

City of Fort Yukon



1996 Comprehensive Plan

City of Fort Yukon
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Community of Fort Yukon Comprehensive Plan

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P.O. Box 269
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Acknowledgments

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- ◆ the City of Fort Yukon
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Preface

Comprehensive Plans serve many purposes. Although they have certain elements in common, each plan is designed to meet the particular needs of the community. Sometimes they are looked at briefly and put on the shelf, as the planning grant is closed out with the Department of Community & Regional Affairs. Sometimes, however, an enterprising City Council or non-profit organization discovers something of value, and puts the plan to good use. In planning terms, this is called "implementation".

Fort Yukon's plan serves many purposes, and has many potential uses. First, it updates important background, demographic and economic information useful to both the public and private sector. Second, it follows the lead taken by Native Village of Fort Yukon and the Council of Athabaskan Tribal Governments by suggesting ways to achieve a sustainable economy compatible with the local culture. Third, the plan summarizes the latest information on several recent issues of importance to the community, such as the potential for natural gas as an energy source. Fourth, the plan closely examines federal requirements that the City must follow now that the levee construction project is complete. Specifically, a development permit is now required for construction within the floodprone area of town. Fifth, the plan will be extremely useful as documentation for a wide variety of grant and funding programs.

This plan should receive wide distribution to state and federal agencies, as well as the private sector. State and federal legislative delegations should receive a copy. Once adopted, agencies will give this plan considerable weight in their decision-making.

A comprehensive plan does not solve every problem, nor does it fully examine any single issue. The intent is that by providing an overall guide to land use and development issues, decision-makers will make more informed decisions, and more carefully weigh the impacts of their decision on the entire community. This plan should be followed by more detailed feasibility studies and development plans in many areas.

One issue not resolved in this plan is the future of the city's liquor store. This is a vexing issue which can only be resolved by the community.

Finally, Fort Yukon's Comprehensive Plan is more than just this document. This report is the combined effort of the best leaders and decision-makers in the community working together for more than a year. If all these diverse organizations continue to work together, this plan will be a success, and Fort Yukon's future assured.

Fort Yukon Comprehensive Plan

Public Hearing Draft

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Chapter 1

Summary

Fort Yukon is an extraordinary community. Established in 1847 by the Hudson's Bay Company, it is the largest Athabaskan Indian village and one of the oldest settlements in the State of Alaska. The Gwich'in Athabascans have inhabited the Fort Yukon area for thousands of years. The Gwich'in People refer to the village as Gwitchyaa Zhee (house on the Flats). Fort Yukon lies eight miles above the Arctic Circle, about 140 miles northeast of Fairbanks at the northernmost point of the Yukon River.

This document is the Community of Fort Yukon's Comprehensive Plan. It is designed to serve as a guide for residents and decision-makers concerning the overall direction of the community regarding land use, economic development, protection and enhancement of the subsistence lifestyle, improvements to utilities and infrastructure, for transportation and for flood and erosion hazard mitigation.

This plan is intended for several audiences:

- ♦ the City Council and city administration -- this plan provides a guide for the City of Fort Yukon as it considers important questions of land use, economic development and the future growth and direction of the community.
- ♦ other leadership organizations -- the Native Village of Fort Yukon (NVFY), Council of Athabaskan Tribal Governments (CATG), Gwitchyaa Zhee Corporation (G-Z Corporation), the Yukon Flats School District and several other organizations each contribute to the betterment of the community. This plan is designed to help coordinate everyone's efforts, and all organizations are encouraged to use this document as an action plan.
- ♦ the business community -- economic development depends on the private sector. This plan contains important information useful for economic development.
- ♦ state and federal agencies -- Fort Yukon depends upon the cooperation of many state and federal agencies for a wide variety of grants, loans and capital projects. This plan was funded by a grant from the Alaska Department of Community & Regional Affairs.
- ♦ the general public -- the public has been very helpful in developing background information and the plan itself. Good community activism is an essential part of helping to build a better future.

Public Participation

Preparing a Comprehensive Plan for one's community is a significant responsibility. City Council's are often reluctant to set long-term goals, policies and a vision without considerable public participation in the process of preparing the plan. A community's Comprehensive Plan must reflect the needs, values and true feelings of local residents, or the document and the planning effort are likely doomed to failure.

This plan has taken almost one year to develop. The consulting team has spent considerable time in Fort Yukon working with city staff and community leaders. The team has taken special care to involve members and major organizations in Fort Yukon. Interviews have been held with representatives of the City, the Native Village of Fort Yukon, Gwitchyaa Zhee Corporation, the Council of Athabascan Tribal Governments, the School District, and other organizations, agencies and businesses. Other plans and reports have been reviewed and incorporated, as appropriate, into this document. A bibliography can be found at the back of this document.

In addition, the team is working with an Advisory Committee to develop the overall direction of the plan. This group met in June, October and December 1995. They identified the communities strengths, areas needing improvement, important issues for the Comprehensive Plan, and offered overall suggestions regarding which organization in town is best suited to take the lead for each issue. The Advisory Committee identified the following community strengths and weaknesses:

Community Strengths

- ◆ The most important characteristic about Fort Yukon is it's good people
- ◆ People are interested in the community
- ◆ People have a strong sense of history
- ◆ Residents have important traditional skills
- ◆ People are becoming more active and involved in local affairs
- ◆ Fort Yukon has a good location, at the confluence of two rivers
- ◆ Fort Yukon is the regional center for several villages
- ◆ We have a local radio station
- ◆ The School District headquarters is located here
- ◆ The University of Alaska has a branch here
- ◆ The clinic is excellent; the best in rural Alaska
- ◆ We like the climate; summers are real summers; the winters are real winters
- ◆ Cultural values are important
- ◆ We are close to outdoor recreational opportunities
- ◆ We enjoy a subsistence way of life
- ◆ The town is far off the highway system
- ◆ Sand and gravel for construction is found nearby
- ◆ The Vocational Education center is an example of cooperation between City, the School District, Native Village and other groups.
- ◆ Fort Yukon is a regional government center; people are its most important resource and consumers of services
- ◆ The community has many important cultural and seasonal events, including the spring carnival, summer agricultural fair, community Christmas party, the sharing of traditional foods between Christmas and New Year's, and traditional Native potlatches.
- ◆ The Northern Lights are spectacular

Challenges: Problems: Things People Would Change

- ◆ Fort Yukon suffers from excessive dependence on alcohol and substance abuse.
- ◆ Like many rural communities, Fort Yukon has too much crime and family violence.
- ◆ Teenage pregnancies are a continuing problem.
- ◆ The town needs a program to license local drivers. The nearest Department of Motor Vehicles (DMV) office is in Fairbanks.
- ◆ Need a program to provide state identification cards; these are needed for employment and other purposes. Again, the nearest DMV office is Fairbanks.
- ◆ The town needs a jail. The single holding cell is not adequate, and is limited to one prisoner. Male and female prisoners can't be in the same cell.
- ◆ The major social service and public safety organizations -- police, fire, EMT, clinic and social services -- need to better coordinate their efforts.
- ◆ All organizations in town need to better communicate together.
- ◆ If Fort Yukon had a customs agent, the town would be a point of entry from Canada.
- ◆ Public safety needs more funding and training.
- ◆ The lack of dependable infrastructure hampers private economic development. The city needs a citywide sewage collection and treatment system, for example.
- ◆ The requirements of ANCSA Section 14(c)(3) puts a cloud on title and discourages development.
- ◆ The town needs a Community Hall, including a library, public laundromat and showers, and concessions operated by young people in order to gain business experience.
- ◆ 110 volt AC power not dependable throughout town. The main distribution line is too small.
- ◆ The Museum needs to be reopened and operated for the benefit of both local culture, and as a centerpiece for tourism.
- ◆ The educational system needs to be more responsive to local needs.
- ◆ Fort Yukon's political influence in the state legislature is diluted by the large size of its legislative district.
- ◆ Road dust is a major health hazard.
- ◆ Family violence is too prevalent.
- ◆ The city liquor store provides important revenue, but contributes to alcohol abuse. Are there any incentive grants to replace lost income if the liquor store is closed?
- ◆ Pro-active, preventative health education needed.
- ◆ Pro-active, preventative dental health programs are needed.
- ◆ Elder services need to be coordinated.
- ◆ Unregulated fuel stockpiling is dangerous.
- ◆ Summer and winter blends of fuel are used at the wrong time of year causing problems.
- ◆ The City has a lack of technically trained people to run city systems.
- ◆ Dependency on public welfare programs by many people stifles initiative. Welfare checks discourage many from working. One manager reported he can't afford to pay wages as high as the "mailbox money".
- ◆ Gambling addiction is a problem.
- ◆ Families need to take more responsibility. Better parental training and education is needed.

- The community needs a senior respite facility - Elders should not have to die in Fairbanks or Tanana.
- The viability and use of the Gwich'in language is essential for our culture.
- Cemeteries and graveyards need to be maintained.
- Need consensus and more trust among everyone.
- The town needs a better water source.
- Transplanting woodland buffalo from Alberta to the Yukon Flats is under consideration by the U.S. Fish & Wildlife Service, the Alaska Dept. of Fish & Game, and local organizations.
- People should spend more money locally; instead they go to Fairbanks for many basic services which are need here; examples include a bank, barber shop, small engine repair shop and many other cottage industries.
- The recent school fire might have been prevented if the volunteer fire department had equipment such as breathing apparatus. A lack of funding for fire protection is unacceptable.
- Waste disposal is a major problem.

The Advisory Committee recognized the good work performed by each organization in town, that the key to success was for everyone to work more closely together, to communicate and to coordinate their efforts.

One idea from the Advisory Committee is to establish a community-wide, regular newsletter. It would provide a communications device to publicize and coordinate events, programs and ongoing initiatives by the city, Native Village of Fort Yukon, G-Z Corporation, the School District, CATG, University of Alaska, and private business.

In addition to distributing the newsletter to all local residents, the publication could also reach other villages in the region, and a large number of private, state and federal organizations and agencies in Fairbanks, Anchorage and Juneau. The objective is to keep Fort Yukon and it's initiatives clearly visible in the minds of agencies. The newsletter would help create a sense of stability, cooperation and self-reliance, which is essential if the community is to compete favorably for limited public funds in the future.

NVfy publishes a monthly newsletter (Dinjii Zhuh Gwandak Deh'lyaa) to its members to inform them of various community events to be held in the near future. Other groups may also be publishing newsletters. *These efforts should be combined, if possible, into a single publication. With the combined force of the city and all major organizations in town, this publication could resemble a regional newspaper in a short time.*

This Comprehensive Plan contains the following chapters:

- Chapter 1, Summary and Strategies
- Chapter 2, Background for Planning
- Chapter 3, Economy and Population
- Chapter 4, Land Use
- Chapter 5, Public Facilities and Services
- Chapter 6, Transportation

Summary of Findings and Recommendations by chapter:

Chapter 2, Background for Planning

This chapter presents a history of the community, and discusses environmental factors important for planning. Most residents of Fort Yukon are part of the larger Gwich'in Athabascan population of Alaska, who occupy about 55,000 square miles of territory along the Yukon River drainage. The community of Fort Yukon was established in 1847 as a Hudson's Bay Company outpost near the confluence of the Yukon and Porcupine Rivers about eight miles north of the Arctic Circle. The climate of the region reflects long, harsh winters and warm short summers. The Yukon Flats has an area of 13,700 square miles, and is characterized by meandering river channels, oxbow lakes, and ample habitat for a wide variety of fish, game and other subsistence resources. Almost all the Fort Yukon townsite is subject to flooding, except the eastern portion of town called Crow Town.

Chapter 3, Economy and Population

Fort Yukon is the largest community in the Yukon Flats, and serves as a regional center for several other Athabascan villages. The current population is 663 persons. Since 1990, the average annual growth rate has been 2.7%. If this rate of growth continues, the town's population would rise to 865 in 2005 and 1,129 persons in 2015.

The economy is a mixture of subsistence resource use, government funded employment and private sector activities. Most cash employment is government-related, and seasonal in nature. Major employers include the City of Fort Yukon, Yukon Flats School District and organizations such as the Native Village of Fort Yukon. The largest private sector employer is Gwitchyaa Zhee Corporation, which owns G-Z Utilities. Twelve businesses pay sales tax to the City. Subsistence remains a vital part of the economy, and traditional culture. Trapping provides some cash income during winter months. Unemployment is significant, and the cost of living is much higher than in urban areas.

Given declining state and federal funding, the City of Fort Yukon will face increasing pressure to find alternative means of funding and supporting local public services. The City, NVFY, CATG and other organizations are extremely successful in obtaining state and federal grant funds to support a wide variety of important social and economic programs. They are to be commended and fully supported; without their effective leadership, the local economy would be in a considerably worse condition.

The key for Fort Yukon is to continue to pursue an economic development strategy which is in harmony with Athabascan culture and traditional lifestyles. Development should be compatible with subsistence, provide training and opportunities so that people have choices regarding their future, provide enough jobs and income to give people opportunity for advancement, and give children the real option to remain in the community after their grown.

This chapter highlights initiatives and ideas for improving the local economy, reviews efforts made by the Native Village of Fort Yukon, looks at ideas for expanding tourism opportunities, for providing training in basic business, and examines sources of public and private funding and technical assistance.

Tourism offers considerable potential for Fort Yukon. *The community should take advantage of its name recognition, location, access by air, Native culture and historic attractions, overnight lodging and experience with visitors. The plan recommends the community establish a central interpretive facility and visitor center, and work to re-establish the local museum.*

Chapter 4, Land Use

Land use in Fort Yukon is governed to a large extent by the natural environment. The Yukon Flats provides a bounty of subsistence resources which sustains traditional Athabascan values. The town's historic location along the Yukon River provides opportunities for waterborne resupply, year-round surface travel routes and seasonal fishing. Flooding and erosion hazards posed by the Yukon and Porcupine Rivers have been reduced for much of the town by the completion of a series of dikes and earthworks. Fort Yukon has a well defined town center with a mix of residential, commercial and limited industrial activities. The recent transfer of lands from G-Z Corporation to Native Village of Fort Yukon should help safeguard traditional lands for future generations. The pending completion of ANCSA Section 14(c)(3) negotiations should allow more land to be developed for housing and other important community uses.

The Land Use Plan emphasizes the importance of settling overdue Section 14(c)(3) claims. Until these claims are resolved, title to considerable land within the city is clouded, and development projects will remain on the drawing board. All parties recently established a working committee to resolve these claims; a very encouraging step.

Land use is profoundly affected by the city's vulnerability to ice jams and flooding. The Federal Emergency Management Agency and the State Division of Emergency Services funded the construction of a series of levees to protect low lying areas of the community. *As one of the grant conditions, the City has begun a Development Permit program. Anyone building within the City must first obtain a permit from the City office.* All new or remodeled structures must be elevated above the "base flood elevation" (439.5 feet above mean sea level). This height is posted around town on metal signs attached to utility poles.

Developing new residential subdivisions out of the flood danger area is a high priority for future land use. The town is also concerned about environmental health, and this chapter summarizes the latest efforts of the U.S. Air Force to identify and remediate pollution and contamination at the Long Range Radar Site. *The community should closely monitor results of the final study to be issued in December 1996, and pursue full explanations to any remaining unresolved questions or issues.* This chapter also reviews efforts by the Air Force to expand the use of Military Operating Areas (MOA's) near Fort Yukon.

