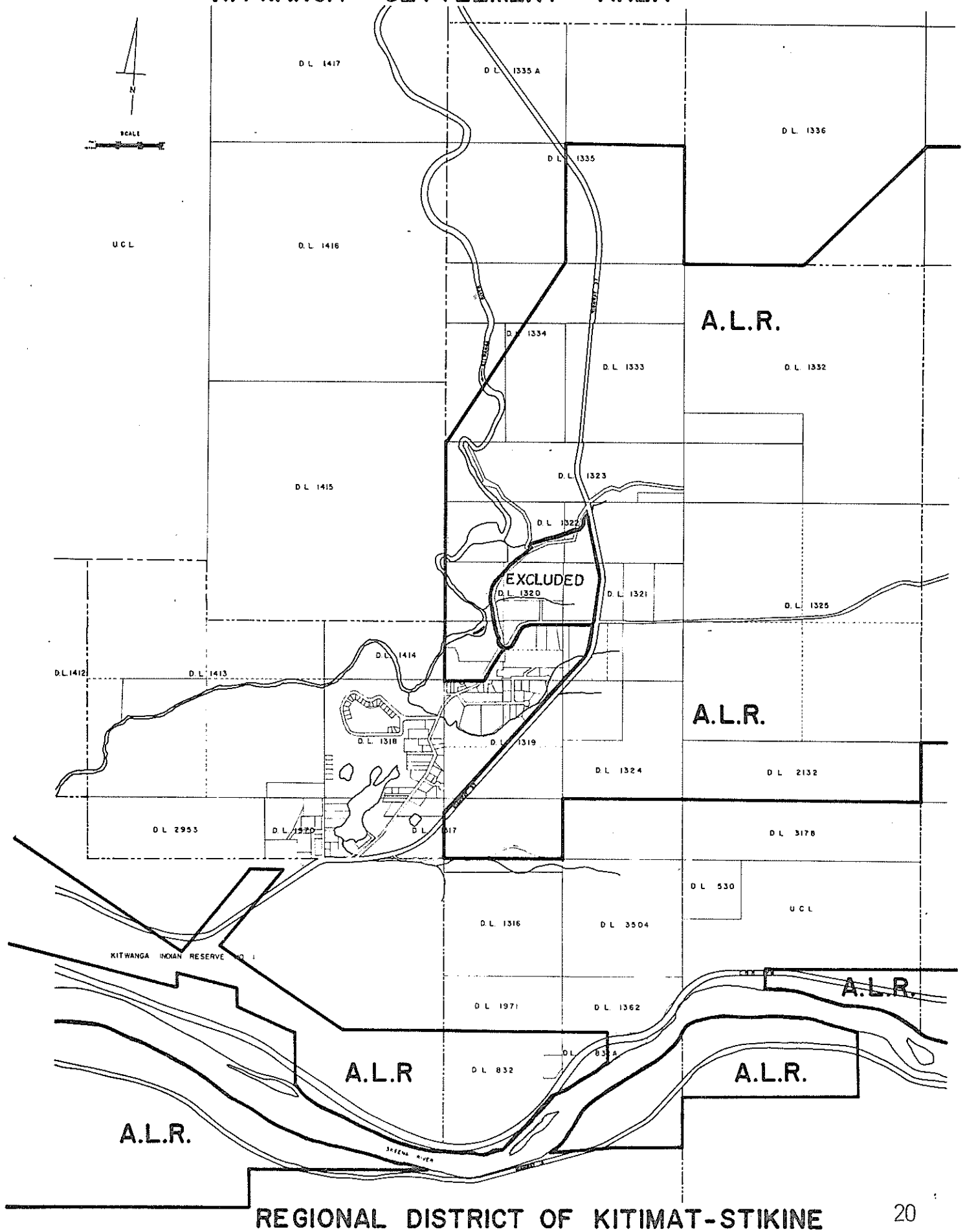
The ALR designations, applied on a broad brush basis, can be exempted according to site specific information regarding the land's agricultural potential.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: III. 2(2) that all uses and subdivision of ALR land, except those exempted under Section 19(1) of the Act, shall be in accordance with the provisions of the Agricultural Land Commission Act, regulations thereto, and orders of the Commission.

(3) that, in the event land is excluded from the Agricultural Land Reserve, the land shall remain in the "Agricultural" designation unless and until the lands are redesignated by by-law amendment.

MAP 3 : AGRICULTURAL LAND RESERVES  
KITWANGA SETTLEMENT AREA



The lands presently designated as ALR are shown on Map 2. Some of these lands are exempted from the ALR under section 19 (1) of the Land Commission Act. Other areas not suitable for agricultural purposes due to terrain or natural features are indicated on the Land Use Plan for other land uses; however, the ALR designation is still in force and the land requires exemption by the Agricultural Land Commission.

Some lands with present agricultural uses but not included within the ALR have been designated for agricultural land use. Other areas of marginal agricultural capability previously included in the ALR have been excluded prior to the preparation of the Settlement Plan. Areas where agricultural potential are tenuous due to parcel sizes, natural topography, and adjacent land uses are indicated as being supported by the Regional District for exclusion from the Agricultural Land Reserve.

The present zoning of By-law No. 73 of the Regional District of Kitimat-Stikine indicates the area outside of the core area as Rural with a minimum parcel size of 20 acres. Due to the extensive ALR in this area these lands are designated as 'Agricultural' on the Land Use Plan as required by the B.C. Land Commission.

### III.3 RURAL

One of the attractive features of living in a small community is that it enables a personal style of rural living which cannot be pursued in a city or structured municipality. Kitwanga grew from its original agricultural, trading, and trapping based economy. The tracts of lands were large at the time due to the sparseness of population. As the community grew and evolved to a lumber economy, many lots were subdivided into small acreages to enable a partial subsistence due to the seasonal nature of the industry at the time. These small acreages would be used to keep chickens, cows, goats, horses, domestic birds, small garden, etc. As the community grows in the future, it is likely that more municipal-type services such as a community water system will be required. These require a compact community in order to economically deliver the services.

It is recognized that not all residents want to live in a compact residential area. Thus a rural option should be provided to accommodate various types of rural residential lifestyles including passive rural areas which would allow for privacy, small animals, garden, etc., as well as for active rural uses such as hobby farms, market gardens, etc.

It is the Objective of the Board of the Regional District of Kitimat-Stikine

O: III. 3(1) to provide various types of residential and rural residential lots in order to accommodate a variety of lifestyles.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: III. 3(1) that rural land uses shall be allowed in designated areas.

(2) that the rural option shall provide for both active and passive rural uses.

(3) that other less intensive land uses such as agriculture, open space and recreation, and complimentary uses such as institution/ education shall be permitted in rural areas.

#### III.4 RESIDENTIAL

Development of Kitwanga Settlement Area occurs mainly in the vicinity around the Mill Pond. The built-up area is generally sparse with large lots of various sizes. Residential land use is intermixed with commercial land use in the main developed portion along the Kitwanga North Road.

Street patterns lack cohesiveness and many terminate with dead-end cul-de-sacs. Municipal-type services are non-existent in the Settlement Area. The Kitwanga Advisory Planning Commission has indicated a desire for improved level of municipal-type services; however, the viability of providing these services is dependent on the concentration of built-up areas. The Settlement Plan encourages the orderly growth and development of residential areas. This could be accomplished by infilling of presently built up areas and the extension of development to areas capable of servicing with municipal systems such as community water.

It is the Objective of the Board of the Regional District of Kitimat-Stikine

O: III.4(1) to encourage orderly growth and development of residential areas.



It is the Policy of the Board of the Regional District of Kitimat-Stikine

- P: III.4(1) that residential developments shall be designed and constructed in a manner which provides for the health and safety of the occupants.
- (2) that subdivision of lands shall reflect the economical provision of service.
- (3) that scattered residential developments shall be discouraged.

### III.5 MIXED USE

The Kitwanga North Road was the main vehicular access up the valley and to Hazelton. The community developed along this road in the Southeast portion of D.L. 1318. The Forestry Station and residences, the old school and teacherages, service station, general store, the former maintenance yard, restaurant, the church and cemetery were all clustered in this vicinity.

This area functioned as a service center for the provision of goods and government services to the Kitwanga Valley. Although some of the functions such as the maintenance yard and school have recently relocated to other areas, much of the land in this vicinity is still controlled by the community, government, or by public agencies.

Due to the central location of this area, the existing mixture of land use, and desire to create a community focus, this area has been designated a mixed use area.

The mixed use area would allow small commercial developments, parks, community and institutional uses, residential and other compatible uses which aids in the accentuation of this area as the main activity center of the community. Uses considered non-compatible are commercial uses which cater to passing vehicular traffic, industrial, and unsightly uses which detract from the objectives for an attractive community core.

It is the Objective of the Board of the Regional District of Kitimat-Stikine

- O: III. 5(1) to develop an attractive community core comprised of various compatible land uses.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: III.5(1) that small scale commercial, office, residential, government, community, institution, recreational and other such uses compatible with the aforementioned uses and with the general ambience of the area shall be permitted in the area designated for mixed use.

(2) that automobile oriented uses, large scale commercial developments, and unsightly uses shall not be permitted in the mixed use area.

### III.6A CORE COMMERCIAL

Existing commercial facilities in the Settlement Area include a number of small businesses including a service station, general store, part-time bank and restaurant. In the Gitwanger Indian Reserve, there is a service station/restaurant and several small businesses operated out of residences. The Indian band has plans for a shopping center to be built on the reserve.

The build-up of commercial facilities in Kitwanga is dependent on the extent of services provided on the Indian Reserve. This location at the intersection of Highway 16 and Highway 37 is likely to be preferred by businesses due to the increased exposure to passing vehicular traffic on Highway 16 as well as on Highway 37. The advantage for business to locate in Kitwanga is the availability of land tenure in fee simple in the Kitwanga Settlement Area.

At present, the residents of the Settlement Area and in the nearby Indian reserves often make shopping trips to Hazelton, Smithers, and Terrace for wider range of consumer goods not available in the local area.

As the area grows in population, and as traffic volume on Highway 37 increases, there may be opportunities for service sector commercial development in the Kitwanga Settlement Area.

It is the Objective of the Board of the Regional District of Kitimat-Stikine

O: III.6A(1) to encourage a stable economic base by allocating sufficient land for commercial and industrial development.

It is the Policy of the Board of the Regional District of  
Kitimat-Stikine

- P: III.6A(1) that commercial developments shall be  
located in designated land use categories.
- (2) that home occupations shall be permitted,  
provided that it does not disturb the resi-  
dential area.
  - (3) that adequate off-street parking shall be  
provided for all commercial developments.
  - (4) that commercial developments adjacent to  
other uses shall provide adequate screening  
and buffering to minimize land use conflicts.

### III.6B HIGHWAY COMMERCIAL

The historical evolution of the Kitwanga area as an isolated community away from the main east/west traffic flow along Highway 16 has resulted in existing service facilities which cater to local settlements on the north side of the river. This has resulted in the service build-up along Valley Road. With the construction of the Kitwanga Bridge and the opening of Highway 37, the orientation of these service facilities is likely to change from its previous local service orientation towards servicing the traffic along the new route.

It is anticipated that there will be a demand for highway oriented service facilities in the near future. During the process of plan formulation, two options were investigated.

1. Whether the highway oriented service facilities should be encouraged in the presently built-up area along Valley Road, or
2. Whether the highway oriented facilities should be located on Highway 37 away from the main built-up area.

Although the first option had advantages in the short-term because it would intensify the use of land along Valley Road, it had the disadvantage that the nature of the community may be drastically altered if tire shops, quick food outlets, and other highway oriented uses were to be permitted. It would also require the encouragement of traffic away from Highway 37 to the Valley Road in order for these businesses to obtain the traffic exposure. If successful, the increased traffic might result in other land use conflicts and traffic related problems.

The second option was chosen for its exposure to the Highway 37 traffic, even though it has short-term disadvantages in that development would be oriented away from the main community core. The area allocated for Highway Commercial use is a strip along Valley Road from the intersection of Highway 37 to the road leading into the Highway's maintenance yard.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: 6B(1)            that vehicular oriented commercial uses shall be located in the area designated as Highway Commercial.

### III.7A(1) EXISTING INDUSTRIAL

The existing industrial land uses in the Kitwanga Settlement Area includes the Kitwanga Lumber Co. mill and the new location of the Department of Highways maintenance yard.

The site of the Kitwanga Lumber Co. is designated in the Settlement Plan as "Industrial" due to its existing use and the anticipation that the mill will continue to occupy the site for the duration of the Settlement Plan time frame. Should the mill cease to occupy the site, the Plan should be reviewed and the site designated for another use - possibly Community/Institutional or Residential, depending on the circumstances at the time.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

- P: III.7A(1) that the Industrial land use designation for the site of the Kitwanga Lumber Co. be changed to another appropriate land use designation by Settlement Plan review process if and when the use as lumber mill ceases to occupy the site.
- (2) that appropriate provincial agencies shall be encouraged to support the viability of existing industrial uses.
  - (3) that industrial uses shall be encouraged to locate so as to minimize land use conflicts between industrial and other land uses.

### III.7B RURAL/INDUSTRIAL

The construction of Highway 37 has opened a shorter route to the Alaska Highway from the southern parts of the province. It has also made accessible possible resource developments in the northern parts of the province. There may be demands in the future for service facilities catering to light industrial such as warehousing, truck repair shops, welding shops, etc. At present there are demands by independent logging operators, truckers, etc. for rural lots capable of industrial type uses.

Due to the rolling terrain, drainage patterns and impact to existing built-up area, it was decided that industrial development should be encouraged away from the built-up portions of the community to minimize possible future land use conflicts. The selection of the area for light industrial development was determined on the basis of natural limitations, Agricultural Land Reserve designations, future expansion potential, and minimization of possible land use conflicts. The area south of Tea Creek on the east side of Highway 37 and north of the Highway Commercial area was selected as the area for rural industrial development.

It is the Policy of the Board of the Regional District of  
Kitimat-Stikine

P: III.7B(1) that highway oriented industrial uses shall  
be located in areas designated as Rural/  
Industrial on the Land Use Plan.

### III.8 COMMUNITY AND INSTITUTIONAL

Lands designated as Community and Institutional include those lands designated for public use. Community and recreational functions such as schools, parks, churches, and public assembly buildings are included in this category.

The Kitwanga Settlement Area, being an unincorporated area of the Regional District, does not have organized status as a community. The Kitwanga Citizen's Committee acts as the representative group. Funds for the operation of community functions are raised by means of dances and other social events. Some services such as road maintenance, social welfare, etc., are provided by provincial government agencies, and local services such as administration and refuse site are provided by the Regional District.

The present curling rink and skating rink are located on private lands in the CanCel subdivision. The Citizen's Committee wants to purchase land and build a facility on community owned land. The proposed location would be geographically central in relation to the community and it would be amongst other service related and public assembly functions.

It is the Objective of the Board of the Regional District of Kitimat-Stikine

O: III.8(1) to provide community recreation facilities.

During this Settlement Plan time frame the objective will be to construct a skating rink and curling rink on community owned property.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: III.8(1) that the location of lands intended for community and institutional functions shall be indicated by appropriate land use designations.

(2) that community aspirations for the provision of community recreation facilities shall be supported, provided such facilities are economically feasible.

### III.9 OPEN SPACE

The "Open Space" category consists of steep escarpments (over 30% slope), flood plains, natural drainage courses, buffer strips, and areas adjacent to the Mill Pond. The areas designated as open space are generally those areas which are either restricted in their development potential due to natural constraints, or are adjacent to amenity features such as the Mill Pond, or have built-up features such as the skating rink or septic tile fields.

It is the Objective of the Board of the Regional District of Kitimat-Stikine

O: III.9(1) to prevent development in potentially hazardous areas.

It is the Policy of the Board of the Regional District of Kitimat-Stikine

P: III.9(1) that environmentally sensitive areas shall be preserved in their natural state.

(2) that the framework for an integrated open space system shall be provided by means of appropriate land use designations.

(3) that development in hazardous areas shall be discouraged.

Some areas indicated as open space are capable of development, provided that special precautions are taken in the development of the area, and provided that the Settlement Plan by-law is amended to allow for the proposed land use. The flood plain along the Kitwanga River is subject to flood proofing requirements of the Ministry of Environment as stated in the policies of Section II.5 of the Official Settlement Plan. Agricultural land use is considered compatible with the Open Space land use designation.



## SECTION IV APPENDIX OF BACKGROUND INFORMATION

## SECTION IV:

### APPENDIX OF BACKGROUND INFORMATION

#### IV.1 LOCATION

The Kitwanga Settlement area is located in Northwestern British Columbia roughly 750 air kilometers north of Vancouver. It is geographically located on  $55^{\circ} 7'$  latitude and  $128^{\circ} 2'$  longitude.

Kitwanga is situated 92 kilometers east of Terrace via Highway 16 and 40 kilometers west of Hazelton. The community is bordered on the south by the Gitwangak Indian Reserve and the Skeena River. Along the Skeena to the west is located the Andimaul Indian Reserve.

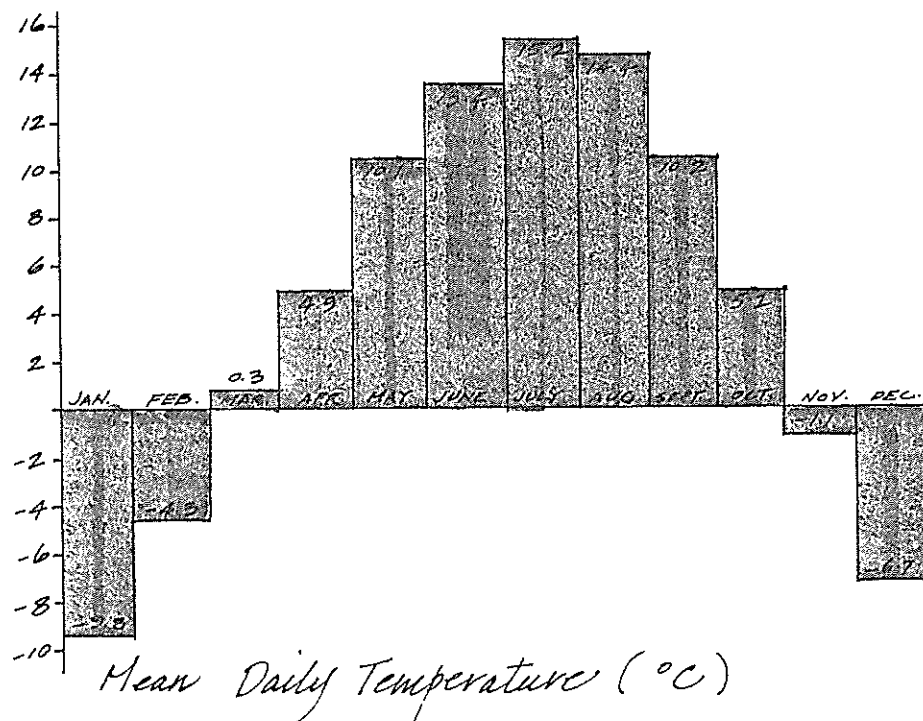
The Kitwanga Settlement Area is a few miles north-west of the junction of the Kitwanga and Skeena River.