Chapter 5, Public Facilities and Services

This chapter describes the roles and responsibilities of the City of Fort Yukon, Native Village of Fort Yukon, Council of Athabascan Tribal Governments, and other civic and service organizations. It also provides an overview of city utilities and public services.

The City recently identified its Capital Improvement Projects List for FY 1996:

- ◆ Community Center - \$200,000 estimated cost
- ◆ Fire Protection Upgrades - applied for \$70,000 grants
- ◆ Tourism Development - Northern Lights Center
- ◆ Road Improvements - \$318,000 estimated cost
- ◆ New Landfill - Village Safe Water has an estimated \$80,000 grant for a feasibility study
- ◆ Dust Control
- ◆ Sewer System Feasibility Study
- ◆ Elderly Housing
- ◆ Mental Health Facility
- ◆ Clinic Facility Phase II

The city's sewer and solid waste facilities and systems are inadequate, and need to be upgraded. The State of Alaska's Village Safe Water program is funding a feasibility study to examine options for designing and upgrading the community's sanitation systems. The budget is estimated to be around \$100,000 and work should be underway in early 1996. *This is an excellent development, and should be fully supported by the community.*

A recent study on *Natural Gas Feasibility for Rural Communities* (polarconsult alaska, inc.) suggests that the potential exists for natural gas near Fort Yukon which could be tapped as a primary energy source for the community. During 1994, the United States Geological Survey drilled a scientific fully-cored hole near Fort Yukon. A bed of coal greater than twenty nine feet thick was encountered below 1,200 feet. The hole was abandoned due to the risk of gas blowout before reaching the base of the coal. Lab results showed evidence of natural gas. The report estimated that, if found, commercial gas to heat Fort Yukon could be developed for about \$5.1 million. Barrow is the only rural community in Alaska which relies on natural gas as its main source of energy.

The Comprehensive Plan fully supports an aggressive follow-up to the polarconsult report. The community should:

- ◆ *invite the consultant to Fort Yukon for a briefing with the community*
- ◆ *encourage community debate to arrive at a consensus on what action to take next*
- ◆ *ensure the study is distributed to the Governor, legislative representatives and the Congressional delegation for their information*
- ◆ *if the community likes the idea of natural gas, seek funding to support a full-fledged exploratory drilling program.*

Chapter 6, Transportation

Except for winter trails, Fort Yukon depends upon air and river access for transportation. This chapter describes existing transportation routes, facilities and infrastructure, and identifies proposed improvements which affects the community. Road dust remains a difficult problem, although the Department of Transportation & Public Facilities has recently resurfaced the airport runway, and major roads throughout town. Regional-level issues which could affect Fort Yukon include the analysis of three RS 2477 trails, a proposed road to Rampart, the public use of the Dalton Highway, and a new BLM road under construction to Beaver Creek. *Each of these projects has the potential to impact the Yukon Flats, and the sponsoring agencies should involve the community at the earliest stages of decision-making.*

Chapter 2

Background for Planning

Setting

Fort Yukon is located on the north bank of the Yukon River at its junction with the Porcupine River at 66 degrees 34 minutes north latitude, 145 degrees 15 minutes west longitude. The City, which is five miles north of the Arctic Circle, is about 145 air miles northeast of Fairbanks. The community is at the approximate center of a broad alluvial plain known as the Yukon Flats, an area of thousands of lakes and meandering streams.

The City has a permanent population of 663, and serves as a trading center for the villages of Chalkyitsik, Canyon Village, Venetie, Arctic Village, Beaver, Birch Creek, and Circle, some of which are a hundred or more miles away. These villages have a combined population of approximately 1,125. The 1990 census reported a total population of 1,684 in Upper Yukon Census Division, which roughly approximates the trading area of Fort Yukon. This Comprehensive Plan is for the incorporated areas of the city and takes into account related areas immediately outside the city.

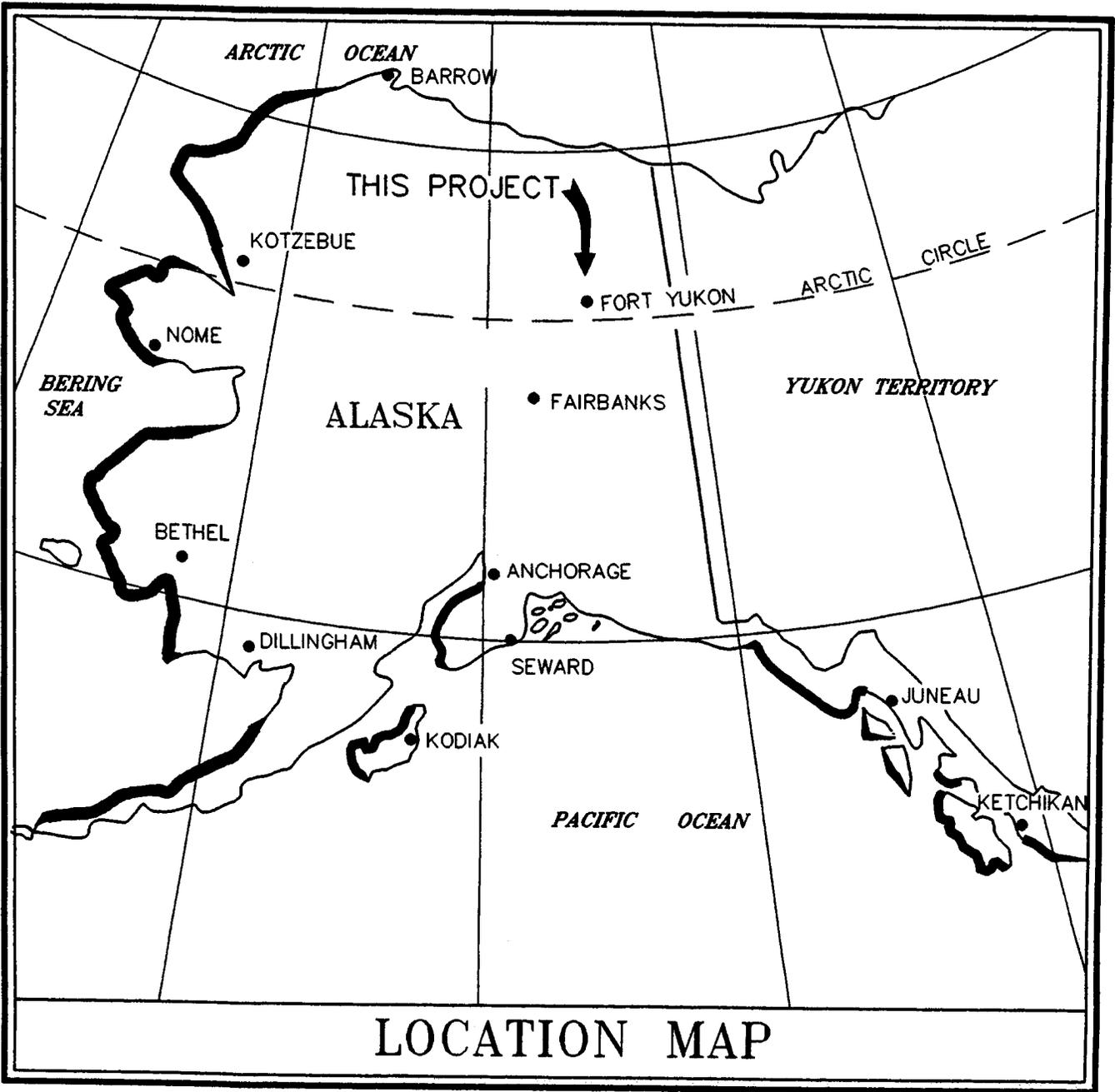
History

Alexander Murray of the Hudson's Bay Company built the original Fort Yukon on Russian territory in 1847. Fort Yukon quickly became an important trade center for the Gwich'in Indians who inhabited the vast lowlands of the Yukon Flats and the rolling hills of the Chandalar, Sheenjek, Porcupine and Black River Valleys. A mission school was established by 1862.

When the United States purchased Alaska in 1867, the Hudson's Bay Company continued operating, believing that the location was within the Dominion of Canada. In 1869, an American navigator traveled up the Yukon River, and conducted sun sightings to prove that Fort Yukon was part of Alaskan territory. The Canadians then withdrew across the border.

Moses Mercer, a trapper with the newly formed Alaska Commercial Company, took over operation of the Fort Yukon trading post. He was joined by American missionaries and trappers. These were followed in turn by prospectors when small quantities of gold were found between Fort Selkirk and Fort Yukon in 1873. A post office was established in 1898.

The fur trade of the 1800's, the whaling boom on the Arctic coast (1889-1904), and the Klondike gold rush spurred economic activity and provided some economic opportunities for the Native inhabitants. Major epidemics of introduced diseases struck the Fort Yukon population from the 1860's until the 1920's.



Over the years Fort Yukon continued to serve as a mission and trading center. Archdeacon Hudson Stuck, who made the first ascent of Mt. McKinley in 1913, made Fort Yukon his headquarters and is buried in the Native cemetery. In 1914 the Episcopal Church established a hospital, which served the community until the mid 1950's. In addition to St. Stephen's Episcopal Church, the community is served by the Assembly of God, and the Baptist church.

The first plane landed in Fort Yukon in 1921. In 1945 filling and grading began for the system of city streets that is in use today. A major flood in 1949 destroyed much of the settlement, and many of the residents moved their homes to the higher ground east of the original townsite. The stores, school, post office, public offices, and the community center are now located there. The present school was built in 1958 after the state closed the old Territorial School and the Bureau of Indian Affairs (BIA) School .

Also in 1949, the Fort Yukon Utility Company, a private system, was established to provide electricity. In 1955 the U.S. Air Force built an aircraft control and warning site and has since extended the White Alice Communications Network to the village.

Fort Yukon incorporated as a Second Class City in 1959 with a council-manager form of government. It lies within the unorganized borough, and is within the village boundary of the Gwitchyaa Zhee Corporation, a part of the Doyon Native Corporation region. Other major organizations include the Native Village of Fort Yukon (NVFY) which serves as the traditional government, and the Council of Athabascan Tribal Governments (CATG).

Most Fort Yukon residents are part of the larger Gwich'in Athabascan Indian population of Alaska, who occupy about 55,000 square miles of territory on the Yukon River drainage. Half the villages scattered across the Yukon Flats lie above the Arctic Circle. At the western end of the valley, the culture transitions to the Koyukon Athabascans.

The Arctic environment, at once harsh and fragile, plays a singular role in planning the future of Fort Yukon. This section of the Comprehensive Plan provides important environmental considerations that bear on planning decisions.

Climate

Fort Yukon winters are long and harsh, while the short summers are surprisingly warm. There is very little precipitation, and the surrounding region is considered an Arctic desert. The Yukon-Tanana Plateau, south of the Yukon Basin, forms an effective barrier to the maritime air flow from the North Pacific Ocean. After rivers and marshes freeze, the plateau is a source for cold, continental Arctic air. Extended periods of -50 F to -60 F are common, and -75 F has been recorded. Daily minimum temperatures from November to March are usually below 0 F.

Summer temperatures reach 80 F each year, and a high of 100 F has been recorded. The daily maximum average during July and August each year is more than 70 F. Despite these high

summer temperatures, daily variations can be extreme. Freezing temperatures have been recorded in every month of the year.

Most of the rain in the study area falls from convection showers. Total annual precipitation averages 7 inches and is normally heaviest during the summer. Average winter snowfall is about 45 inches. Because of the extremely cold winter temperatures, ground accumulation also averages about 45 inches.

Prevailing winds come from the northeast during winter and from the west or southwest during summer. Overall mean wind speed is 6.6 knots, with calm winds recorded 11% of the time. Approximately 90 days each year are frost-free. The last freeze in the spring occurs around the end of May, the first fall freeze around the end of August or early in September.

The following data is interpolated from the Environmental Atlas of Alaska, and is applicable to the Fort Yukon area:

Figure 2-1
Climatic Characteristics

Mean Annual Precipitation	10 inches
Mean Annual Snowfall	50 inches
Mean Annual Temperature	20 degrees F
Thawing Index	2600 degree days
Design Thawing Index (1 year in 10)	3100 degree days
Freezing Index	7000 degree days
Design Freezing Index (1 year in 10)	8000 degree days

Physical Geology

The Yukon Flats has an area of 13,700 square miles, and is characterized by meandering river channels, oxbow lakes, sloughs, alluvial fans, thaw lakes, sink holes, and sand dunes. Permafrost is present throughout the region. This alluvial lowland is bounded on the south by the Yukon-Tanana Upland Plateau, on the east by the Porcupine Plateau, on the north by the southern foothills of the Brooks Range, and on the northwest by the Hodzana Highland. The Yukon Flats are underlain by more than 300 feet of silt and silty sand deposited when the area was formed. These deposits are overlain by alluvial deposits of clay, silt, sand, and gravel.

Fort Yukon lies above a large geologic basin (called the Yukon Basin) that is possibly a result of the intersection of two major continental fault systems. This basin is believed to contain beds of coal and possibly natural gas. The Upper Yukon area that shows the most promise for gas development is on the Yukon Flats northeast of Rampart and northwest of Eagle. Recent indications of natural gas near Fort Yukon are discussed in Chapter 5.

Soils and Permafrost

Dominant soils are water deposited silts and fine sands. In some areas, sediments are covered by a windblown layer of silty loam ranging in depth from a few inches to several feet. This well-drained silt loam over sand is good soil for aspen, paper birch, and white spruce. The permafrost tables here are usually 4 or more feet below the surface and may be absent close to the river. These well-drained soils also have the best potential for construction if the particular area is not subject to flooding.

A secondary soil type in the Yukon Flats is found in the many shallow slough and old stream channels. It is mostly poorly drained and is perennially frozen at shallow depths; permafrost tables are within 2 feet of the surface. Soil with these characteristics present severe construction limitations. Dominant vegetation is mosses, stunted black spruce, dwarf birch, sedge tussocks, and lichens. Maintaining vegetation in these areas is important in keeping the permafrost tables at existing levels. If vegetation is removed, the permafrost tables lower, resulting in settling of the ground surface, and erosion along the steams.

Permafrost is discontinuous in the Yukon Flats, but in poorly drained areas it may occur to a considerable depth. At Fort Yukon, the depth of permafrost was found to exceed 320 feet. Beneath water bodies and well-drained sites, the ground is frozen. Layers of unfrozen deposits can also be found within zones of permafrost. Ground ice is common in the permafrost areas. In some locations where it has melted and left depressions, lakes have formed. These are known as "thaw" or "cave-in" lakes.

Because of permafrost, there is little groundwater except near streams. Aquifers apparently do not exist and the yield from wells is low. Springs exist in the area, and the best known is Circle Hot Springs. All water in the area appears to be of the calcium bicarbonate type, which is categorized as hard water.

Erosion and Sedimentation

Riverbank erosion has always been a major problem, especially since 1955 when a large amount of gravel was removed from the river for construction of the Air Force site. The increased velocity of the river added to the erosion caused by periodic flooding and permafrost thaw. Along some stretches of the river through Fort Yukon the bank has been eroded away to a depth of several hundred feet

The Corps of Engineers completed a slough closure dike upstream from the town in 1967. This dike diverted slough flow through the main channel and alleviated the major erosion problem. It has also caused a buildup of sediment adjacent to the townsite, moving the channel outward several hundred feet. The U.S. Soil Conservation built seven dikes along the slough and river banks in 1992. They appear to be working.

In the summer of 1976, the barge bringing supplies to Fort Yukon was not able to unload until a new loading site was prepared further downstream. In time, the new site will also be threatened with sedimentation.

Hydrology - the Yukon River

The Yukon River is the fifth largest river system in North American in terms of drainage area and amount of runoff. The drainage basin equals 330,000 square miles, one-third of which is in Canada. The Alaska portion of the drainage area constitutes roughly 40 percent of the state's land area. The average annual flow of water through Rampart Canyon has been estimated at 81 million acre-feet.

The Yukon Flats are dotted with lakes, ponds, and swamps and covered by a network of rivers, tributaries, and streams. The Yukon River flows through the flats as an intricately braided stream with many channels. At high water, the river overflows from the main channels into hundreds of high sloughs. The major tributaries include Beaver and Birch Creeks, emerging from the Yukon-Tanana highlands; the Black and Porcupine Rivers from the Porcupine Plateau; and the Sheenjek, Christian, Hadweegic, and Hodgana Rivers from the Brooks Range.

The flow characteristics in the Yukon and Porcupine basins are typical of snow-melt streams. Flow rises gradually in the spring to a peak discharge, usually within about 2 weeks of breakup, which occurs in mid-May. Spring is normally a time of the year with low precipitation. Summer rains throughout the basin serve to maintain flows at a near-average rate. These summer rains have never produced a flood at Fort Yukon.

Flooding

Almost all of the Fort Yukon townsite is subject to flooding except the eastern portion called Crow Town and the Air Force AC & W and communication sites. Flooding from spring runoff are often made worse by ice jams. The most damaging flood in recent times occurred in 1949 as a result of ice jams on the Porcupine River north of Fort Yukon. Spring floods are characterized by a rapid rise in the water level and velocity, and can last from a few hours to several days. Flood damage is sometimes slight from a monetary standpoint, but it is a hardship to residents and a deterrent to development. The Corps of Engineers published a "205 Report" in 1990 which summarized Fort Yukon flooding. The Federal Emergency Management Agency (FEMA) has awarded Fort Yukon a mitigation grant which should eliminate about 95% of projected flooding from the community (see the Land Use Plan, Chapter 4).

Relocation of the townsite has also been proposed. Residents have resisted moving because the river is a lifeline for supplies and important to their subsistence hunting and fishing and because there is no available high ground within a reasonable distance. Land evaluations within the community vary between 428 and 438 feet above sea level.

Animals and Plants

The Yukon Flats is one of the great waterfowl breeding areas in North America. Each spring millions of migrating birds from four continents set their course for Alaska's Yukon Flats. The ponds and oxbow lakes of the meandering Yukon become summer nurseries for ducks and 18 other species of waterfowl.

Salmon from the Bering Sea also depend on the water areas of the flats. Every year they ascend the Yukon River to spawn in the freshwater streams of their birth, nearly 2,000 miles from the sea. Runs of king, coho, and chum salmon reach the flats each summer to help maintain the Bering Sea and Yukon Delta fisheries.

Caribou, moose, and black, grizzly, and brown bear are common throughout the forested areas of the Yukon Flats. Many furbearing animals are found in the region. Beaver, mink, and muskrat are particularly abundant among lake and stream habitats. Wolves, fox, weasel, ground squirrels, and showshoe hares are common throughout most of the region.

Wildlife populations in the vicinity of Fort Yukon are large and varied, however, they are subject to substantial fluctuations through time. These fluctuations may be seasonal because of migrations or of longer duration if changes occur in the base populations.

Chapter 3

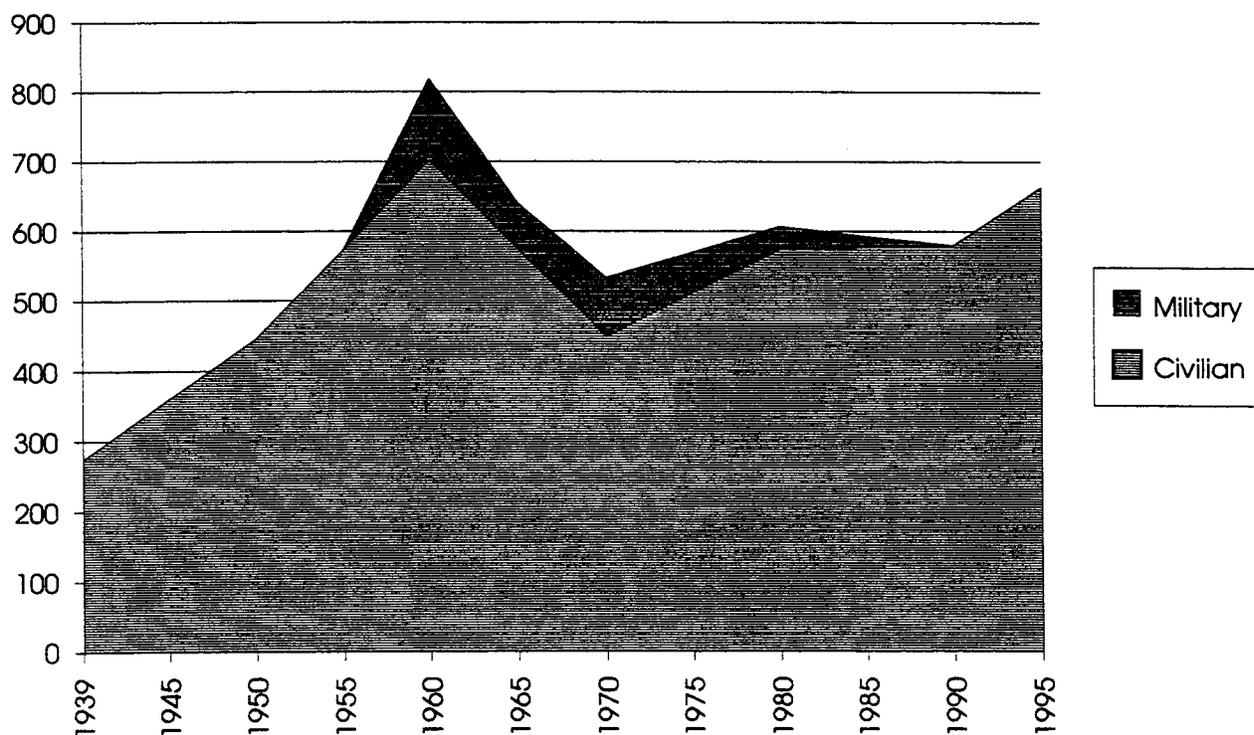
Population and Economy

This chapter describes the existing economy of Fort Yukon. It includes current and project population forecasts, looks at future economic trends, and examines several initiatives, ideas and strategies which the community can use to help achieve a sustainable economy.

Population and Demographics

Fort Yukon is the largest community in the Yukon Flats region, and has enjoyed this status for several decades. Figure 3-1 shows the community's population between 1939 and 1995. Population rose rapidly between 1939 and 1960. During the 1950's, the U.S. Air Force installed the White Alice early warning system in Fort Yukon and at the peak of the Cold War in the early 1960's, some 118 military personnel were stationed just east of the town. Between 1960 and 1970, the town's population fell from 701 to 448 civilians.

Figure 3-1
Population of Fort Yukon, 1939-1995



Notes: 1939, 1950, 1960, 1970, 1980, 1990 = federal census;
1945, 1955, 1965, 1975, 1985 = estimates only;
1995 = October 1995 local census

With the demise of Cold War tensions and changing technology, the military reduced its presence in town to a handful of technicians. Since 1970, civilian population has increased to a total of 663 persons during 1995. Tribal enrollment for Fort Yukon, which includes some non-residents, was 906 in 1995. The 1990 census found that about 85% of Fort Yukon's population were Alaska Natives descended from Yukon Flats Gwich'in, as well as Gwich'in from the Chandalar River, Birch Creek, Black River, and Porcupine River areas.

Fort Yukon is part of the larger Yukon-Koyukuk Census Area for statistical purposes. This large area includes the entire Yukon Flats Census Subarea, and most Yukon River villages as far down river as Holy Cross. The following table compares data for Fort Yukon with both the Yukon Flats Census Subarea, and the larger Yukon-Koyukuk Census Area.

Figure 3-2
Population, Income, and Educational Data
1990 Federal Census

	1990 Federal Census	1989 Household Median Income	1989 Per Capita Income	Persons 25+ years; % High School Graduates	Persons 25+ years; % College Graduates	% Persons in Poverty
City of Fort Yukon	580	\$17,969	\$10,055	58%	10%	32%
Yukon Flats Census Subarea	1,338	\$13,843	\$8,288	58%	10%	47%
Yukon- Koyukuk Census Area	6,681	\$23,945	\$9,778	68%	12%	38%

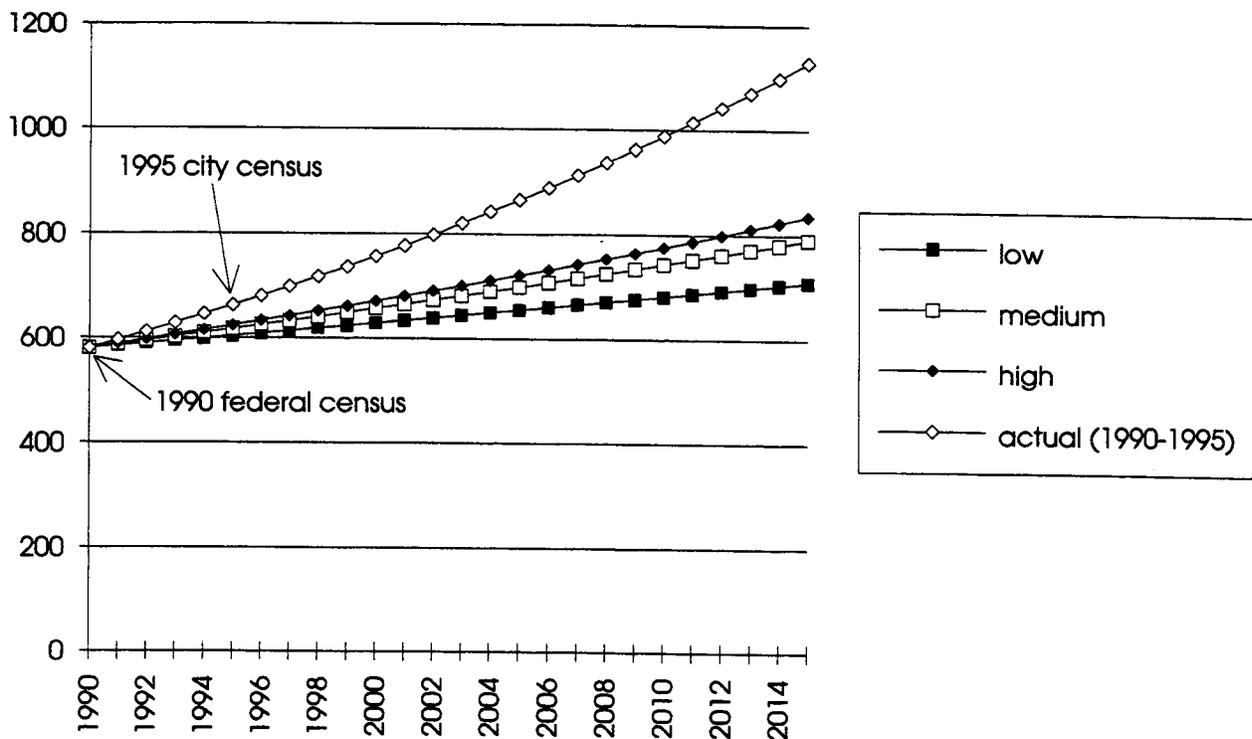
Population Projections

Population projections are difficult to make in smaller communities where the impact of even a single positive or negative economic development can have significant long-term implications. The Alaska Department of Labor published a series of population projections for each census district in the state in 1990. In general, rural areas in Alaska were projected to grow based on natural increases, while urban areas were forecast to increase based on both natural growth and in-migration. A low, base, and high level of growth were projected. The Yukon-Koyukuk Census District was forecast to grow at a low level of .81%, a middle level of 1.25% and a high level of 1.47% per year.

The 1995 city census showed a total of 663 residents, compared to the 1990 federal census of 580 persons. To achieve this number, the city grew at an average annual rate of 2.7%, much higher than even the high case projected for the overall census district. Much of this growth can be attributed to Fort Yukon's role as a regional center for the Yukon Flats. The following table

shows four levels of population forecasts for Fort Yukon. All projections originate from the 580 total in 1990. The lower three lines represent the Department of Labor's figures for the overall census district. The top line shows the actual increase in Fort Yukon from 1990 to 1995, and then projects the same rate of growth through the year 2015. If the 2.7% annual growth rate is maintained, the population of Fort Yukon would climb to 865 in 2005, and 1,129 persons in 2015.

Figure 3-3
Fort Yukon Population Projections



The Fort Yukon Economy

The economy of Fort Yukon is a combination of subsistence resource harvesting, government funded employment and private sector businesses. While the Fort Yukon economy is highly dependent on government spending, the community has a higher proportion of private sector employment than most other villages in the region. More than half of the 100 plus full-time jobs in Fort Yukon are in government funded positions.

The Council of Athabascan Tribal Governments (CATG) provides an excellent summary of local economic conditions in their "Organizational Background" report:

In spite of the low income and employment rates in the Yukon Flats region, a very stable economy exists based on hunting, fishing, and trapping supported by seasonal employment. Renewable resources generate cash - commercial fisheries, trapping, crafts production for local use and export, tourism and fire fighting make up the most income for families. Other statistically "invisible" parts of the subsistence economy include log house building and fuel wood vending for barter. It is this micro-economy which sustains people and this is the economy that is being developed through the efforts of this and other agencies. Each job that is developed and fits within the subsistence economy is considered a contribution to the health of the whole Yukon Flats community.

Composition of Employment

The distinction between the public and private sector in small rural economies is blurred, and is less important than in urban areas. As long as the particular activity or business furthers community goals and values, it is less important as to who provides the service. Often the critical mass of population or buying power is not present to justify investment by the private sector. For example, in larger urban areas, cable television service is offered by a private (although regulated) business. In Fort Yukon, this service is offered by city government.

Public Sector Employment

Most cash employment in Fort Yukon is government-related, and a high proportion of these jobs are seasonal, rather than full-time. Major government employers include the City of Fort Yukon, State of Alaska, the Yukon Flats School District, federal agencies such as the Postal Service and the Bureau of Land Management (BLM). The Native Village of Fort Yukon (NVFY), CATG and Tanana Chiefs Conference receive most of their funding through government contracting and grant programs. Descriptions of programs and services provided by the public sector are found in Chapter 5, Public Facilities and Services.