#### IV.2 CLIMATE

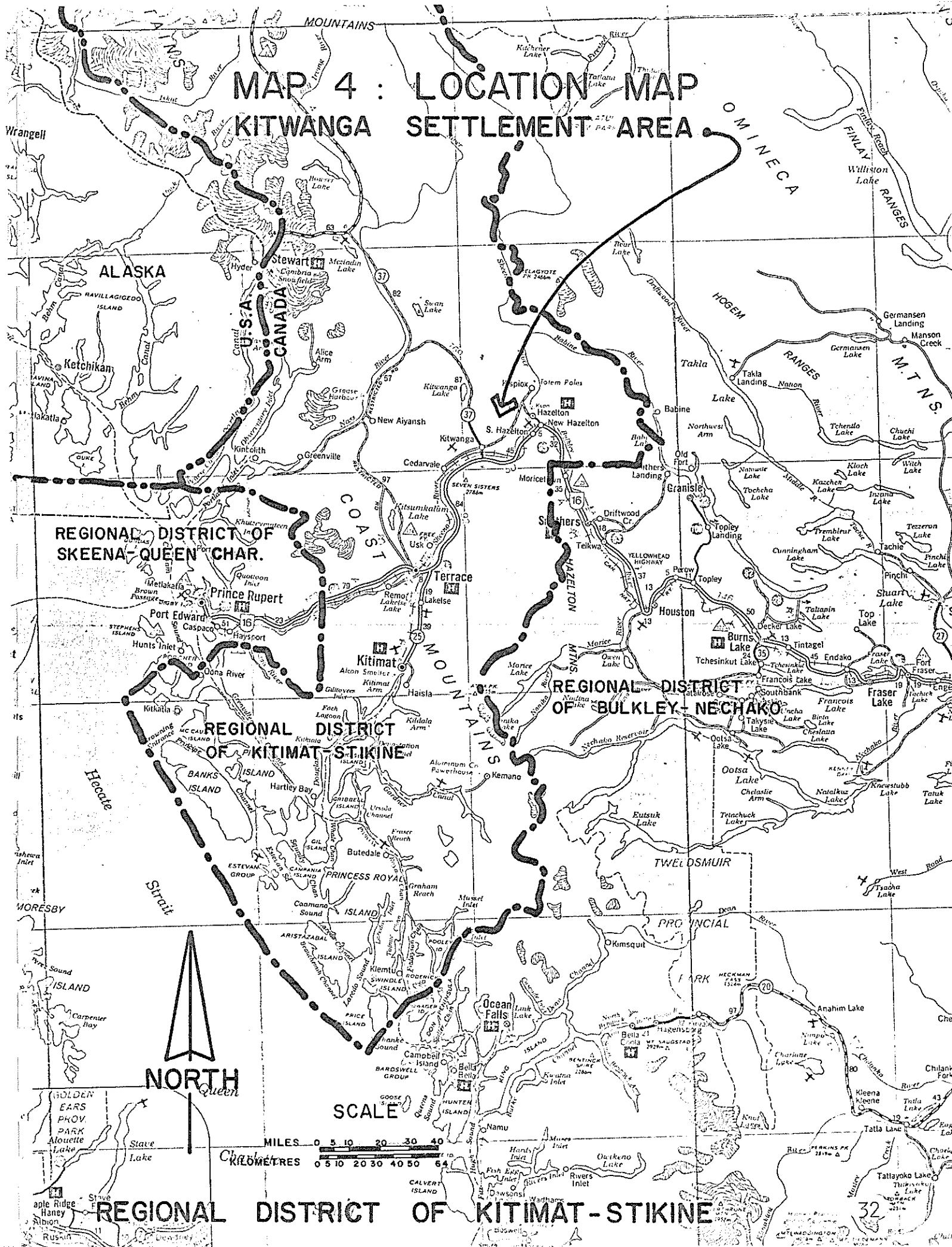
The following climatic information is based on records of Environment Canada's meteorological station located in New Hazelton.

The average mean temperature varies from a low of  $-9.8^{\circ}\text{C}$  in January to a high of  $15.2^{\circ}\text{C}$  in July.

Table 1: Mean Daily Temperatures



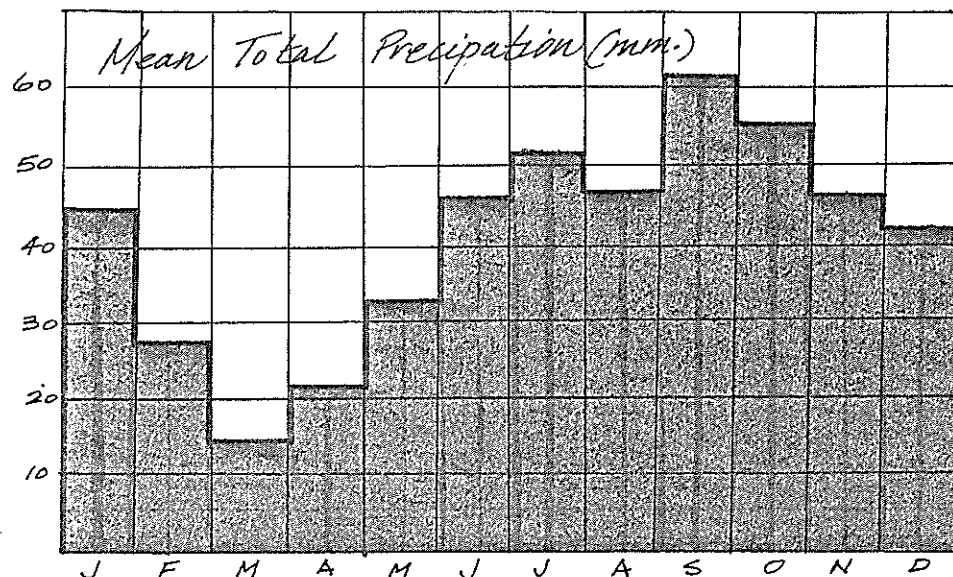
# MAP 4 : LOCATION MAP KITWANGA SETTLEMENT AREA



The average frost free period is 77 days. The mean annual number of hours of bright sunshine is approximately 1500 hours with 1000 of these hours occurring in the summer months from May to September inclusive.

Mean precipitation is 489.7 mm (19.28 in.) annually with monthly precipitation ranging from 15.5 mm (0.61 in.) in April to 61.5 mm (2.42 in.) in September. Mean total precipitation per month is shown on Table 2.

Table 2: Mean Total Precipitation



The Kitwanga area is in a transitional climatic zone with coastal marine influences combined with continental influences. The microclimate of the local area is influenced by local topography with temperatures and precipitation varying with altitude.

Wind direction is generally towards the coast (westerly) in winter and towards the land (easterly) in the summer. In the local area, wind direction can vary depending on the orientation of the valleys and mountain ranges; they tend to go up the valley in summer and down the valley in winter.

#### IV.3 THE CONTEXT

Kitwanga is located in northwest British Columbia, about 245 kilometers from the coastal port city of Prince Rupert. It is an unincorporated settlement area within the Regional District of Kitimat-Stikine.

The Regional District includes roughly 183,600 square kilometers of area and stretches from the 52° latitude on the south to the 58° latitude on the north, and from the 127° longitude on the east to the 130° longitude on the west.

The population of the Regional District in 1976 was 38,718. The Region in the past had been dependent upon the agricultural, fishing and logging industries for its economic base. The mineral and hydro-electric potential of the area are viewed as possible directions for the future development of secondary and tertiary industries.

The economic base of Terrace has been built on forest related industries but is beginning to diversify as a regional administrative and service center. Smithers, which is in the Bulkley Nechako Regional District, is also building up as a regional administrative and service center as well as a ski resort and local forest product processing and manufacturing center. Kitimat is an industrial new town built in 1952 to accommodate Alcan's workers; today the city has a population of 11,935 (in 1976) and is continuing to expand with the attraction of heavy industries. Prince Rupert, declared as Canada's 10th National Harbor in 1972, is presently being developed with industrial parks, rail extensions, and harbor facilities.