The State of Alaska operates a number of limited services in Fort Yukon, including:

- ◆ a full-time magistrate
- ◆ one person representing the Division of Family & Youth Services
- ◆ one person representing the Division of Public Assistance

During the summer, BLM operates an emergency fire fighting base from the Fort Yukon airport. However, most positions are on-call, and depend entirely on the agency's requirements for fire fighters.

Private Sector Employment

The Fort Yukon village corporation, Gwitchyaa Zhee Corp., is the largest private sector employer in town. The corporation owns G-Z Utilities which supplies power to the community. Since 1981, the corporation has developed 97 residential and commercial lots for sale within the City. Other private employment includes two retail stores, air taxi operators, fuel distributorship and two lodges. Seasonal employment is found in construction. A few residents earn income from the sale of arts and crafts. Although Doyon, Ltd. the ANCSA Regional Corporation does not have any businesses in Fort Yukon, they have developed oil and gas exploration strategies for the Yukon Flats, according to a recent issue of *Alaska Business Monthly*. The following table lists businesses which pay sales tax to the City.

Figure 3-4
Businesses Paying City Sales Tax

Business Name	Type of Business
Alaska Commercial Company	Food and General Merchandise Store
Bergman's Repairs and Rentals	Auto and Machine Repair; Marina
G-Z Utilities	Electric Utility
Idle Hour	Fast Foods
Interior Telephone Company	Telephone Utility
Kobuk Reps, Inc.	Snow Machines and other services
M & A Enterprises	Food and General Merchandise Store
Midnight Sun Lodge	Cabins and Restaurant
Sourdough Inn	Historic Hotel near Yukon River
Tahila's	Gift Shop
Yukon Fuel	Heating Oil and Gasoline Distributor

The Alaska Commercial Company (AC Company) operates the largest general merchandise store in Fort Yukon, selling a variety of foods, frozen meats, hardware items, toys, clothing and shoes. The staff consists of 12 local residents. The store was recently remodeled, and there are no current plans to expand the facility. A Community Advisory Council meets quarterly with store management. Other retail stores include M & A Enterprises, and a number of smaller outlets.

Income and Unemployment

According to the 1990 federal census, Fort Yukon household income was distributed as shown below. Half the households made \$17,969 or less in annual income. The most important sources of cash income for Fort Yukon residents in 1986-1987 were wage employment, the Alaska Permanent Fund dividend, income from trapping, and social security payments.

Figure 3-5
Family Household Income Information

Amount of Annual Income	Number of Households	Amount of Annual Income	Number of Households
Less than \$10,000	41	\$40,000 - \$49,999	21
\$10,000 - \$19,999	32	\$50,000 - \$59,999	6
\$20,000 - \$29,999	10	\$60,000 - \$74,999	10
\$30,000 - \$39,999	19	\$75,000 - \$99,000	8

Unemployment remains high in Fort Yukon and most rural communities in Interior Alaska. Official unemployment statistics are not valid for Fort Yukon, or for most rural communities. All Yukon Flats communities are combined together with Tanana and Nenana in the larger Yukon-Koyukuk Census District. The official unemployment rate for the first ten months of 1995 is 15%. Although this is double the average statewide rate of 7% unemployment, it vastly understates the actual level of unemployment and underemployment in both Fort Yukon and the Yukon Flats communities. Underemployment, especially during winter months, is about 80% with a resulting dependence on transfer payments.

Cost of Living

Although there are no official "market basket" cost of living comparisons between the Yukon Flats and Fairbanks or Anchorage, the cost of living in Fort Yukon is significantly higher. A recent household food survey conducted by Native Village of Fort Yukon estimates that food prices are about 50% higher locally than compared to prices in Fairbanks.

The state also recognizes a 42% differential for the salary costs of a state employee. In other words, a state employee would be paid an additional 42% salary for living in Fort Yukon, as opposed to Fairbanks or Anchorage. However, since average wages are far lower than urban Alaska, the actual cost of living is much higher than the 42% figure would indicate.

Energy costs provide another example. Heating fuel in 1995 cost \$2.02 per gallon. A typical household using 200 to 300 gallons per month would pay \$404 to \$606 in heating bills. Natural gas bills in Anchorage, for example, would be under \$100/month for a typical residential home. The high cost of transporting goods to Fort Yukon actually doubles the cost of living when compared to urban areas. According to CATG, this makes the average income in the Yukon Flats, which falls between \$5,000 and \$14,000, actually worth between \$2,500 and \$7,000. This high cost of living has a much greater impact, when considering high unemployment and underemployment rates for local residents.

Statewide Economic Trends Affecting Fort Yukon

Predicting the future of the state's economy is difficult. However, conventional wisdom suggests that as oil revenues decline with falling production from the North Slope, the size of state budgets will also fall. The state will continue to cut spending, reduce programs and personnel costs, and consider strategies such as reimposing a state income tax, reducing the Permanent Fund dividend and using some of the Permanent Fund to help stabilize the economy.

The Alaskan economy is heavily dependent on the petroleum industry for about 85% of state revenues. Petroleum revenues will continue to account for at least 80% of state revenues for the next several years. As a basic commodity, the petroleum market is subject to price swings driven by unpredictable world events. The 1991 Gulf War, for example, pushed petroleum prices sharply upward even though supply and demand remained near historic levels. This upward spike in prices resulted in a \$100 million windfall in unexpected State revenues. Another unexpected event, the Exxon Valdez oil spill, brought about \$1 billion into the State as part of the clean-up cost.

The continuing decline in Alaska oil production is the most ominous sign that State income will decline over the next 20 years. No other industry in Alaska has the enormous revenue-generating abilities of the petroleum industry. The Department of Revenue projects three oil production scenarios with high, medium and low forecasts. Alaska Department of Revenue forecasts released in April 1995 predict that production of Alaskan crude oil will be cut in half sometime over the next 10-15 years.

The effect of declining production on unrestricted state revenues is dramatic. In the mid-range scenario, revenues fall from three billion dollars in FY 1993 to below \$1.5 billion by 2010. The report adds, however, that projections do not account for the potential of new technology to further extract existing fields, or for the possibility of additional commercial discoveries.

The ability of the State to continue providing important funding for many local government services is directly linked to the amount of State revenues. The federal government is also undergoing an intense effort to balance the federal budget within a seven year period. **The City of Fort Yukon (and all local governments in Alaska) will face increasing pressure to find alternative means of funding and supporting local services.**

The City of Fort Yukon, NVFY, CATG and other organizations are extremely successful in obtaining state and federal grant funds to support a wide variety of important social and economic programs. They are to be commended and fully supported; without their effective leadership, the local economy would be in a considerably worse condition.

Towards a Sustainable Economy for Fort Yukon

There are few easy answers for obtaining suitable long-term economic development in rural Alaska. Each community must discover and nurture its own particular values and strengths, and then measure each potential economic opportunity against those values. Fort Yukon offers several significant values and strengths, including:

- ◆ a strong tradition of Athabascan culture and lifestyles.
- a deeply rooted tradition of subsistence hunting, fishing and gathering. The Yukon Flats provide the opportunity to continue a subsistence lifestyle.
- an active number and variety of organizations, all working to improve local social, economic and cultural conditions.
- ◆ a good education system, including a branch of the University of Alaska.
- the community's role as the regional center for the Yukon Flats.
- a well-maintained airport suitable for large cargo shipments.
- central location along the Yukon and Porcupine Rivers.
- a small, but well established private sector, offering a good variety of retail services at competitive prices.
- the clinic, radio station, and other services.
- ◆ recent dike and flood control projects should help protect much of the town from periodic ice jams and flooding.

Here are a number of challenges for the community:

- ◆ a lack of training opportunities frustrate those who wish to qualify for employment, advance on the job, or start and operate a business.
- unresolved land status issues discourage development such as additional housing.
- ◆ lack of a modern water, sewer and solid waste system creates potential health hazards and also discourages development.
- the population is not large enough to support many businesses found in larger communities.

The key for Fort Yukon is to continue to pursue an economic development strategy in harmony with Athabascan culture and traditional lifestyles. Development should be compatible with subsistence, provide training and opportunities so that people have choices regarding their future, provide enough jobs and income to give people opportunity for advancement, and give children the real option to remain in the community after their grown. The community needs to emphasize its strengths, and closely monitor state and national trends.

To work towards a sustainable local economy, the community should judge each ongoing activity and new idea by asking the following questions:

- will the activity or business help protect or enhance traditional culture and subsistence resources?

- ◆ are there training opportunities to prepare local people to take advantage of the opportunity?
- ◆ will the activity or business provide meaningful employment for local people?
- ◆ will income earned from the business or program stay in the community?
- ◆ does it reduce long-term dependence on government?
- ◆ does it promote health and public safety?
- ◆ does it provide cash income?
- ◆ it is feasible and sustainable over the long-term?
- ◆ would traditional consensus decision-making approve of the activity or venture?
- ◆ is it subject to burdensome and unnecessary outside regulation?

Essentially, if the answers to the above questions are yes, the venture or activity should be supported. If not, serious questions should be asked about the desirability of continuing or undertaking the idea.

Understanding regulations and removing barriers to local business is also an important step. For example, residents complain that restrictive state permits prevent them from serving traditional foods in a commercial setting, such as a lodge or restaurant. Food Service Permits are issued by the Alaska Dept. of Environmental Conservation. A number of specific game foods are prohibited from commercial use, due to the potential for bacterial infections and parasites. Among these animals are rabbits, polar bear and walrus.

However, DEC regulations do permit the serving of traditional foods at:

- ◆ traditional potlatches and ceremonies
- ◆ in hospitals and correctional institutions
- ◆ when given as a gift

DEC permits and restrictions also do not apply if a lodge or restaurant feeds an average of ten or fewer guests per day. While operators are encouraged to comply, no permit is required for small operators.

The Role of Subsistence

Subsistence remains a vital part of the local economy, as well as culture. Fort Yukon residents place a high value on subsistence because of strong cultural traditions. The Athabascan culture is centered on subsistence, which not only supplies food for the body and soul, but provides the foundation for social behavior within the Athabascan society. While subsistence has important economic implications, people usually subsist by choice. Subsistence provides a sense of community, and the very fabric which unites people and brings families together. Thomas Berger, in his book *Village Journey*, describes subsistence this way:

The traditional economy is based on subsistence activities that require special skills and a complex understanding of the local environment that enables people to live directly from the land. It also involves cultural values and attitudes: mutual respect, sharing,

resourcefulness, and an understanding that is both conscious and mystical of the intricate interrelationships that link humans, animals, and the environment. To this array of activities and deeply embedded values, we attach the word "subsistence", recognizing that no one word can adequately encompass all these related concepts.

Food gathering activities occur throughout the year in a cycle following the seasons and natural events. Subsistence activities often require substantial cash to purchase, maintain and operate snow machines, boats, guns and fishing gear.

Spring is marked by trapping of beaver and muskrats, hunting of migratory waterfowl and bear, and some occasional jigging through the ice for grayling. When water levels drop after break-up, nets are set to harvest king, coho, and chum salmon, pike, whitefish, sheefish, suckers and grayling. Trout lines are set for burbot.

By June the focus of subsistence activity shifts rapidly to fishing. Residents often take advantage of high water after breakup to ship house logs down river to Fort Yukon from their cutting locations. King salmon begin to arrive and are harvested using set gill nets and fish wheels in late June and early July. The king salmon run is followed by chum salmon in mid-August. Pike and grayling are taken with rod and reel, while sheefish are also harvested along with salmon. In addition, small game, waterfowl and black bear are occasionally taken. August is the primary month for gathering berries and greens.

Fall is also an important subsistence period, marked by a transition from an emphasis on fishing to hunting. Chum salmon run heavily in the fall and are netted until freeze-up. Moose, caribou and bear are hunted intensively during the fall. Migratory waterfowl are again harvested as they begin their migration south, staging and resting in the Yukon Flats area. Fish wheels are used mainly in late summer and fall for the late chum run, whereas nets are preferred for king salmon.

Winter is a fairly dormant period for subsistence harvest of food, but trapping swings into its most intense period during early winter when pelts are prime, and there is sufficient snow for snowmachine travel. Grayling, pike, and burbot are fished through the ice in late winter.

The most recent study of subsistence in Fort Yukon by the Alaska Department of Fish and Game was completed in 1990. Technical Paper No. 179, *Patterns of Fish and Wildlife Use for Subsistence in Fort Yukon, Alaska* documents the importance of subsistence to the local economy. Much of the data comes from an intensive effort to sample 72 households (34 percent) in Fort Yukon from August 1987 through October 1988.

The study documented that all households use some wild resources during the survey year. An estimated 91.5 percent made direct attempts to harvest resources. Mammals (except furbearers) were used by 100 percent of the households, salmon by 97 percent, birds by 90 percent, non-salmon fish by 98 percent, furbearers by 43 percent, and plants by 38 percent.

The estimated total edible weight of resources harvested by Fort Yukon residents during the study period was 625,725 pounds. This equals some 2,951 pounds per household, and an average per capita harvest of 1,071 pounds. Sixty-one percent of the total harvest consisted of salmon. The study also verified that sharing of resources between households remains an important part of community life and tradition.

Significantly, residents of Fort Yukon require a large geographic area to carry out subsistence activities. This area extends far beyond the municipal limits, as well as Gwitchyaa Zhee and Native Village of Fort Yukon lands. While some activities such as salmon fishing are concentrated within 10 or 20 miles of town, the overall community use area reaches up and down the Yukon River about 150 miles, and included tributary streams between Beaver and Circle. This territory also includes much of the Porcupine River and its drainages.

Trapping

Trapping continues to be a significant component of the mixed subsistence-cash economy in Fort Yukon. Trapping provides the third most important source of income in the community, following wage employment, and the Alaska Permanent Fund dividend. From November to March, local trappers harvest marten, lynx, red fox, wolverine, wolf, snowshoe hares and beaver.

Fort Yukon trappers require a large territory for successful trapping. According to the Department of Fish & Game, areas north of the community include portions of the Sheenjek, Christian, and lower Chandalar River drainages. South of Fort Yukon, local trappers seek areas along the Yukon River, Birch Creek and lower Beaver Creek. In addition, more remote areas along the middle Porcupine River, lower Coleen River, portions of the Black River and Salmon Fork Rivers southeast of Chalkyitsik are also used by local trappers.

The Department of Fish & Game conducted an extensive survey of local trapping in 1986-1987. During this period, approximately 20% (43 households) received income from trapping. Estimated average income from trapping per household was \$5,149. While most furs were sold, some are retained for home use or the manufacture of handicrafts for sale.

The Yukon Flats Fur Cooperative

The Yukon Flats Fur Cooperative (YFFC) was formed in 1987 by the Council of Athabascan Tribal Governments (CATG). The objective was to replace outside control of the fur industry with a locally owned and controlled business. A continuing challenge for local trappers has been the difficulty in selling furs for high prices. Individual trappers have been at the bottom of a series of transactions resulting in furs being sold at auction or to garment factories.