Table 3: Population of Nearby Communities

1976 Population	
Smithers	3783
Morisetown	109
Old Hazelton	371
South Hazelton	428
New Hazelton	628
Two Mile	332
Kitwanga	466
Kitwancool, I.R.	252
Gitwanger, I.R.	303
Cedarvale	104
Terrace	10251
Thornhill	4023

# MAP 5 : RELATIONSHIP TO SURROUNDING AREA

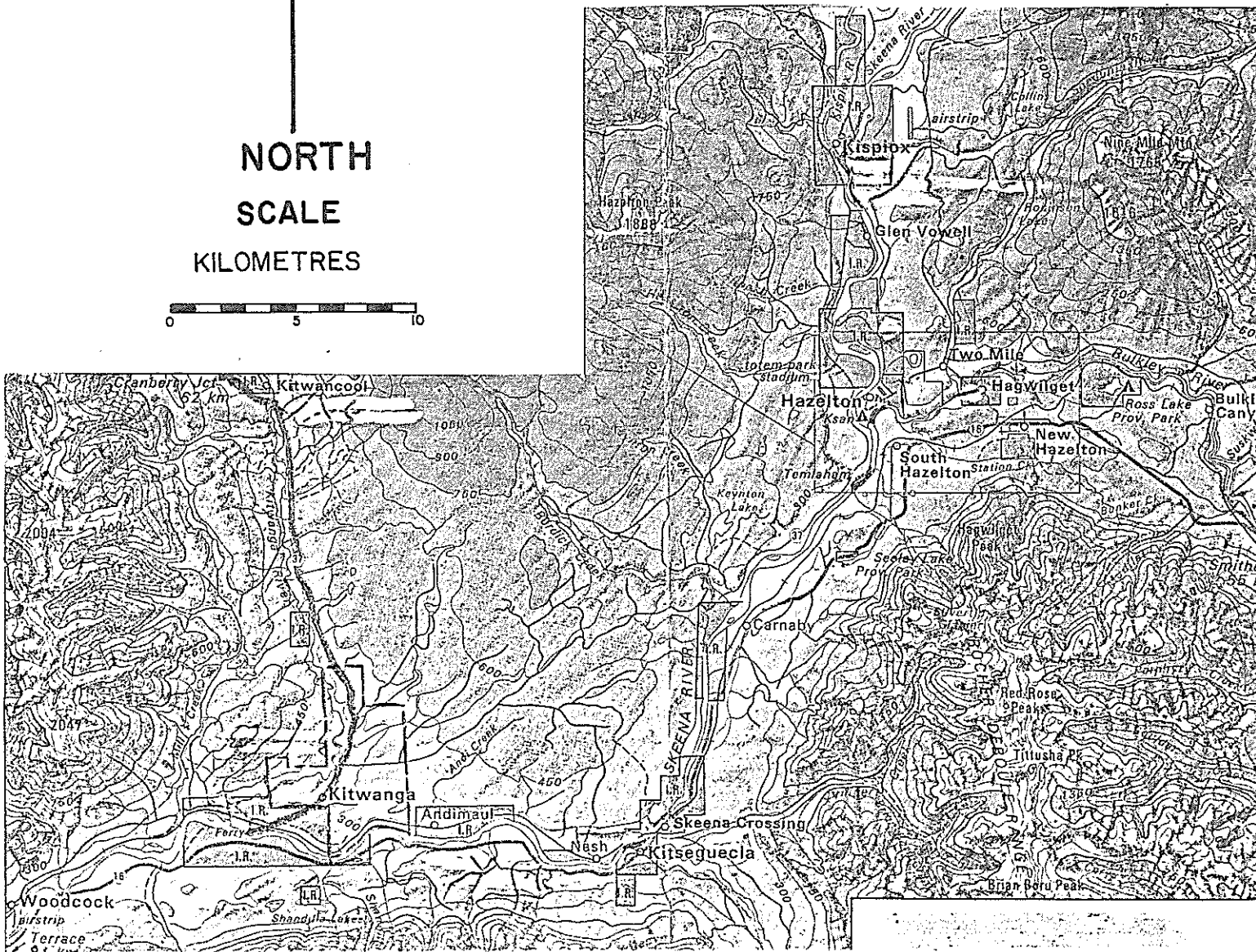
## KITWANGA SETTLEMENT AREA



NORTH

SCALE

KILOMETRES



REGIONAL DISTRICT OF KITIMAT-STIKINE

The Yellowhead Highway, or Highway 16, is the northern east-west link from the prairie provinces through the Yellowhead Pass in the Canadian Rockies to the coast city of Prince Rupert. From here, the ferry continues north to Alaska and south to Vancouver Island. Numerous small communities exist along the Highway 16 corridor. Many of these were established in the early 1920's to service the C.N.R. Other communities on the opposite side of the Skeena River have expanded with the construction and upgrading of Highway 16.

The northern route linking the southern parts of the province and the United States with the Yukon and Alaska has, in the past, been limited to the Alaska Highway which went north from Prince George through Dawson City, Fort St. John and Fort Nelson. The construction of the bridge at Kitwanga in 1975 and the present upgrading of Highway 37 provides an alternate route north to the Yukon and Alaska through Dease Lake and Watson Lake.

There have been proposals for provision of ferry services to Kitimat and to re-designate the Highway 25 corridor from Kitimat to Terrace as the southern portion of Highway 37, thus linking a regional port facility and industrial townsite with the vast resources of the northern hinterland.

Kitwanga is located just north of the junction of Highway 16 and 37. Highway 16 provides the north Canada east-west link and Highway 37 provides access to the resources of the northern west coast hinterland; thus the location of Kitwanga at this important junction may influence the function of the community and its future role in the Region.

#### IV. 4 SETTLEMENT TRENDS

The center of activity for the Kitwanga Valley community has shifted numerous times during its evolution. The native village of Gitwangak had long been a trade center for the district due to its location on the Skeena River and at the southern end of the grease trail. The first missionary arrived at the village in 1867, to be replaced by Reverend Price in 1869 who was later to build the first church in the village in 1890. The village at that time was located near its present location along the river banks.

During the early 1890's steamship transportation along the Skeena River established "Shandella" as a wood supply stop. Shandella was located on D.L. 832 and was owned by DuVernet. Settlement in the valley occurred slowly beginning at the turn of the century when adventurous single men settled in the valley on a semi-permanent basis.

The commencement of the Grand Trunk Pacific Railway in 1908 provided employment for the settlers who were engaged in cutting ties and poles. The completion of the railway in 1913 opened up the area for settlement as the settlers could bring in substantial farm livestock, implements and household goods to the area. By 1916, the non-native population of the Kitwanga Valley had increased to more than 30 persons, including railway workers, telegraphist, station master, merchant, postal clerk and physician.

Settlement of the valley continued to increase slowly during the 1920's. Farming provided a marginal living for most families who supplemented their income through pole cutting, government employment, fishing or trapping. A ferry was established early in the decade, but the railway continued to be the prime means of transport until the 1950's. Fewer than five miles of useable cart-track existed during the 1920's and these were used primarily for transport of goods from the railway station to the settlements.

The center of economic and service activity during the 1920's was in the Gitwangak Indian Reserve. In addition to the railway station, there was a Hudson's Bay Trading post, Sampare's Store and post office, the school, the RCMP barracks, the church and timber mill.

Towards the end of the 1920's, settlers other than farmers and trappers began to move into the community. In order to accommodate these new residents, several district lots (D.L. 1320, 1321 and 1322) were subdivided into parcels as small as five hectares in area. During the early 1930's all of the 27 residences in the valley lived on 480 acres included in these three district lots.



The center of activity in the early part of the decade continued to occur in the native village but it was during this decade that a gradual shift in activity focused towards the valley as a nucleus of a community started to evolve.

The economic depression of the 1930's had little impact on the 40 - 50 residents of this rural community which was in the process of evolving from a basically subsistence economy. While farm produce prices were substantially reduced and the demand for cedar poles slackened, the community was relatively self-sufficient in basic necessities of food, housing and fuel. Public works projects were increased during this period to provide some economic assistance to families in the valley. The community was comparatively better off than other communities in the north as authorities encouraged relocation of some families into the community during this period.

There was a substantial number of bachelors living in the community during the 1930's as evidenced by the estimated 1.9 persons per household<sup>(2)</sup>. Family formation and family in-migration trends were increasing during this period and this tendency was to continue in the subsequent decades.

A number of developments occurred in the Kitwanga Valley Community during the 1930's. A school was built in 1931; a mill was started in 1933 by Doll and Hobenshield and Walter Washburn moved his store from the village to the valley community. The first automobile arrived in the community around this period but its success was highly subject to the vagueness of weather and machine. In the latter part of the decade, pole cutting activities increased, and the mill was providing some local employment, but the mainstay of the economy continued to be agricultural.

War related activities of the 1940's caused an upswing in the prices of and the demand for agricultural and forest products. No significant population change occurred in the community during this period as most residents were either too young or too old for direct involvement in the war.

The number of automobiles in the community continued to increase. The road to Terrace was completed in 1944, but this remained a fair weather track at best until the 1950's. A garage and fuel depot was opened in the Kitwanga Valley in 1943, and a store opened on the site of the present store in 1944. Commercial and service activities began to focus in this area on the north-west side of the mill pond; and, in addition to the garage and store, included a school, teacherages, and a community hall which was opened in 1947.

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(2) locals identified 50 residents and 27 occupied dwellings in 1930.

Logging was to become the predominant economic activity during the 1950's. The use of trucks for logging and lumber carting enabled this activity to be pursued on a much larger scale. During the early part of the decade, pole cutting was the main export of the logging industry but as cedar poles became more difficult to obtain, some pine was cut. By 1957, pole cutting had peaked and a rapid decline occurred in the logging industry.

Sawmilling grew rapidly throughout the decade, with as many as 6 - 7 mills within 15 miles of the central Settlement area. Most of the mill workers during this decade lived on or near the mill sites.

Population continued to increase during the 1950's as families formed or moved into the community. This is evidenced by the estimated 120 persons living in 32 occupied dwelling units, or roughly 3.75 persons per dwelling unit.