The Cooperative is an excellent example of a desirable local business because:

- ◆ it complements the subsistence way of life
- ◆ it uses a readily-available, renewable resource
- ◆ required skills are already in place within the community and region

- ♦ the development of an existing and accepted industry will bring more immediate benefits to the trappers and their families

CATG received a grant in late 1987 from the Administration for Native Americans (ANA) to develop the Coop's feasibility study, business plan and marketing study. In 1988, six villages, including Fort Yukon, established bank accounts in Fairbanks. Each of the village agents were able to advance money on fur to be trapped that season. The Coop exported about \$100,000 worth of fur during the 1987-1988 season, and \$37,000 during the following season.

For the next two years, YFFC continued to seek funding to provide a solid base level of support. Three outside sources have been especially helpful: the Industrial Cooperative Association in Massachusetts, the Campaign for Human Development, and the Puget Sound Cooperative Federation. Recently, villages outside the region have expressed interest in joining the Cooperative. CATG continues to administer the Cooperative from its Fort Yukon headquarters.

The Future of Trapping

Although trapping provides an excellent source of livelihood which is compatible with subsistence, the future of trapping is uncertain. European nations continue to debate the merits of a ban on pelts from animals caught in leg-hold traps, despite efforts by Canadian and US authorities. A growing movement to discourage the wearing of furs in many countries will affect the markets for Alaskan furs. **Residents should closely monitor these developments, and use every opportunity to present the case for trapping as a long-term, compatible industry in rural Alaska.**

Commercial tanning operations are another possibility for a local industry. Shishmaref has a relatively successful tanning operation which can be investigated as one example. Fort Yukon has an active cooperative, electric power and water. Issues dealing with chemicals and waste disposal can be overcome.

Local Gardening and Agriculture

Gardens plots have been a part of Fort Yukon since the days of the Hudson's Bay post. The community should work with the University of Alaska's Cooperative Extension Service and others to encourage more local gardening and produce. Local potatoes, herbs and other vegetables have potential for selective market niches.

Reintroducing Woodland Bison to the Yukon Flats

Resource agencies and local groups have discussed the possibility of reintroducing wood bison from Canada to the Yukon Flats. Habitat and range conditions in the Yukon Flats appears favorable for these animals. The proposal is presently dormant, however.

CATG opposes any introduction of animals which would lead to increased pressure for outside hunting in the Yukon Flats. They also oppose any transfer of animals under an agency-to-agency

basis. Instead, they advocate that any transfer be done tribe-to-tribe so that local residents have management authority. CATG also points out that decision-making in the region is done by consensus; i.e. if each of the Chiefs from each village give their consent, then the proposal can go forward for further consideration. All villages and private land owners would have to agree to the idea.

Expanding Opportunities for Tourism

Tourism has been an accepted part of the local economy for decades, and offers considerable potential for expansion. The community has numerous attractions and advantages, such as:

- ◆ name recognition. Visitors around the world recognize the "Yukon River" as a symbol of adventure and an icon of Alaska. "Fort Yukon" is an easy connection for adventurous visitors to make, once they realize how accessible the community is from Fairbanks.
- ◆ location. Located just above the mystical Arctic Circle, Fort Yukon offers an opportunity for visitors to cross into the Arctic without the expense of an expedition or more lengthy flight. Air taxi services from Fairbanks offer certificates for just landing in Fort Yukon, and many tourists make the round-trip without leaving the Fort Yukon airport.
- ◆ daily air taxi service. Daily flights from Fairbanks make the community accessible to the independent traveler.
- ◆ authentic Native culture. The demographics and needs of visitors to Alaska continue to change, favoring the more educated and affluent traveler. These visitors seek an "authentic" experience, and many communities are hosting local tours to fish camps, cultural events and arts and crafts fairs. Locally-based tours of Fort Yukon have been operating successfully for several years.
- ◆ historic attractions. The community has several historic attractions of interest to visitors, including the fort and Hudson's Bay cemetery, the Episcopal Church, Sourdough Inn and waterfront area, and even the Cold War White Alice site.
- ◆ marketing brochure. NVFY, the City and the Division of Tourism joined forces to produce an excellent and compelling marketing brochure which includes a community map, short history, summary of attractions and descriptions and photographs of local people and events. **This brochure should continue to receive funding and wide distribution, especially to independent travelers.**
- ◆ experience with visitors. Local entrepreneurs have conducted guided tours for visitors arriving by air for several years. These are well received, and provide an excellent foundation for additional businesses.
- ◆ overnight lodging. Many communities lack overnight accommodations. Fort Yukon currently offers two facilities, the Midnight Sun Lodge and the Sourdough Inn.

To take full advantage of the large potential market in tourism, the community should:

- ◆ **establish a central interpretive facility and visitor center.** The visitor has no central place to go to appreciate Athabascan history and culture, and to buy local furs, arts and crafts. A combined museum and interpretive center located near the airport would be an excellent attraction, and provide an outlet for local products.

- **re-establish the local museum.** NVFY is taking the lead to re-establish the Dinjii Zhuu Enjit Museum which was closed in the early 1990's. The museum collection is currently held by the University of Alaska Museum in Fairbanks, and coordination is underway with UAF to return these items. Gwitchyaa Zhee Corporation recently donated \$5,000 to re-start the Museum. The Comprehensive Plan fully supports these efforts.
- ensure that tourism is a guided experience operated by locals. Ideally, all visitors would be guided by local residents. Having large numbers of unaccompanied tourists is not desirable. Also not desirable is having tourists guided by non-resident guides and tour providers.

Village Level Banking -- National Bank of Alaska

Fort Yukon, like most small communities, lacks a bank or credit union. National Bank of Alaska (NBA) has attempted to fill this need in many villages by recruiting a local agent to act on the bank's behalf. The agent opens accounts, accepts loan applications and provides a convenient contact at the local level. The agent does not handle cash. According to NBA, the local agent has opened less than 20 accounts and taken less than 10 loan applications over the past two years. Due to the relative low level of activity, NBA is considering eliminating the agent in Fort Yukon and other locations.

Could Fort Yukon entice a bank to install an ATM (automatic teller machine) in Fort Yukon? According to NBA, ATM machines need about 1,000 transactions per month to break even. NBA installed an ATM in Unalakleet, which has a population size similar to Fort Yukon. The ATM is subsidized by the village corporation, and conducts only about 100 transactions per month. If the ATM were not subsidized by a local business, NBA would not keep it there. **The community should work closely with NBA and other retailers and businesses to ensure that local services are maintained.**

Maintaining Affordable Energy Supplies -- Power Cost Equalization (PCE) Program

This state program provides subsidies to reduce the cost of electric rate paid by rural consumers of electricity. The objective is to reduce the power cost per kilowatt hour to roughly equal those paid by urban consumers in Fairbanks, Anchorage and Juneau. Although very important to rural constituents, the program is under budgetary scrutiny and will likely be eliminated in the next few years. **The community should support rural legislative efforts to keep this program funded until alternative energy sources can be provided. The community should also prepare for the likelihood of higher energy costs when the program is eliminated.** Chapter 4, Land Use, discusses recent developments regarding the possibility of natural gas supplies near Fort Yukon.

Increasing State Employment and Services in Fort Yukon

The State Office Building in Fort Yukon is under-utilized. Residents would like to see more state business conducted locally on a full-time basis, which would bring services closer to the Yukon Flats region, and provide important state jobs. Statewide, however, as funds decline, the state has been consolidating services into regional offices in Fairbanks, Anchorage and Juneau.

The local office of the Subsistence Division of the Alaska Dept. of Fish & Game is one example. Currently, ADFG employs a seasonal technician from 3-6 months/year. This technician has oversight responsibilities for subsistence activities not only in the Yukon Flats, but for the entire breadth of northern Alaska. Thus, even when the office is theoretically open, the technician may be doing field work in Nome, Kotzebue or Barrow. To make matters worse, the program only has funding through June 1996. Legislative budget cuts may eliminate this position.

The community should work with agencies and the legislature to hold the line against further losses of state jobs in Fort Yukon.

Fully Utilize State Office Facilities

If it is not possible to fully utilize the existing state office building, the state and the community should enter into contractual agreements so that local organizations can provide necessary services. For example, a proposed tribal court could share space and facilities with the magistrate's office in the state building. Each state service should be evaluated to see if a local organization can be contracted to provide the service.

The Loss of the National Guard

The Alaska Army National Guard closed its armory in Fort Yukon as part of a broad reduction in force over the past five years. With the ending of the Cold War, the Army Guard has had to find new missions to remain a viable organization. Unfortunately, many local armories were closed as part of the downsizing of the military. It is very unlikely that the Guard will reopen the armory in Fort Yukon for the foreseeable future.

U.S. Customs Activity

Fort Yukon has served a point of entry for many years for flights from Canadian communities such as Old Crow, Yukon Territory, and from boaters and snow machiners traveling down the Porcupine River. Until recently, the U.S. Customs Service has employed a part-time employee in Fort Yukon to provide needed services.

What are the prospects for Fort Yukon becoming a Customs Station or a Port of Entry? Although no customs agent is present in Fort Yukon, the community is listed in

publications such as *Private Flyer* as a location where one can clear customs with prior arrangement from the Port of Fairbanks. Procedurally, most clearances in Fort Yukon are handled by telephone from Fairbanks.

Customs officials in Fairbanks have had difficulty in recruiting for a part-time employee (designated a WAE or "work when employed") in Fort Yukon. The position only pays about \$8.50/hr. and includes no benefits. The employee must be available 24 hours a day, including weekends and holidays, and might earn no more than \$1,000/year, given the low volume of business. Applicants must pass background checks and be available to provide services. Once a WAE is hired, the customs office can designate the community a Customs Station.

There are currently ten Ports of Entry in Alaska, each staffed by full-time customs officials: Ketchikan, Wrangell, Juneau, Sitka, Dalton/Cache (north of Haines), Skagway, ALCAN, Fairbanks, Valdez, and Anchorage. The standards for becoming a new Port of Entry are strict, and include, at a minimum, having 2,500 international merchandise transactions per year. Only Anchorage would meet current standards for becoming a Port of Entry, and the other ports in Alaska have "grandfather status".

There are two methods for a community to become a Port of Entry:

1. Congressional designation. Congress would have to enact legislation designating the community as a Port of Entry.
2. Local subsidy. Under a program where the community pays for a customs officer, the local port or airport becomes a "User Fee Port". Klamath Falls, Oregon and about 24 other communities around the country have opted to become user fee ports of entry. The cost to maintain a customs officer, including benefits, in Alaska would probably reach \$70,000 per year.

Given strict standards and a relatively low volume of international traffic, it is very unlikely Fort Yukon could be considered as a Port of Entry.

Federal Offices -- The Yukon Flats National Wildlife Refuge

The Yukon Flats Wildlife Refuge surrounds Fort Yukon in all directions. This multi-million acre refuge is vital to the continued support of the subsistence culture. There is currently no refuge office, interpretive center or staff based in Fort Yukon, however. Instead, the refuge is headquartered in Fairbanks. Officials of the US Fish & Wildlife Service would like to hire a local refuge information technician in Fort Yukon. Funding for such a position or an office is not currently available, however. **In the short-term, the community should work with the US Fish & Wildlife Service to obtain funding to cover a position and an office in Fort Yukon.**

Long-term, the community favors:

- **relocating the headquarters for the refuge from Fairbanks to Fort Yukon;**

- hiring and training local refuge management and staff; and
- establishing a refuge visitor and interpretive center in Fort Yukon.

Upper Yukon Zone/Bureau of Land Management

Currently, all federal fire fighting is provided by seasonal crews based at the Fort Yukon airport. Although based locally, relatively little money flows into the community. The CATG began developing a PL93-638 Contract Proposal to provide Fire Management Operations for the Upper Yukon Zone which includes tribal lands, land owned by ANCSA village corporations, Doyon Ltd. lands, and lands managed by the US Fish & Wildlife Service and the National Park Service. Within three to ten years, CATG hopes to replace outside seasonal workers with thirty local jobs. These positions are permanent seasonal jobs lasting from three to six months. In addition to the direct benefit of cash income, the education and training received would be very beneficial to all participants.

Native Village of Fort Yukon Initiatives

The Native Village of Fort Yukon I.R.A. has set forth several objectives for economic development and employment of tribal members. They have a very successful record of obtaining grants and pursuing economic development projects. The following examples are taken from their 1994 Annual Report:

Figure 3-6
Native Village of Fort Yukon I.R.A.
Economic Development Objectives

Objective	Activity	Status
Develop a local timber Industry for domestic use	Pre-fab cabins	CATG developing timber industry plans
Obtain enough homes for village families	<ul style="list-style-type: none"> • Obtaining HUD funding to build houses • Develop housing association • Two-story, 12-unit apartment complex planned. Elders would live on the lower floor; rental units on 2nd floor. 	<ul style="list-style-type: none"> • NVFY proposed becoming a HUD Resident Organization (RO) • Planned for construction during 1996
Tribal Employment Rights Ordinance (TERO)	Defines how contractors and employers will work with the tribal government	Ongoing

Objective	Activity	Status
Develop Employment Opportunity by establishing Tribally Owned Enterprise	<ul style="list-style-type: none"> • Develop tourism • Wood Vendor Program 	Brochure developed and distributed
Training Programs	Continue Youth 'R Us entrepreneurial program through Tribal Work Experience Program (TWEP)	Need continued funding to support student training.
Training Programs	Expand OJT Internship Program	On-going

Provide Continuing Training for Local Residents

The community needs to determine what skills are needed for both short and long-term capital projects and development ventures. For example, this plan summarizes prospects for commercial discoveries of natural gas in the Fort Yukon area. If gas is found to be a viable energy source, training should be provided so that local people can develop, operate and maintain the gas production and distribution system. Regardless of the project, the objective is for increased local control, so that residents have the first opportunity for employment, training and leadership positions.

Lack of training in evaluating, establishing and running small businesses is often cited as a major hurdle for local people. Fort Yukon is fortunate to have a rural branch of the University of Alaska in town. **The community should fully support retention and expansion of training programs such as those offered by the University.** For example, a recent catalog from their Center for Distance Education and Independent Learning included the following courses:

- ◆ Elementary Accounting
- ◆ Basic of Investing
- ◆ Applied Business Law
- ◆ Introduction to Business
- ◆ Tourism Principles and Practices
- ◆ Principles of Advertising
- ◆ Principles of Marketing

The community has no shortage of ideas and imagination regarding desired businesses and enterprises. Some ideas mentioned as part of this planning process include:

- ◆ the fur cooperative
- ◆ using computers and the Internet to provide on-line services and businesses
- ◆ growing more local produce through vegetable and herb gardening and greenhouses
- ◆ expanded tourism-related businesses
- ◆ get an automated teller machine or a local branch of a bank

- establish an artisan's cooperative
- establish a commercial tannery
- open small businesses, such as a home equipment repair, barber shop, beauty shop, bakery, small engine repair, plumbing and heating, auto mechanic/auto repair, and a certified electrician.

Additional Sources of Assistance

The community should continue to creatively utilize all sources of assistance, provided they foster self-determination and less dependence on government. One excellent source for funding and technical assistance is the *Economic Development Resource Guide* published by the Department of Community & Regional Affairs. The guide lists over 80 programs from federal, state, private nonprofits, and private for-profit sources. **The community should carefully examine this guide, and apply for those programs most applicable to the local situation.** Several examples of federal, state, and private programs from this guide as summarized as Appendix A following this report.

Rural Economic Development Initiative

The Rural Economic Development Initiative (REDI) is an umbrella program which brings together several state and federal programs to increase community involvement and stimulate private sector jobs. REDI embraces three financing options: CDBG (Community Development Block Grants), federally funded competitive grants; RDA (Rural Development Assistance), state funded regular competitive grants, and Mini-Grants, small state funded innovative competitive grants. Examples of REDI projects include:

- Tourism Development - Assisted and provided funding in communities such as Arctic Village, Huslia, Copper Valley, Nome, Minto, Stevens Village and St. Lawrence Island.
- Commercial Greenhouses
- Cottage Industry - Assisted with Native Arts and Crafts gift shops, home crafts industry centers, and a wholesale supply house. Examples: Dot Lake, Aniak, Shishmaref.
- Fur Industry - Assisted and financed fur trapping and buying, marketing and training to trappers, brokers and retailers. Examples are the Shishmaref Tannery and the Yukon-Kuskokwim Mink Festival.
- Community Development - Funded basic infrastructure (roads, water and sewer, safety projects, etc.) in Hooper Bay, St. Mary's, Kwethluk and St. George Island, and other locations.

Summary

In summary, Fort Yukon enjoys a mixed cash - subsistence economy. Building a sustainable local economy compatible with local values and less dependent on government programs will not be easy. By working closely together, the City, NVFY, CATG and other organizations, businesses and individuals can make a substantial difference in the quality of life for current and future residents.

Chapter 4

Land Use Plan

The land use plan is intended as a guide for current and future land use and development decisions affecting the City of Fort Yukon. The land use plan identifies suitable land areas for the orderly growth of the community. It assigns all areas in the city to appropriate land use categories, based upon existing and emerging patterns of development, transportation access, land status, availability of utilities and other sound planning principles. A specific objectives is to provide a more balanced and related pattern of land use which can encourage future growth, while protecting values important to local residents.

While residential sites are most needed, expansion areas for commercial and public service facilities should also be planned. Designating specific areas for future development will help to assure that public expenditures for roads and other services are made wisely, and will provide needed guidelines for specific private and public projects.

The City lies at the confluence of the Yukon and Porcupine Rivers, and encompasses about 7.5 square miles. A variety of public and private parties own land within the city limits. The largest owners of property include federal, state and local government, the G-Z Corporation, the Native Village of Fort Yukon and other private owners. The Yukon Flats National Wildlife Refuge lies about 15 miles from Fort Yukon in most directions. Management plans recognize and support traditional subsistence and trapping activities on the refuge.

The 1971 passage of the Alaska Native Claims Settlement Act (ANCSA) led to establishment of the Gwitchyaa Zhee Corporation. They received several thousand acres of surface estate in the immediate area, while the regional corporation, Doyon Ltd., received title to the subsurface estate. Unsurveyed land is conveyed from the government by an interim conveyance document. Once this land is surveyed, a patent is then issued.

Existing Land Use

The use of land in Fort Yukon has been influenced by several factors, including:

1. the location of the original federal townsite
2. the Yukon and Porcupine Rivers
3. airport development
4. limited suitable ground for development
5. availability of utilities
6. land status
7. the local road and trail system
8. resolving ANCSA Section 14(c)(3) conveyances

Trends in Fort Yukon's Land Use

The past twenty years have brought significant changes to land use in the community. These major changes and trends include:

- ◆ loss of major portions of the village, including riverfront shoreline, to flooding and erosion
- ◆ serious flooding from ice jams during break up
- ◆ the "downtown" gradually relocates from the river to Crow Town.
- ◆ the departure of most Air Force personnel
- ◆ construction of finger dikes along the waterfront
- ◆ the transfer of significant acreage from Gwitchyaa Zhee Corporation to Native Village of Fort Yukon
- ◆ 1994 loss of the school to fire, and subsequent emergency reconstruction
- ◆ 1995 construction of the new flood control levee

Map 1 shows Current Land Use and Map 2 shows Existing Land Ownership. The town is laid out between the airport along Hospital Lake and the north shore of the Yukon River, Yukon Slough and Yllota Slough. The original federal townsite was planned in 45 blocks, laid out in a grid system in the newer (eastern) portion and randomly in the older (western) portion. Fort Yukon's land is used principally for residential and public purposes since there is no major industry or commercial center. Within the townsite, there are approximately 158 acres of land in residential use. The community has several historic properties. Among them are the:

- ◆ Sourdough Inn (FTY-006) and
- ◆ Territorial School (FTY-005)

Because Fort Yukon serves as a regional center for the outlying villages, an unusually large percentage of land is devoted to public service facilities (school, clinic, and state or federal offices). Excluding the airport (510 acres) and the Air Force site, public facilities occupy 23 acres. Commercial development, which includes the M&A General Store, Alaska Commercial Store, Sourdough Inn, and Midnight Sun Restaurant and Lodge, totals 4 acres.

Fort Yukon was originally concentrated in the western portion of the townsite, but the flood of 1949 forced relocation of much of the town to the higher ground of Crow town--that portion presently occupied by the school, community center, post office, Alaska Commercial and M&A General Store, and the majority of newer residences. The western portion of the townsite is still occupied by the Gwitchyaa-Zhee Electric Utility Company, Yukon Fuel storage facility, and the Sourdough Inn.

To the southeast of the townsite is the U.S. Air Force Aircraft Control and Warning site, and the related communication network facility operated by a private contractor. This is one of the few areas above the base flood elevation (439.5 or 440 feet above sea level). The military has two properties in Fort Yukon: the old White Alice site, and the Long Range Radar Site. The White Alice property will soon be excessed as surplus to federal needs, while the Long Range Radar Site will remain open and operational for the indefinite future.

Virtually all high ground at Crow Town has now been developed. New HUD housing has been built on slightly lower ground just within the northern boundary of the townsite. Few platted sites remain and future residential growth will require additional surveys and platting. The most serious limitation on expansion is the relative lack of high ground.

Within the central portion of Crow Town, stores and offices have been developed among some of the homesites. This results in more traffic around the homes and causes uncertainty in terms of the expansion potential for commercial and public uses. The locations of the Alaska Commercial Store and M&A Store are close enough to each other to allow comparison shopping and are convenient to schools, community center, post office, and other places where residents have business.

The Fort Yukon airport is owned by the State of Alaska. Although nearby Hospital Lake is used for float plane access, the community prefers this area remain primarily for local subsistence use. There are five Native allotments within the City limits. The Fort Yukon Native Townsite was patented to the townsite trustee for disposal to the occupants. Municipal reserves, underdeveloped portions and streets were conveyed to the City.

Fort Yukon is surrounded by the Yukon Flats National Wildlife Refuge. ANILCA excludes Native lands from refuge management control. The U.S. Fish & Wildlife Service refuge management is headquartered in Fairbanks.

Over 100,000 acres of land held by Gwitchyaa Zhee Corporation was conveyed to Native Village of Fort Yukon within the past two years. This conveyance followed a majority vote by shareholders of G-Z Corporation. In conveying the land, tribal members stated that:

- ◆ land would have greater protection from possible loss through taxation, eminent domain or sale, if held by the non-profit tribal government
- ◆ communal ownership by all tribal members would be more in keeping with traditional concepts of land use and ownership than ownership by a for-profit corporation
- ◆ all tribal members and their families would have free access to tribal lands
- ◆ through an agreement, economic benefit from selective land development would be retained with G-Z Corporation
- ◆ Native Village of Fort Yukon could undertake programs such as shareholder homesites for tribal members, and
- ◆ tribal land would never be sold

Material Sources

Fort Yukon is fortunate to have at least two sand and gravel material sources for local construction projects. The Grace Thomas gravel pit is located adjacent to the Sucker River, about one mile from the center of town. The Doyon Ltd/G-Z Corporation gravel pit is located adjacent to Yllota Slough, about 3 miles east of town.

ANCSA Section 14(c)(3)

The Alaska Native Claims Settlement Act (ANCSA) requires that Village Corporations reconvey certain lands received under the Act to other parties. The intent was to provide title to the surface estate to those who had valid claims to land for designated purposes as of December 17, 1971. Reconveyances are made under the following categories:

- Section 14(c)(1) -- for individuals (Natives or non-Natives) who occupied lands as of December 18, 1971 for primary places of residence, business or for subsistence campsites
- Section 14(c)(2) -- to non-profit organizations who occupied tracts as of December 18, 1971 (such as churches and schools)
- Section 14(c)(3) -- to municipal governments for present and future public purposes; and
- Section 14(c)(4) -- to government agencies for safe operations of airports as they existed on December 18, 1971.

Gwitchyaa Zhee Corporation has fulfilled its obligations under Sections 14(c)(1), (2) and (4).

Section 14(c)(3) says:

"the Village Corporation shall then convey to any Municipal Corporation in the Native Village title to the remaining surface estate of the improved land on which the Native village is located and as much additional land as is necessary for community expansion, and appropriate rights-of-way for public use, and other foreseeable community needs: Provided , That the amount of lands to be transferred to the Municipal Corporation shall be no less than 1,280 acres;"

The requirement to convey "no less than 1,280 acres" was considered excessive for many small villages. After considerable debate, this section was modified in 1980 by Section 1405 of the Alaska National Interest Lands Conservation Act (ANILCA). Section 1405 adds additional language to Section 14(c)(3) as follows:

"unless the Village Corporation and the Municipal Corporation ... can agree in writing on an amount which is less than one thousand two hundred and eighty acres..."

Section 14(c)(3) identifies what type of land is to be conveyed:

...title to the remaining surface estate of the improved land on which the Native village is located and as much additional land as is necessary for community expansion, appropriate rights-of-way for public use, and other foreseeable community needs,...

According to the 1994 Annual Report of the Native Village of Fort Yukon I.R.A., 43 applications for Section 14(c)(1) subsistence campsites were approved by the Village Corporation. None of these sites have been surveyed and trespass is a problem. Several years ago, the City of Fort Yukon applied to the Corporation for 1,280 acres of 14(c)(3) land. In

return, the Corporation issued a counter offer for a lesser amount. Until recently, negotiations have been at an impasse.

Recently, however, all parties (including the City, Native Village of Fort Yukon and Gwitchyaa Zhee Corporation) have formed a working committee to resolve 14(c)(3) claims. **This is a very encouraging step, and the Comprehensive Plan strongly supports cooperative efforts to resolve 14(c)(3) claims.** Until resolved, land held by Native Village or Gwitchyaa Zhee Corporation within the city limits has a cloud on the title. Lending institutions, for example, would be reluctant to provide financing for projects on land which may be subject to reconveyance. The plan recommends a 14(c)(3) process begin with these assumptions:

1. Resolving these conveyances would benefit the City -- lands necessary for public facilities and services would be obtained;
2. Resolving these conveyances would benefit Gwitchyaa Zhee Corporation, since economic development projects could go forward without 14(c)(3) claims clouding the title
3. The Committee can look to this Comprehensive Plan for ideas and recommendations to the types and general locations of reasonable 14(c)(3) conveyances.
4. The City's role is to encourage and facilitate private development, not to compete with it. For example, municipal selections under Section 14(c)(3) can be justified for such public facilities and services as: public safety (police, fire, emergency) building and sites, power generation sites, city administrative or maintenance sites, equipment storage, bulk fuel storage sites, landfills, parks and outdoor recreation areas, sewage lagoons and treatment systems, water wells and treatment plants, etc.).
5. Both parties should strive for the mutual benefits to be gained by conducting joint planning.

Flood Control Measures

Flooding, Erosion Hazards and Topography is shown as Map 3. Most of the town lies below the base flood elevation of 440 feet. The construction of dikes and flood control levees will have an important impact on land use within Fort Yukon. The Federal Emergency Management Agency (FEMA) sponsored a *Conceptual Design Study Report for Flood Damage Reduction at Fort Yukon, Alaska* report in 1994. This report set forth recommendations to develop detailed levees, drainage designs and construction plans. The study focuses on giving the community the maximum amount of flood control protection available under limited funding. The purpose of the project is to provide protection to the City of Fort Yukon from ice jams and floods.

The adopted alternative, a lower-crest ring levee, was constructed during 1995, using primarily local workers hired by the City of Fort Yukon. Easements for the levee were purchased from private owners. The levee was placed around the most populated and flood prone areas of the community, and did not involve changing the shoreline or channel of the Yukon River. The levee did not effect the fuel tank farm which has its own 4-foot dike

system. The top width of the levee is 8 feet, except where the levee replaced existing roads. Roadway levee sections have a top width of 20 feet.

The levee was built to a height of 439 feet, or about eight feet high above ground level at its highest point. The average height of the levee is about four feet. Ramps have been provided for those portions of the levee which acts as a roadway. The project is designed to protect the town from 20-25 year flood events, but not against 100 year and 500 year flood events. The height is a compromise between the need to protect property from flooding, cost, physical access problems and unsightly visual barriers.

The levee is designed to keep flood waters from entering the inside of the ring. In the event flood waters do exceed the height of the levee, a series of one-way culverts should drain the impounded area, thus avoiding the potential for a "bathtub effect".

DOT&PF also resurfaced and installed drainage culverts at several locations along Spruce Street and at the airport during 1995. Placement of culverts under Spruce Street should enhance the natural flow of hinterland flood waters along the old riverbed to the airport drainage system.

FEMA estimates that annual maintenance of the levee system is about \$7,400 per year:

◆ Levee inspection and pump operation	\$ 400
◆ Levee repairs	4,000
◆ Trash and silt removal	2,000
◆ Yearly reseeding of levee slopes	1,000

As part of the grant agreement , the City is required to:

- ◆ operate and maintain the project without federal funds
- ◆ hold the federal government free from damages
- ◆ prevent future land use activities or encroachment which might interfere with the proper functioning of the levee system
- ◆ participate in the National Flood Insurance Program (NFIP) and other applicable federal flood plain management programs.
- ◆ provide guidance and leadership to prevent unwise future development in the flood plain.

Requirements from the Levee Construction Project

The most significant change in land use in recent years in Fort Yukon has been the recent construction of the ring levee around the community. The purpose of the levee is to provide protection from ice damage and backed up flood waters from the Yukon and Porcupine Rivers. These rivers carry major amounts of breakup ice which regularly cause ice jams and flooding at the confluence of the two rivers. Ice chunks the size of a truck are not uncommon.

The decision to construct the levee to a specific height was determined by available funding, the height of the 50-year flood event, and the need to use the levee for existing roadways. Also, if

the levee were constructed much higher, it would significantly block views, prevent access to many homes and properties and change the character of the town.

The top of the levee is about eight feet wide, except in those areas where the levee replaces existing roadways. Roadway levee sections are twenty feet wide. Access ramps allow vehicular use of the levee road sections. The height of the levee varies from four to six feet.

Funding for the levee was provided primarily by the Federal Emergency Management Agency (FEMA). The grant was administered by the State Division of Emergency Services and the City of Fort Yukon. FEMA routinely attaches important conditions to its grant awards. In this case, FEMA has required that the City:

- ◆ obtain all easements from private property owners.
- ◆ commit to completing the project.
- ◆ join the National Flood Insurance Program (NFIP).
- ◆ work with the Native Village of Fort Yukon to carry out tasks outlined in an agreement with the U.S. Soil Conservation Service. This includes completing the crib walls between the finger dikes and conducting proper annual maintenance of the dikes.
- ◆ pay for and perform annual maintenance on the levee. This includes inspection of the levee drainage system and pumping operation, repairs as needed, removal of trash and silt, and reseeded as required. FEMA estimates that annual maintenance costs will be \$7,400.