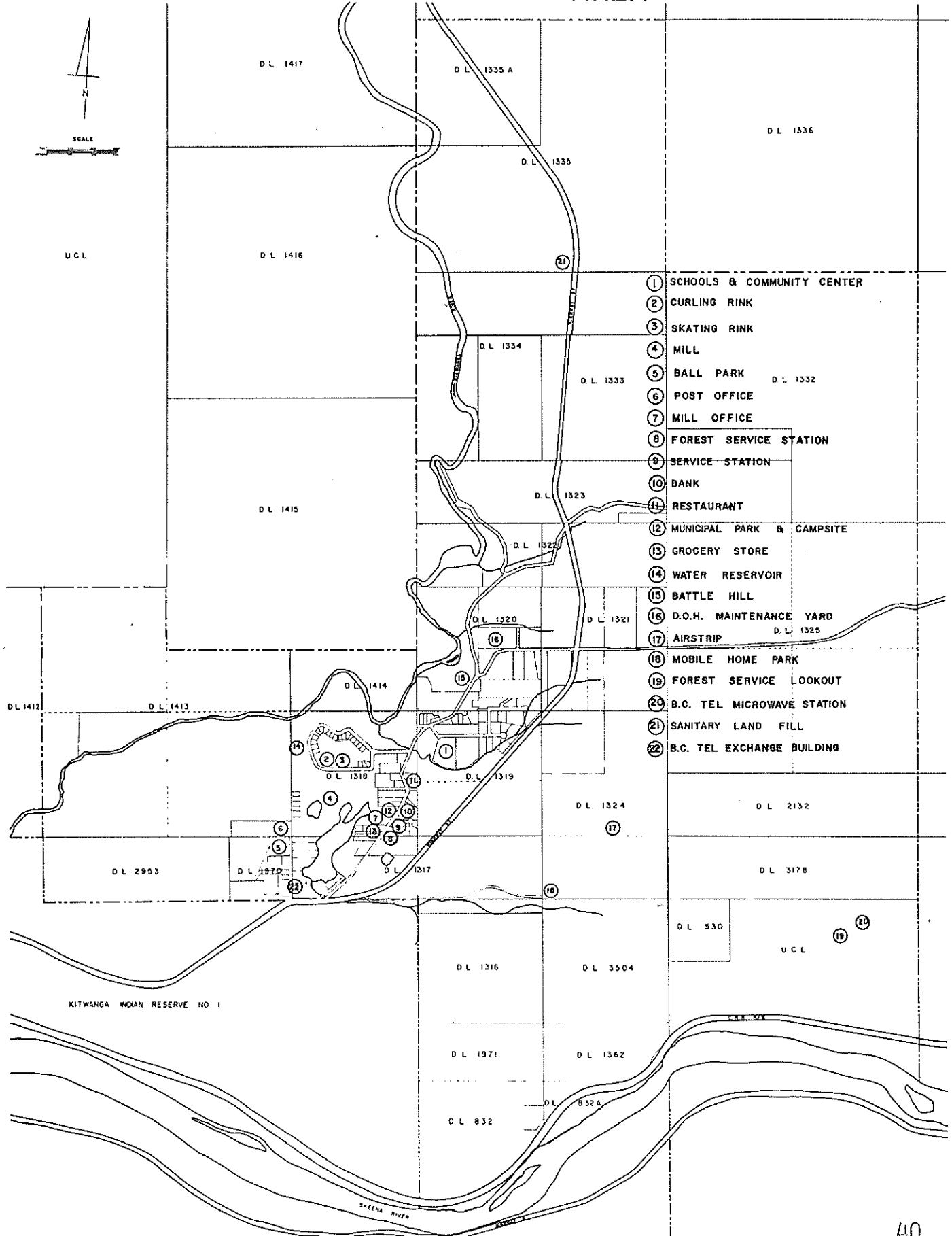
A definite shift in the focus of commercial and service activity had taken place by the end of 1950's. In addition to previously mentioned developments, a forest service station was opened in 1952, a church was built, and the post office relocated in 1956 from the Gitwangak village to the Kitwanga Valley. With these developments, a noticeable service center was emerging in the Southeast corner of D.L. 1318.

The completion of the Kitwanga-Hazelton Road in 1955 made easier access to and from the valley virtually year round. Outside recreation and shopping trips became more feasible. The upgrading of roads in the valley allowed many camp workers to live in the community and commute the 10 or so miles to the camps. With the increase in logging and service activities, fewer and fewer families were dependent on agriculture as the main occupation. Land uses reflected this tendency as residential subdivisions of about one acre in size were parcelled off for workers and their families engaged in the logging and service industries.

The increased dependency on machines in the logging industry required substantial capital expenditures to carry on a competitive milling operation during the early 1960's. This factor, the pressure from government to install chippers and burners, and the desire for workers to live in the community rather than at the logging sites motivated the amalgamation of 3 or 4 existing small mills to establish the Kitwanga Lumber Co. in 1963 at its present location on the north-west side of the mill pond.

Although the residential population of the community increased to some extent, there was no increase in service facilities since the service area population remained the same--they were merely relocated from the camps into the community. The increase in residential population occurred primarily south and west of the sawmill site in D.L. 1970, 1317 and 1318.

# MAP 6: MISCELLANEOUS FEATURES KITWANGA SETTLEMENT AREA



REGIONAL DISTRICT OF KITIMAT-STIKINE

Prior to the 1960's the community was dependent for light and heat on wood and coal oil, with the exception of a few buildings which were hooked onto the Doll's diesel generator. B.C. Hydro established services to the community in 1964.

In the 1970's, two major developments affected the evolution of settlement patterns in Kitwanga: the first was an intensification of forest related industry and the second may be the opening up of a new era and economic role for Kitwanga.

In 1970, construction of the Columbia Cellulose's mill was commenced in the Gitwangak Indian Village. Although the work force for the mill and bush operations is drawn from a larger area, there was a significant impact to the Kitwanga community. The Columbia Cellulose (now CanCel) subdivision, located in the north half of D.L. 1318, contains 12 houses. The population increased from 217 in 1971 to 377 in 1976, an increase of 160 persons, or 73%.

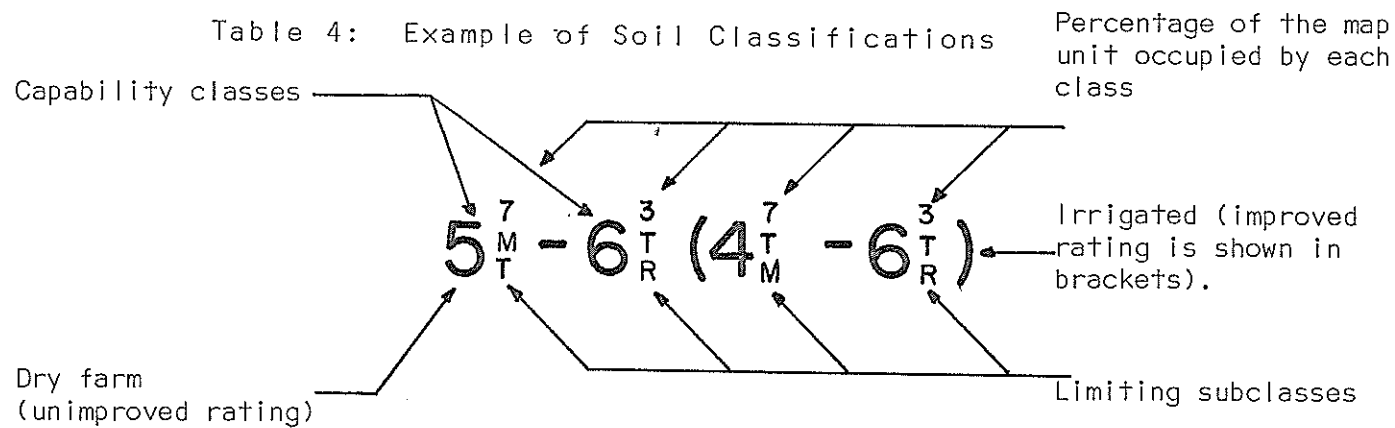
In 1975 the second major development in recent years was to affect Kitwanga. Whereas once the community was virtually isolated by the Skeena River and bad roads, the building of the bridge in 1975 and the upgrading of Highway 37 opened the community to an impact yet unknown. This two laned paved highway forms a junction with Highway 16 on the Gitwangak Indian Reserve on the south side of the Skeena River. Highway 37 goes north to Cranberry Junction, Stewart, Dease Lake, and connects onto the Alaska Highway.

The residents are already evidencing the effect of growth on the community dynamics. In terms of land use, a new school was built away from the service area to be more central to an anticipated residential area. The ease of access to larger and more diversified shopping and recreational facilities in Terrace, Hazelton and Smithers has, to an extent, influenced local merchants. The social patterns of interaction are beginning to change. Whereas in the past, the tightly knit community of interdependent individuals traded articles and exchanged labor, there is an increasing tendency to look beyond the local boundaries for exchange of goods and diversification of relationships. As one resident remarked, "It appears that the bridge has signalled an end to the barn raising days."

#### IV.5 SOILS & AGRICULTURAL CAPABILITY

The soil types in the Kitwanga Settlement area range from Class 3 to Class 7. The following information accompanies Map 4 and indicates the particular limitations to agriculture. The information has been extracted from Canada Land Inventory Charts.

- Class 3: Soils in this class have moderately severe limitations that restrict the range of crops or require special conservation practices. Under good management these soils are fair to moderately high in productivity for a fairly wide range of field crops adapted to the region.
- Class 4: Soils in this class have many limitations in that they are only suitable for a few crops, or the yield for a range of crops is low, or the risk of crop failure is high. The limitations may seriously affect such farm practices as the timing and ease of tillage, planting and harvesting and the application and maintenance of conservation practices. These soils are low to medium in productivity for a narrow range of crops but may have higher productivity for a specially adapted crop.
- Class 5: These soils have such serious soil, climatic or other limitations that they are not capable of use for sustained production of annual field crops. However, they may be improved by the use of farm machinery for the production of native or tame species of perennial forage plants. Some soils in Class 5 can be used for cultivated field crops provided unusually intensive management is used.
- Class 6: Soils in this class have some natural sustained grazing capacity for farm animals but have such serious soil, climatic or other limitations as to make impractical the application of producing perennial forage crops, and improvement practices are not feasible.
- Class 7: Soils in this class have no capability for arable culture or permanent pasture.