Development Permits Required

The City joined the National Flood Insurance Program (NFIP) in March 1995. The City adopted ordinance No. 95-06 which establishes "... land use regulations to conform to requirements of the National Flood Insurance Program..." The purpose of the ordinance is to:

- ◆ protect land uses from flood damage;
- ◆ modify land uses which are dangerous to health, safety or property to avoid future flood damage;
- ◆ ensure that new subdivisions and development are designed and built to minimize the potential for flood damage;
- ◆ ensure that flood insurance is available for sale for residents; and
- ◆ ensure that those who occupy areas of special flood hazard assume responsibility for their actions.

The "Area of Special Flood Hazard" is defined as those lands within the community which have a one percent or greater chance of flooding in any given year. In other words, these are land areas within the 100 year floodplain. Because the community lacks detailed flood maps, the ordinance provides that the High Water Mark of previous floods shall be used.

The ordinance requires that anyone building or developing property must first obtain a Development Permit from the City. The City Manager is designated as the permit administrator. The permit applies to all new construction, including fill, and similar activities. It also applies to

City of Fort Yukon
Development
Permit Application

Number: _____
Date: _____

Applicant Name: _____

Legal Description: _____

Description of Proposed Work: _____

Minimum floodproof elevation of _____ ft. required.
(Non-residential Buildings) (Engineer's Certificate required as checked below.)

Minimum Lowest Floor Elevation of _____ ft. required (Base Flood Elevation)
(Residential Buildings) (Elevation Certificate required)

Based on the attached plot plan the site/proposal is (check all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Not in a flood hazard areas | <input type="checkbox"/> Accessory Building |
| <input type="checkbox"/> Not a substantial improvement | <input type="checkbox"/> Residential |
| <input type="checkbox"/> In a AE (Flood) zone | <input type="checkbox"/> Commercial |
| <input checked="" type="checkbox"/> In an Unnumbered A zone | <input type="checkbox"/> Mobile (Manufactured) Home |
| <input type="checkbox"/> Lowest floor elevated 2' above grade | <input type="checkbox"/> Subdivision |
| <input type="checkbox"/> Fill/Excavation | <input type="checkbox"/> Other _____ |

Certification of Elevation

I, _____ do hereby certify that the following elevation represents a survey made by me, under my supervision, or if certified by the City of Fort Yukon, was taken (indicate source)

- The lowest floor elevation= _____ (MSL)
- The ground elevation the structure will be placed on= _____ (MSL)
- The elevation of the top of floodproofing= _____ (MSL) (for non-residential structures only)
- Lowest floor two feet above grade.
- Other _____

Reference Bench Mark No. _____

Location _____

Date: _____ Signature: _____

SEAL

Original must be certified and returned to City of Fort Yukon

upgrading an existing structure, if a "substantial improvement" is made. Substantial improvement means:

- any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds 50 % of the market value of the structure, either 1) before the improvement or repair is started, or 2) if the structure has been damaged, and is being restored, before the damage occurred.

The purpose of the permit is to determine if the proposed improvement lies within the flood hazard area. If not, the applicant is free to construct or develop the property in a normal manner. However, if the structure is subject to flooding, the applicant must:

- ♦ design and construct the improvement so that it will not float, collapse or move on its foundation during flooding. In other words, the structure must be anchored down.
- ♦ use construction materials which are resistant to flood damage.
- ♦ use construction methods which will result in minimal flood damage.
- ♦ design, construct and elevate utilities to minimize or eliminate infiltration of flood waters.
- ♦ elevate residential structures so that the bottom of the lowest floor is above the base flood elevation. All new or substantially improved homes must be elevated above the High Water Mark.
- ♦ elevate all other structures (e.g. commercial, public, etc.) so that the bottom of the lowest floor is above the High Water Mark, or flood proof areas below this elevation so that they are watertight.
- ♦ non-residential construction must be certified by a registered engineer or architect as meeting the standards set forth in this ordinance.

Normally, rural Alaskan communities find it impractical to implement the NFIP, due to lack of funding for staff engineers, surveyors and detailed Flood Insurance Studies. Fort Yukon is one of the first communities to adopt a more practical approach -- to help implement the ordinance and provide for public safety, the City has installed thirty High Water Mark placards throughout the community. These signs are posted on utility poles at a height of 439.6 feet above mean sea level (msl). This height is considered to be the Base Flood Elevation (BFE). Under the NFIP, all new structures in town must be constructed at or above this height. This means a house which would normally be located below this height must be raised so that the lowest floor, including the basement, are at least at the BFE.

The City should publicize the new development permit process through public education, announcements and the media.

Future Land Use Needs

The Land Use Plan and recommended strategies attempt to guide civic decision-making over a 10-20 year period. However, if past events are a guide, this current document will need to be occasionally revisited and revised. Here's a listing of projected land use trends which may affect Fort Yukon:

- ◆ Section 14(c)(3) claims should be settled
- ◆ Public roads which cross Native allotments should be recognized, or alternative routes should be found so that private property rights are respected, but the public's need to reach outlying areas is also protected
- ◆ some church lands may be transferred to tribal government
- ◆ the opening of the Haul Road for public use will bring more outside visitors, and increase pressure on fish and game resources

Residential Land Use: Expanded areas for subdivisions and residential land use are needed to gradually relocate people out of floodprone areas, and to accommodate new housing and projected population growth. Only two high-ground corridors exist for residential expansion: one north along Spruce Street (extended) and one east toward the Air Force site. The Spruce Street corridor offers the advantage of providing reasonably high ground close to the newest housing area. The Air Force site corridor does not have equally desirable building sites until a point east of the site. Use of this corridor would result in a more spread-out community. The topography of both corridors is more uneven than the developed area and will require clustering of houses and a departure from the grid system of streets.

Elder Housing: The community would like to provide better housing for its Elders. A site chosen near the airport would provide a relatively central location.

Commercial Land Use: The downtown area will likely remain in its present location for the foreseeable future. Most of the commercial area is above the base flood elevation, and expansion room exists as well. The commercial area, together with the school and post office, form a fairly compact "downtown" area for Fort Yukon.

Industrial Land Use: The major industrial land use in town is the powerhouse operated by G-Z Utilities. They are proposing to relocate this facility on a 4.3 acre site near the White Alice site. This would remove the powerhouse from a low lying area subject to flooding, and reduce noise in the residential area of town.

Concern for Environmental Health

The town has several concerns regarding environmental health, and the quality of air, water and soils in the area. Although Fort Yukon lies in the midst of the relatively pristine Yukon Flats, state and federal agencies have undertaken activities around the community which have led to pollution and contamination. The only agency to date to aggressively determine the environmental impacts of their activities has been the US Air Force. This section summarizes recent efforts by the Air Force to evaluate its property in Fort Yukon, and its proposed expansion of military operations areas in Interior Alaska.

Long Range Radar Site

The Fort Yukon Long Range Radar Site (LRRS) was established in 1954 as a USAF Aircraft Control and Warning Site. In 1957, a White Alice Communication Site (WACS) was added, and

then deactivated in 1980. In that year, the site transitioned to a Minimally Attended Radar (MAR) unit, with only six personnel.

The Air Force is completing a Remedial Investigation of its military activities at the LRRS and the White Alice site. Field investigations, a hydrogeological characterization study, an ecological risk assessment, and a human health assessment were undertaken during 1993 and 1994. A draft report (*Draft Remedial Investigation Fort Yukon LRRS, Alaska*. Prepared by Woodward-Clyde for the 611th Air Support Group, Elmendorf AFB, Alaska. February 1995) concludes that . A final Remedial Investigation report is due for release in December 1995.

The draft report concluded that only one site, the Oil/Fuel Discharge at the Power Plant (SSO3), merits further action. Tests indicate contaminated groundwater and a relatively large quantity of contaminated soil. The size of this area is about one acre. The report states:

Analytical and field screening results indicate contaminated groundwater and a relatively large quantity of contaminated soil are located north of the Old Composite Building. The western limit of diesel-contaminated soil is clear, but the eastern limit is not. An inspection along the entire north side of the Old Composite Building, where a fuel line connects the old power plant to the large POL tanks (located to the east), should be included in any future study. The fuel lines are a suspected source because the piping was joined with threaded couplings, which are more likely to leak than welded joints. The limits of groundwater contamination are less clear than the soil contamination. Additional groundwater sampling is recommended in the area around the sewage treatment plant.

The Air Force recommended, and the Alaska Dept. of Environmental Conservation agreed, that no further action is required at the following sites:

- ◆ Landfill No. 1 (LF02)
- ◆ Waste Accumulation Area (SS01)
- Road Oiling (OT04)
- ◆ White Alice Site (OTO5)
- ◆ UST at Fuel Station (OT06)
- ◆ The Fire Training Area
- The Paint Can Site

The report continues:

The Drum Dump and the USGS Drill Site are two recent points of interest identified at Fort Yukon LRRS. The sites were sampled during the 1994 field season and the sampling results indicate that no significant contamination exists at either site. No further action is recommended at the Drum Dump and the USGS Drill Site.

The Risk Assessment concluded:

The human health risk assessment concluded that concentrations of volatile and semivolatile compounds and metals in soils and sediment samples are not at levels of concern for adverse human health effects under a residential use scenario. The conclusion was based on comparison of sample results to risk-based concentrations, to other screening-level criteria for protection of groundwater, and to U.S. Environmental Protection Agency guidelines for lead in soil.

The ecological risk assessment targeted two ecological receptors, the Arctic ground squirrel and the willow ptarmigan. The assessment evaluated bioaccumulation of the chemicals found at Fort Yukon in the food and levels in the soils, and compared dietary levels to literature toxic dose values. The findings indicate that the population of these animals, even individuals, is not at any significant risk due to the concentrations of chemicals of concern present at the LRRS.

The community should closely monitor the results of the final study, and pursue full explanations to any questions or issues that remain unresolved.

Expansion of Military Operations Areas (MOAs)

With the ending of the Cold War and the return of overseas military forces, Alaska has become more important for training and preparation for future conflicts. The Air Force holds an annual series of flying exercises called *Cope Thunder* based at Eielson AFB near Fairbanks and Elmendorf AFB in Anchorage. These exercises operate in several Military Operations Areas (MOA's) located throughout Interior Alaska. A MOA is a Special Use Airspace used for air combat training and high speed maneuvers. There are two MOAs in the vicinity of Fort Yukon:

- YUKON 2 is a permanent MOA centered over Circle Hot Springs. Its northwestern boundary comes to about 30 miles southwest of Fort Yukon.
- YUKON 5 is a temporary MOA running from about 20 miles east of Fort Yukon to the Canadian border. The northern boundary of YUKON 5 is over Chalkyitsik.

The Air Force is proposing to restructure and upgrade MOAs in Alaska to provide for more realistic tactical flying training. In August 1995, the Air Force issued a *Final Environmental Impact Statement* (FEIS) for the Alaska Military Operations Areas. The proposal affects much of Interior Alaska, and focuses on adding or changing the use of several Military Operations Areas or MOAs. For the Fort Yukon area, the FEIS proposes to:

- convert YUKON 5 from temporary status to a permanent MOA. This would eliminate a lengthy approval process each time the Air Force wishes to include this area in an exercise, and ensure the area is posted on all FAA aviation charts

- ◆ continue to conduct supersonic flight in YUKON 2 MOA, and add supersonic flight to YUKON 5 MOA
- ◆ continue to conduct up to six Major Flying Exercises (MFEs) per year (not to exceed 60 days per year)
- ◆ continue to use chaff and flares in YUKON 2 and authorize chaff and flares in YUKON 5
- ◆ on a "routine training day", change the potential number of flights in YUKON 2 from 14 to 12, and in YUKON 5 from none to "less than one"
- ◆ during a Major Flying Exercise, change the potential number of daily flights in YUKON 2 from 152 to 201, and in YUKON 5 from 132 to 170

The Air Force held 15 public hearings throughout the state, including meetings in Fort Yukon during October 1994. Transcripts of these hearings are found within the FEIS. Concerns expressed by those testifying include:

- a long-standing lack of trust with agencies such as the Air Force
- excessive noise in the community from flights, including 1 or 2 sonic booms over town almost every summer
- questions over the origin of subsistence data in the EIS, and whether CATG and local resources had been contacted and made part of the study team
- concern over trappers working beneath the MOAs east of Fort Yukon all the way to the border
- that at least five pairs of nesting peregrine falcons along Porcupine River were not shown in the draft report.
- concern for the effects of noise on moose and other animals
- concern for the long-term health of waterfowl and other birds
- concern for fires potentially started by flares and chaff
- concern that trappers and Native allotment holders under the MOAs have not been contacted
- opposition to the Air Force proposals as another threat to subsistence
- concern by CATG that a through study of subsistence impacts has not been done

In response to comments received from the public, the Air Force made over 30 major changes or modifications to the preferred alternative. Major changes affecting the Fort Yukon area for YUKON 2 and YUKON 5 include:

- ◆ reducing noise impacts to peregrine falcons and other resources by increasing existing flight avoidance efforts on the Yukon, Charley, and Kandik Rivers, within appropriate areas of YUKON MOA's 1, 2, 3, and 4, and by extending the avoidance period from April 15 to September 15
- ◆ minimizing potential impacts to subsistence/sport hunting and late season recreational activities by conducting no Major Flying Exercises during September
- ◆ minimizing potential impacts to wildlife and recreation activities by ensuring at least 2 weeks between Major Flying Exercises
- ◆ reducing potential impacts to subsistence and other resources by restricting the use of YUKON 5 to Major Flying Exercises
- ◆ reducing potential noise impacts by raising the minimum altitude of the YUKON 5 to 5,000 feet above ground level (AGL)

- conducting supersonic flight at or above 5,000 feet above ground level, or 12,000 feet above sea level, whichever is higher
- protecting "at risk" wildlife populations by restricting overflights during critical life-cycle periods
- ◆ establishing a Resource Protection Council consisting of three inter-agency (federal, state and Air Force) teams: 1) Resource Protection/Mitigation, 2) Public Information, and 3) Research and Monitoring

The Air Force also maintains a free 24-hour per day noise complaint number at (800) 538-6647.

The FEIS includes a listing of persons and agencies contacted. This list includes CATG, the Yukon Flats National Wildlife Refuge, and Tanana Chiefs Conference. According to the distribution list, a copy of the FEIS was sent to Native Village of Fort Yukon. Sometime in the spring of 1996, the Secretary of the Air Force (or her designee) will issue a Record of Decision approving, disapproving or modifying the recommendations of the FEIS. Final authority for approval then rests with the Federal Aviation Administration (FAA).