INFORMATION SOURCE: SOIL CAPABILITY CLASSIFICATION FOR AGRICULTURE  
CANADA LAND INVENTORY

[illegible]

The factors which limit the agricultural potential in the Kitwanga Settlement area include the following:

- M indicates soil moisture deficiencies attributable to soil and land
- P indicates a limitation to growth due to stoniness
- R indicates the restriction of the rooting zone by bedrock
- T indicates areas in which agricultural capability is limited by topography
- W indicates an excess of soil moisture other than caused by inundation.

There are six operational farms in the Settlement Area. None of these are full time occupations for the farmers. They work in other employment sectors to augment their income. The growing season is too short and produces only one crop a year. Two cattle ranches exist, but these are small operations due to the long winters and lack of cleared pastures.

#### IV.6 TOPOGRAPHY

The area contained within the boundaries of the Settlement area consists of rolling hills enclosed by steep mountains to the east and west. The valley lays in a north-easterly orientation enclosed by steep mountains to the north-east and south-west.

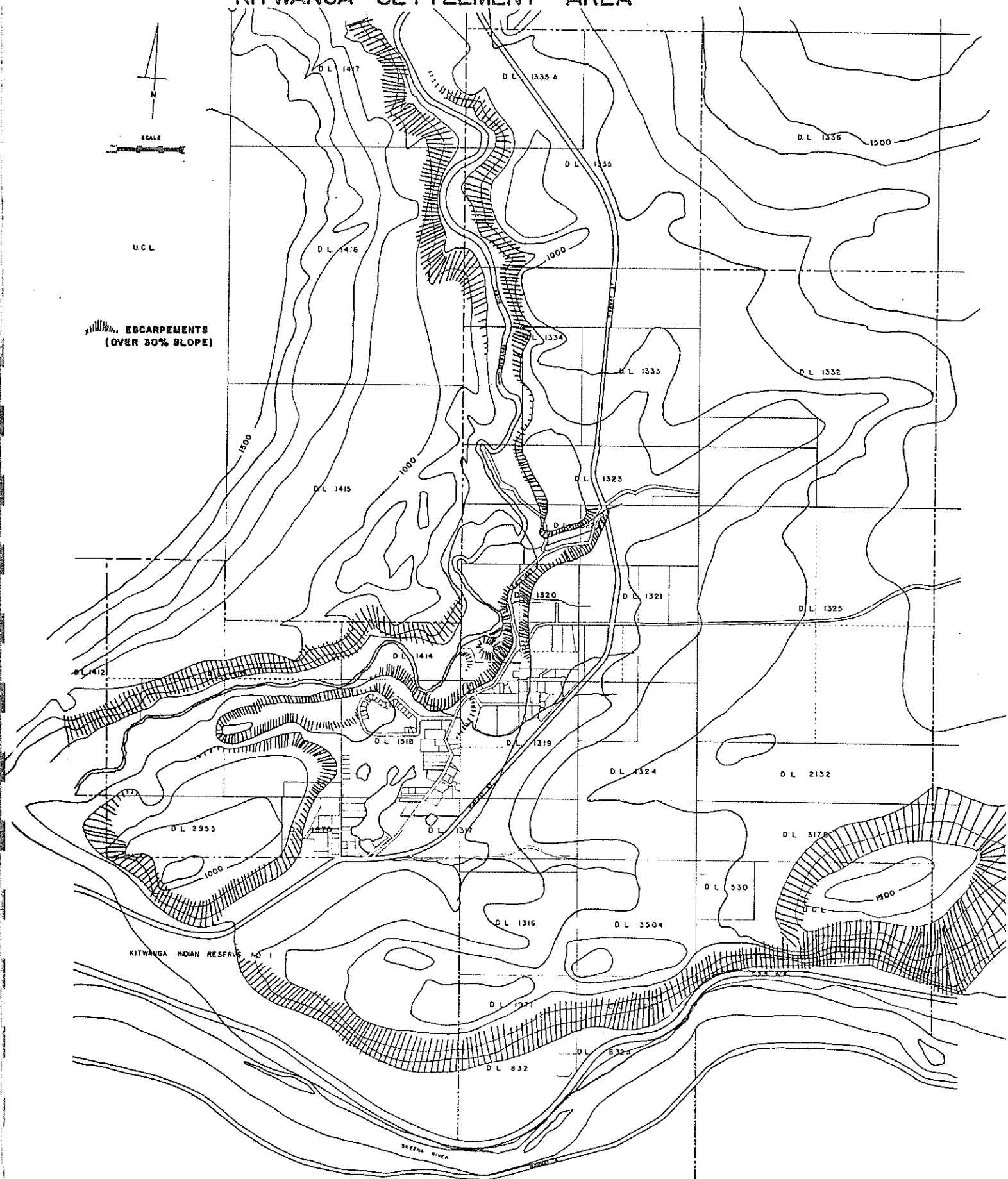
A number of small ponds are scattered throughout the main portion of Kitwanga and the larger Mill Pond is located parallel to the old Kitwanga Valley Road.

A mountainous rock outcrop located on D.L. 1316 and D.L. 3504 provides a physical barrier creating difficulty of access to the Skeena River, the C.N.R. tracks and the flatlands of D.L. 832.

The rolling terrain of the Kitwanga Valley is interspersed with steep escarpments and pockets with flat benches along the Kitwanga River. These pockets can range in size from a few acres to about forty acres in size.



# MAP 8 : TOPOGRAPHY KITWANGA SETTLEMENT AREA



#### IV.7 FOREST INDUSTRY

The forest industry provides the main employment base in Kitwanga. Two mills, Canadian Cellulose Co. and Kitwanga Lumber Co. are located in or near Kitwanga. The Kitwanga Lumber Co. has its mill located north-west of the Mill Pond and employs an average of 38 persons in its milling operation and 35 in its logging operations. The CanCel mill employs an average 120 persons in its milling operations and 85 in its logging operations. Employment in the logging operation is seasonal or temporary and the numbers employed fluctuate depending on numerous local and wider ranging factors. The CanCel Mill is located in the Gitwanger Indian Reservation. Employees of the two mills reside in the many communities surrounding the mills.

Table 5: Lumber Mill Employment and Production

	Average Number Employed	Estimated Annual Lumber Production in MBF	Net Volume Consumed in year by M <sup>3</sup>
CanCel	120	36,386,000	161,302
Kitwanga Lumber Co.	38	18,500,000	86,000

The Kitwanga Settlement Area is located in the Skeena Forest Region with headquarters presently in Prince Rupert. The Region roughly covers 124,000 square kilometers and is delineated into nine Forest Districts. Kitwanga is located in the Kispiox Timber Supply Area with district headquarters located in Hazelton. At present, the Forestry station in Kitwanga has a staff of five full time employees. The Forestry staff is presently in the process of re-organization and it is expected that Regional Headquarters will be relocated from Prince Rupert to Smithers and the employees of the Forestry Station in Kitwanga will be relocated to Hazelton.

The formulation of Forest Districts is intended to relate the Timber Supply Areas with the local milling operations in order to minimize transportation costs, stabilize prices and employment fluctuations, and to regulate the inventory of stands in the supply area. Statistics for the volume of timber supply in the Kispiox TSA were not available at the time of writing; the study to determine the supply, the milling capacity and the formulation of allowable cuts was on-going at the time. Preliminary indications however, are that the timber supply in Kispiox TSA exceeds the milling capacity and that expansion of existing operations may be possible in the short term future.

#### IV.8 EMPLOYMENT SECTOR

The employment sector statistics indicated in the table below indicates the employment base of residents in Kitwanga. Some employers such as CanCel, are not located in the settlement plan boundaries. Also, it is likely that some employees do not reside in the community. The table therefore is intended to indicate generally the employment base on which the community depends.

Table 6: Employment Sector

Canadian Cellulose Co.	
Kitwanga Division (Milling)	95
Kitwanga Lumber Co. (Milling)	38
Logging	105
Service:	
General Store	5
Service Station	3
Restaurant	2
Excavating	2
Independent	2
Sears	1
Public Sector - School	26
Forest Service	5
Police	2
Department of	
Highways	18
Post Office	2
Agriculture	6

The figures indicate the approximate number of jobs in each sector. They do not include temporary or part-time work. In the CanCel mill, for example, there are 120 employees for 95 jobs in the milling operation. In addition to the 18 permanent jobs on highways maintenance, there is seasonal work for summer projects. The number employed in the agricultural sector represents the number of operational farms in the settlement area. Farming is not a full time occupation for any of these farms; the farmers usually have other jobs to augment their income.

#### IV.9 KITWANGA SCHOOL

The Kitwanga Elementary Junior Secondary School consists of 14 classrooms in two main buildings plus four portable classrooms. There is also a combined gymnasium/auditorium with a community hall upstairs. There are two kindergarten classes, one is located in the old school building beside the mill pond and the other is in the Gitwanga Indian Village. The Elementary portion was opened in 1975 and the Junior Secondary portion was added to the complex in 1979.

In the 1979/80 session the school had an enrollment of 263 students from kindergarten to grade 10. The number of students in each grade is indicated in the table below.

Table 7: 1979/80 School Enrollment

Kindergarten	20
Grade 1	29
2	30
3	29
4	23
5	23
6	21
7	21
8	34
9	15
10	<u>18</u>
TOTAL	263

For the 1980/81 session, grade 11 was added to the curriculum. The enrollment is expected to reach 330 during this session.

During the 1979/80 session there were 22 teachers, one half-time secretary and three persons for maintenance and custodial work employed at the school.

The school is a focal point for the four communities of Kitwanga, Gitwanga, Kitwancool, and Cedarvale. Approximately 20% of the students come from Kitwancool, 30% from Gitwanga, less than 10% from Cedarvale, and the remaining 50 - 60% from Kitwanga. About half of the students are native Indians.

The school site consists of roughly 12 acres of land. The site is typical of the rolling terrain of the Kitwanga Valley and the school is located on one of three benches terraced into the hill. An additional five acres adjoining the site has been proposed for inclusion into the school grounds.

#### IV.10 DEMOGRAPHIC CHARACTERISTICS

##### A. Population

Table 8: Population

	<u>1971</u>	<u>1976</u>
Kitwanga <sup>(3)</sup>	217	377
Gitwangak Indian Reserve	233	303
Enumeration Area <sup>(4)</sup>	452	666

The population of Kitwanga increased from 217 in 1971 to 377 in 1976. This represents an average annual increase of roughly 12% per year between 1971 and 1976.

In comparison, the Regional District of Kitimat-Stikine grew at a rate of 0.7% per annum during the same period. Kitimat grew at an average annual rate of 1.6%.

Average annual population increase for Terrace during the period 1961-1971 is estimated at 3.7%. The average increase for Kitwanga during the period from 1961-1976 is roughly 8.9%.

##### B. Household and Family Characteristics

Table 9: Persons per Household<sup>(5)</sup>

	<u>1966</u>	<u>1971</u>	<u>1976</u>
Kitwanga Valley <sup>(6)</sup>	3.2	3.6	3.7
Gitwangak Indian Reserve		5.2	4.8
Reg. Dist. Kit.-Stikine	4.0	4.1	3.8
British Columbia	3.3	3.2	2.9

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(3) Population statistics for Kitwanga are estimated since formal boundaries did not exist at the time of census.

(4) Population for the enumeration area includes Kitwanga but excludes the Indian Reserves. The enumeration area includes Kitwanga Lake on the north, Seely Lake on the east to Cedarvale on the west.

(5) A single person is a household, but a single person is not a family.

(6) Household and family characteristics have been derived from enumeration area statistics.

Table 10: Families by Number of Persons

	Total HHD	1	2	3	4	5	6	7	8	9+	Total Persons	Average
1971	100		25	15	25	15	10	5	-	5	410	4.1
1976	150		40	25	55	10	10	5	-	5	573	3.9

Table 11: Average Family Size<sup>(7)</sup>

	1966	1971	1976
Kitwanga Valley	3.8	4.1	3.9
Kitwanga Indian Reserve		5.3	4.3
Reg. Dist. Kit-Stikine	4.1	4.1	3.8
British Columbia	3.6	3.5	3.3

Household and Family Characteristics<sup>(7)</sup>

- The average household size (Table 9) in the enumeration area which includes Kitwanga has increased from 3.2 persons per household in 1966 to 3.7 persons per household in 1976. By comparison, the average household size in the Regional District and in B.C. has been declining. Whereas in 1966 the household size was comparable to the B.C. average (3.2 and 3.3 p.p.h), the average household size in 1976 is considerably higher; however, the average household size in 1976 although higher, is comparable with the average household size of the Regional District.
- The average family size (Table 10) in the Kitwanga Valley has remained fairly stable at roughly 4 persons per family during the period 1966 to 1976. Average family size in the Regional District has declined from 4.1 to 3.8 persons per family. The average family size has declined in B.C. from 3.6 to 3.3 persons per family.

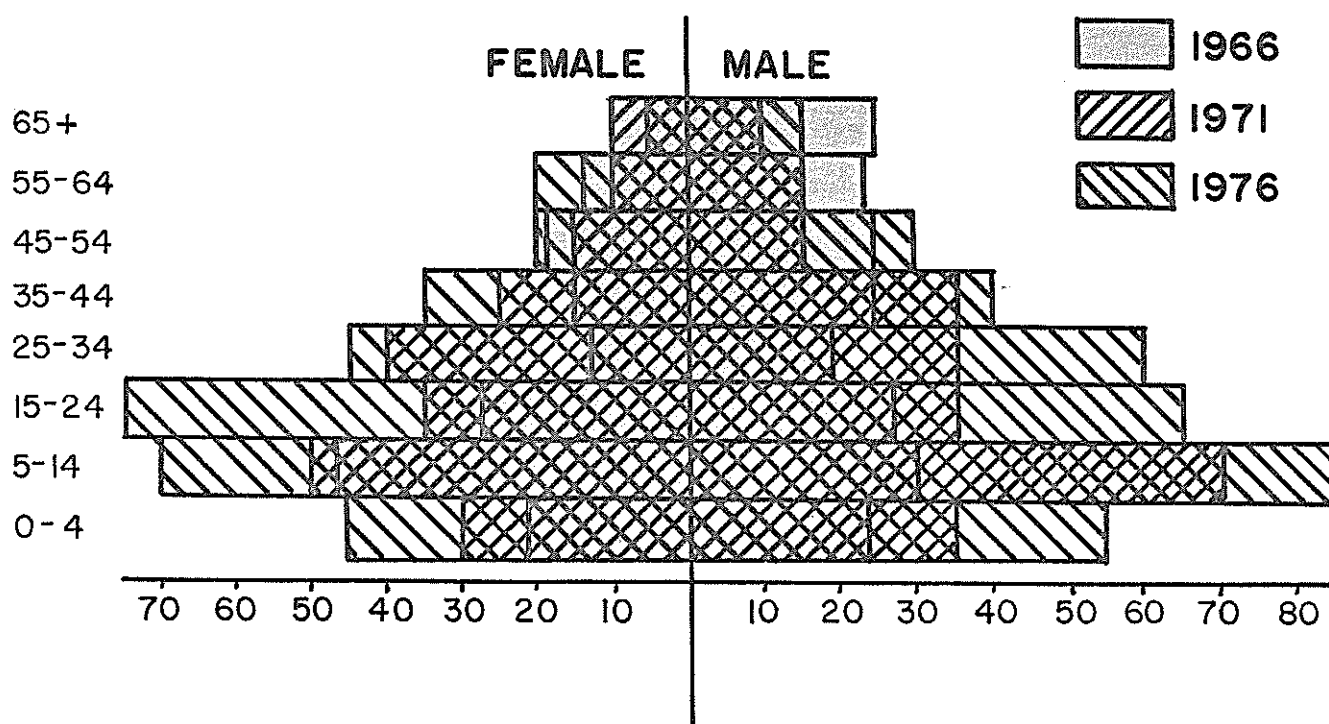
<sup>(7)</sup> Household and family characteristics for the Kitwanga valley are derived from enumeration area statistics which also include a number of other communities.

# C. Population by Age and Sex

Table 12: Population Composition by Age and Sex

	1966			1971			1976		
	M	F	Total	M	F	Total	M	F	Total
0-4	24	21	45	35	30	65	55	45	100
5-14	30	47	77	70	50	120	85	70	155
15-24	27	27	54	35	35	70	65	75	140
25-34	19	13	32	35	40	75	60	45	105
35-44	24	15	39	35	25	60	40	35	75
45-54	24	19	43	14	15	30	30	20	50
55-64	23	14	37	15	10	25	15	20	35
65+	25	10	35	10	10	20	15	5	20
	196	166	362	250	215	465	365	315	680

Table 13: Population Profile



-The population of males and females over 45 years of age declined between 1966 to 1971.

-In 1966, the age categories were balanced with the exception of 5-14 aged females. By 1976, there is a considerable increase in persons under 35 years of age. The largest increase in population occurred in the 5-14 aged males and 15-24 aged females.

-The age composition statistics indicate a large portion of the population segment are middle aged or younger with school aged children.

-The age composition profile of the enumeration area is similar to the Regional District profile in that major population segments are concentrated in the under 35 population.

Table 14: Marital Status (total population)

	1971				1976			
	M	F	Total	%	M	F	Total	%
Single	150	100	250	56%	190	150	340	52%
Married	90	95	185	41%	150	145	295	45%
Widowed	-	10	10	2%	-	10	10	1%
Divorced or Separated	5	-	5	1%	10	5	15	2%
TOTAL	245	205	450	100%	350	310	660	100%

-There has been an increase in the percentage of married population from 41% in 1971 to 45% in 1976.

-There has been a decrease in the percentage of single males from 61% in 1971 to 54% in 1976. The under 24 males during this period was constant at 56%.

-The percentage of single females was similar for 1971 (49%) as for 1976 (48%). The percentage of females under 24 increased during this period from 53% to 60%.



#### IV.11 HOUSING COMPONENT<sup>(8)</sup>

Table 15: Dwellings by Period of Construction

Date of Construction	No. of Dwellings Units	% of Total D.U.
before 1946	25	14%
1946-50	10	6%
1951-60	35	20%
1961-65	25	14%
1966-70	40	23%
1971-76	<u>40</u>	<u>23%</u>
TOTAL	175	100%

Table 16: Dwellings by Type

	Single Detached	Single Attached	Mobile	Total
1971	95	5	15	120
1976	115	5	50	175

Table 17: Dwellings by Tenure

	Total Occupied Dwellings	%Owned	%Rented
1971	120	54%	46%
1976	175	67%	33%

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(8) Statistics for housing components are derived from enumeration area information. The enumeration area includes a number of small unorganized communities including Kitwanga, as well as dispersed settlements.

- Since 1951, an average of 20% of the existing dwelling units in the enumeration area of which Kitwanga is a part, has been constructed in each 5 year period. This represents 4% average increase in dwelling units per year.
- Single detached housing is the main housing form in the Kitwanga area with roughly 66% of total dwelling units being in this category.
- There has been a significant increase in mobile homes in the period 1971 to 1976. In 1971 mobile homes comprised 12.5% of total dwellings as compared with 28.6% in 1976.
- There has been an increase in the proportion of owner occupied dwellings with 54% of total occupied dwellings being owner-occupied in 1971 as compared to 67% in 1976.

#### IV.12 POPULATION PROJECTIONS

Population estimates by long time residents of the Kitwanga community indicate the following estimates for 1910, 1930, and 1950. Population counts for the community were taken by Statistics Canada beginning in 1971.

Table 18: Population Growth 1910-1976

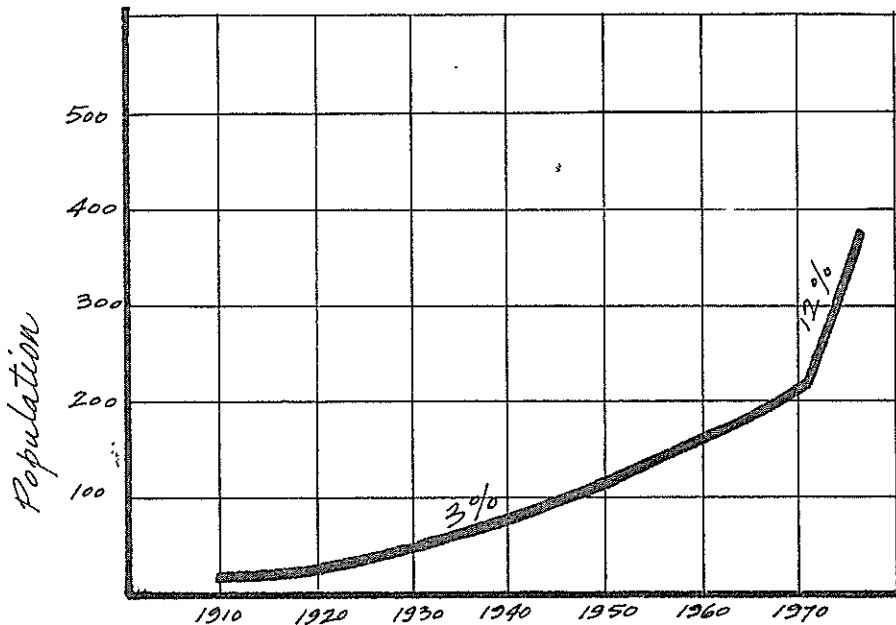


Table 19: Population and Housing Trends 1910-1976

Date	Estimated Population	No. of Occupied Dwelling Units	Persons/household
1910(9)	15	8	
1930(9)	50	27	1.9
1950(9)	120	32	3.75
1971(10)	217	60	3.6
1976(10)	377	102	3.7

- 
- (9) Population and number of occupied dwelling units have been estimated from discussions with local residents.
- (10) Population has been derived from Statistics Canada information; persons per household was derived from larger enumeration area which includes the Kitwanga Valley.

During the interval from 1971 to 1976, the population increased at an average annual rate of 12% per year. This increase in growth is attributed to two significant events during this period.

1. the construction of the CanCel mill, and
2. the construction of the bridge and Highway 37

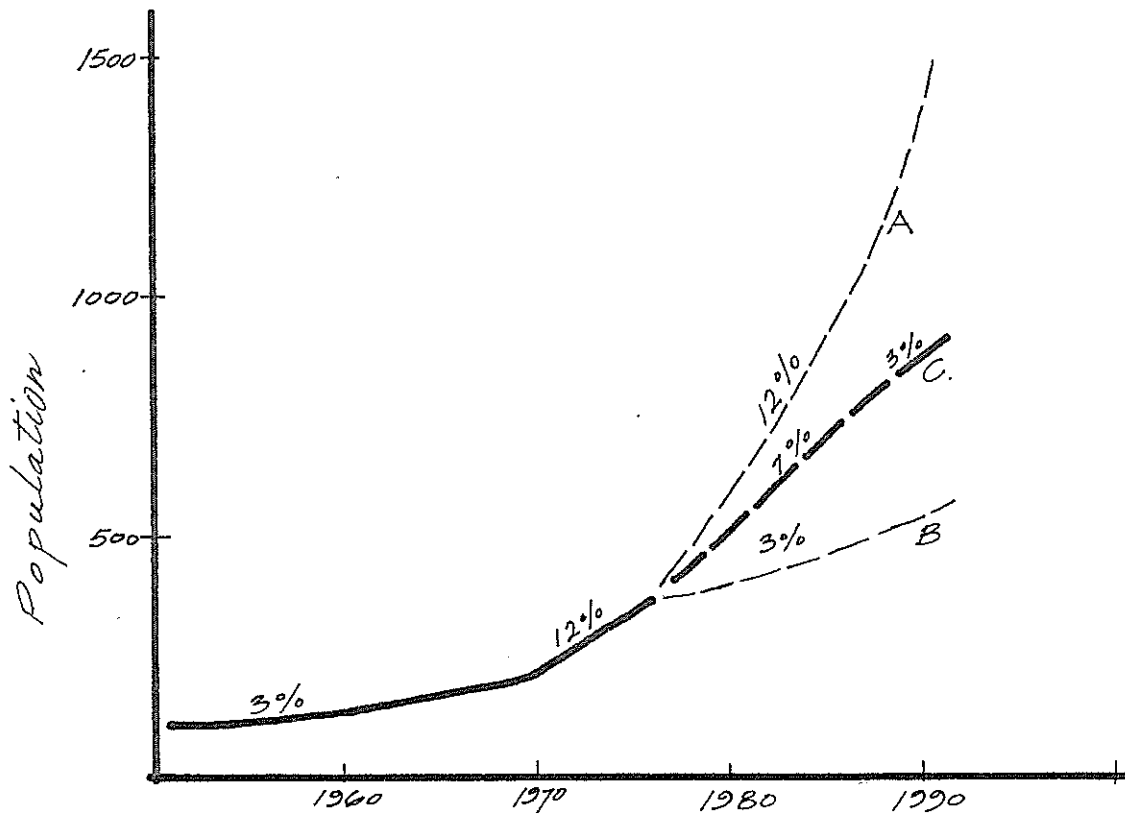
In projecting growth for purposes of future land use designations, it is questionable whether a figure of 3% per annum or 12% per annum should be used. If the two recent events are exceptional circumstances, then the figure of 3% would be reasonable; however, these events represent changes to the community which will influence its growth. The construction and operation of the CanCel mill affects the number of persons employed in logging operations and increases service sector employment. Highway 37 has increased the tourist traffic through the community and this is likely to affect the service sector employment and population base of the community.

If, on the other hand, the recent average growth of 12% per annum were to be used, it would infer that significant events such as those experienced between 1971 and 1976 would be common events likely to continue occurring in the future, or that the impact of the two events will continue at the same rate for the short term future.

For purposes of projecting land use, neither the 3% long term growth, nor the 12% growth experienced between 1971 and 1976 was considered appropriate for the Settlement Plan time frame of 5 - 10 years. Numerous factors presently unknown could influence the growth during this period. Therefore, some assumptions were made in establishing a projection. These are as follows:

1. For a community with a population base of less than 500 persons, any significant project in the vicinity would have a major impact on the community. No such changes are foreseeable at this time.
2. There may be a slight increase in the forest related industry but the extent is unknown since studies on the Timber Supply area are incomplete.
3. An increase in tourist oriented service sector is anticipated due to construction of Highway 37 but the extent of service sector build-up in Kitwanga depends on the type of facilities provided in the adjoining community of Gitwanger which is located at the junction of Highway 16 and Highway 37.

Table 20: Population Projections 1976-1990



Projection A: 12% per annum from 1976  
 B: 3% " " " 1976  
 C: 12% p.a. from 1976 to 1980  
       7% p.a. from 1980 to 1985  
       3% p.a. from 1985 to 1990

The projection indicated on Table 20 as Projection C was assumed for purposes of land use designation. This projection assumes a 12% growth rate to continue from 1976 to 1980. Counts of housing stock in 1980 indicates a close correlation between projected growth rate and actual counts. From 1980 to 1985, a growth rate of 7% per annum was estimated to reflect moderate increase in forest related operations. The growth rate is estimated to return to the long term stable growth rate of 3% per annum from 1985 to 1990.

#### IV.13 HOUSING PROJECTIONS

Estimates for future housing and residential land requirements are based on the assumed population projection C indicated on Table 20. The persons per household figure of 3.5 was assumed even though trends within the area indicate an increasing household size because:

1. trends indicate a decreasing household size in the region and province, and
2. the provincial average of 2.9 persons per household is considerably lower than the 3.7 persons per household in Kitwanga.

Table 21: Housing Projections

	Population	Persons/Household	No. of Households
1971	217	3.6	60
1976	377	3.7	101
1981	567	3.5	162
1986	795	3.5	227
1991	922	3.5	263

Should the community grow at the projected rate, there would be a significant increase in housing stock required to accommodate the population increase. The Settlement Plan establishes a time frame of 5 - 10 years for land use projections. A Settlement Plan review of objectives, policies, and land use designations should be conducted earlier if growth occurs faster than anticipated. The projections beginning from 1976 indicate that a 60% increase in housing stock could occur over the next 5 years. A count of housing stock in 1980 indicates that there are 148 dwelling units existing or under construction.

The projections indicate that about 80 additional units will be required from 1980 to 1986 and 115 units to 1991. This represents roughly 8 - 12 units per year for the next eleven years.

A count indicates 20 residential and rural lots presently available in Kitwanga. Larger acreages in the presently built up portion could be further subdivided into smaller lots, thus accommodating housing needs for the short term future (roughly 4 - 6 years).