Summary

Land use in Fort Yukon is dictated to a large extent by the natural environment. The Yukon Flats provides a bounty of subsistence resources which sustains traditional Athabaskan values. The town's historic location along the Yukon River provides opportunities for waterborne resupply, year-round surface travel routes and seasonal fishing. Flooding and erosion hazards posed by the Yukon and Porcupine Rivers have been reduced for much of the town by the completion of a series of dikes and earthworks. Fort Yukon has a well defined town center with a mix of residential, commercial and limited industrial activities. The recent transfer of lands from G-Z Corporation to Native Village of Fort Yukon should help safeguard traditional lands for future generations. The pending completion of ANCSA Section 14(c)(3) negotiations should allow more land to be developed for housing and other important community uses.

Chapter 5

Public Facilities and Services

This chapter describe the roles and responsibilities of the City of Fort Yukon, Native Village of Fort Yukon, Council of Athabascan Tribal Governments, and other civic and service organizations. It also provides an overview of city utilities and public services. Finally, this chapter describes recent developments regarding potential natural gas supplies for Fort Yukon. Figure 5-1 matches major public facilities and services in Fort Yukon with the primary providers. Community Facilities and Services are shown on the Land Use Map.

Figure 5-1
Public Facility and Service Providers in Fort Yukon

Public Service	City of Fort Yukon	Native Village of Fort Yukon	Other local provider	State/Federal Agency
Police	XX			
Fire Protection	Volunteer Fire Dept.			
Water Utility	XX			
Sewer	XX			
Landfill	XX			
Cable Television	XX			
Games Operations	XX			
Liquor Store	XX			
Public Works	XX			
Auto Repair	XX			
Levee and Flood Control	XX			
Road Maintenance	XX			
Development Permit Program	XX			
Washeteria	XX			
Tribal Operations		XX		
Realty Services		XX		
Employment Assistance		XX		
Social Services		XX		State of Alaska

Public Service	City of Fort Yukon	Native Village of Fort Yukon	Other local provider	State/Federal Agency
Public Schools			Yukon Flats School District	
Clinic and Health Care			CATG	
Dental Program			CATG	
Mental Health/Alcohol Programs			CATG	
Electric Power			G-Z Utilities	
Radio			Gwandak Public Broadcasting, Inc.	
Magistrate				State of Alaska
Road Construction				DOT&PF
Airport Construction and Upgrades				DOT&PF
Airport Maintenance	Under contract to DOT&PF			DOT&PF
Museum/Visitor Center				
Library				

City of Fort Yukon

Fort Yukon incorporated as a Second Class City in 1959, and conducts its affairs under a manager form of government. City Council members are elected at large to staggered three-year terms. Elections are held annually. The Mayor of Fort Yukon is elected by the Council to serve a one-year term.

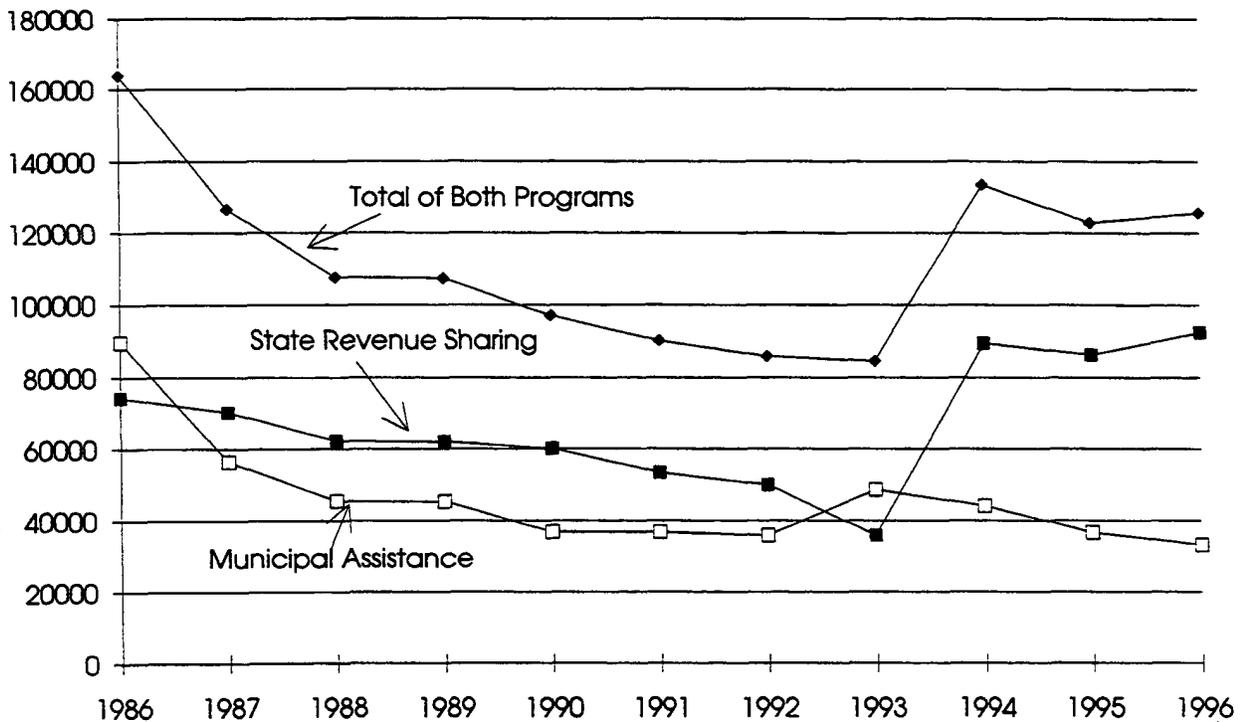
An appointed City Manager reports to the City Council. The City Manager is responsible for the day-to-day operation of the City, as well as recommending long-term initiatives to the City Council. The Manager's supervises or oversees the duties and responsibilities of:

- ◆ the city attorney
- ◆ city clerk
- ◆ Chief Financial Officer, city treasurer and bookkeeper
- ◆ cable television service
- ◆ construction and capital projects
- ◆ elderly transit service
- ◆ elderly program

- ◆ volunteer emergency medical technicians
- ◆ volunteer fire department
- ◆ games operation
- ◆ grants administration
- ◆ city liquor store
- ◆ police department
- ◆ public works, and
- ◆ water utility

The largest source of outside revenues comes from the combination of state Revenue Sharing and Municipal Assistance grants, averaging \$104,000 from FY 1994 - FY 1996. The average amounts of these programs have fallen dramatically since 1982 when cities and boroughs received a total of \$142 million. The 1995 total was \$62.6 million. The Alaska Municipal League (AML) proposes to level out this decline by adopting a Alaska Municipal Basic Services Program. Fort Yukon's total revenues from these two programs has declined from \$163,902 in 1986 to an estimated 125,595 for 1996. The following graph shows the gradual decline in these programs.

Figure 5-2
Fort Yukon Revenues from State Revenue Sharing and Municipal Assistance



In addition to revenue sharing and municipal assistance, local municipal services are funded by a 3% sales tax, state capital projects and city-owned businesses and enterprises. Figure 5-3 shows city revenues for FY 93 through FY 95. The largest single source of revenue during this period has been income from the city operated liquor store, averaging \$135,000 per year. The 3% sales tax is the second largest local generator of revenue, raising an average of over \$89,000 each year. The water utility's revenues have increased over the period, earning \$25,000 in FY95. The City is responsible for public safety and fire protection, public works, water, elderly transit, and museum services.

The City's Police Department is staffed with three full-time, certified police officers. There is a holding facility for one prisoner at the State Office Building. The State also operates a Magistrate's office.

The City has an active Volunteer Fire Department. The City operates a 1,500 gallon pumper truck, and a high volume diesel fire pump is part of the water system. More than 20 hydrants are located throughout the road system. The pumper truck lacks essential fire fighting gear, however, and the town has experienced a relatively large number of fatal house fires in recent years. In 1995, the school burned to the ground.

The City owns and maintains a modern ambulance and several trained volunteer emergency medical technicians. Under an agreement with CATG, the ambulance is operated by clinic personnel and housed at the clinic.

City Equipment

The City has a significant history of carrying out successful construction projects. The City owns and maintains the following construction equipment:

Figure 5-3
City-Owned Construction Equipment

Quantity	Equipment	Quantity	Equipment
1	Hydraulic excavator	3	10-yard dump trucks
1	D-6 caterpillar Dozer	2	grader
1	John Deere 450	1	case backhoe
1	444 loader	1	boom truck
1	5-yard dump truck	5	water pumps

Volunteer Fire Department Upgrades

A high priority for the city is the upgrade and training of the Volunteer Fire Department. The community has had a number of tragic fires, including the loss of the school in the spring of 1994. The City has applied for two state grants which would be used to purchase modern fire

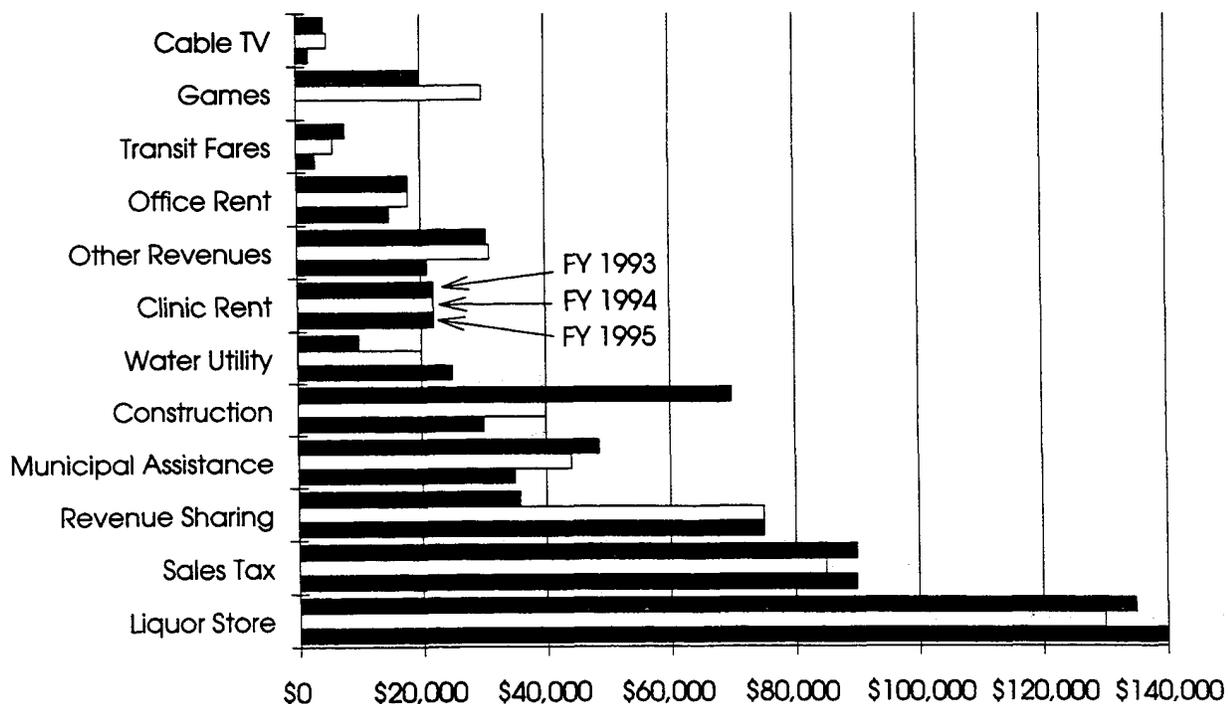
fighting equipment and to train all volunteers. Needed equipment includes chain saws, axes, oxygen back packs, portable fire extinguishers and upgrades to the fire truck. The grants include:

Figure 5-4
Grant Request to Upgrade Fire Protection Services

State capital project matching grant program through the Office of Management and Budget, Office of the Governor (AS 37.06)	\$30,000
City's local match	1,579
Community & Regional Affairs	35,000
City's local match	3,421
Total Amount of Project	\$70,000

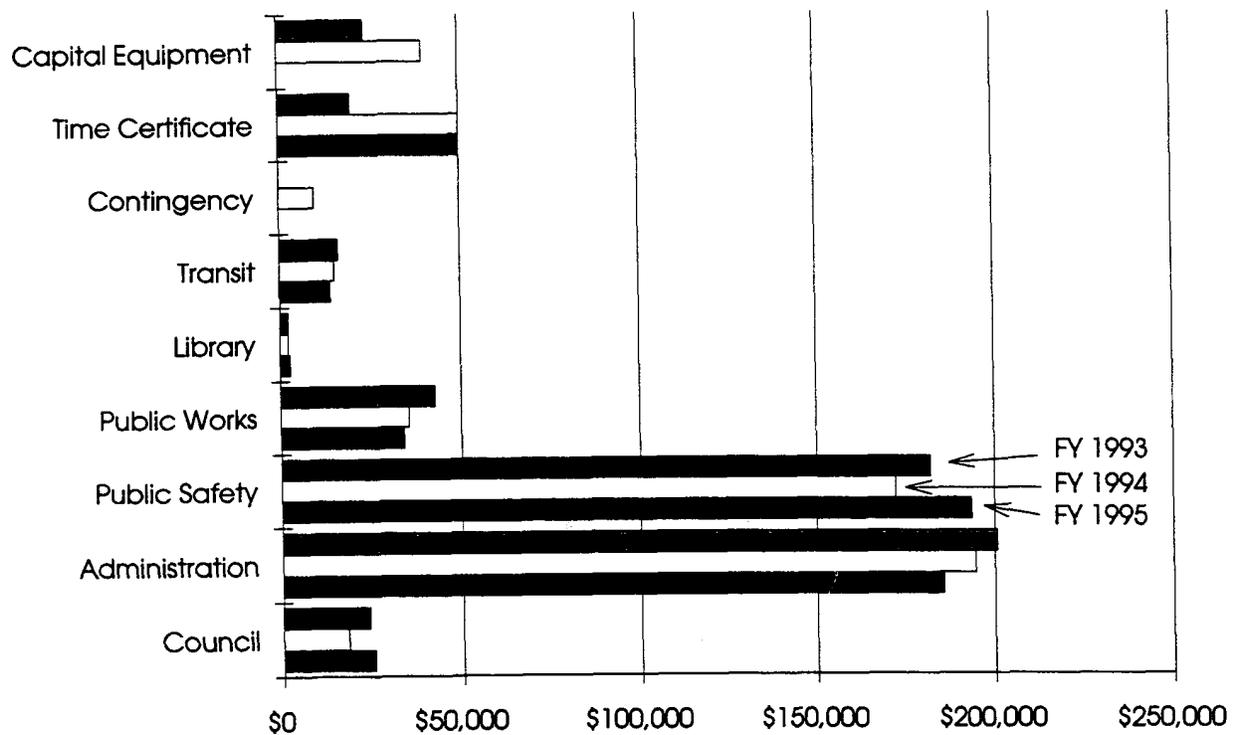
City revenues from FY 1993 through FY 1995 are shown as Figure 5-5. The largest sources of revenue to fund city services come from the liquor store and the local sales tax, followed by state revenue sharing and municipal assistance. Revenue from the liquor store averaged \$135,000 per year over this period, while sales tax generated an average of \$88,333 per year. Other revenues include construction grants, the water utility, rent from the clinic building, other office rent, transit fares, games and cable television.

Figure 5-5
City of Fort Yukon Revenues
FY 1993- FY 1995



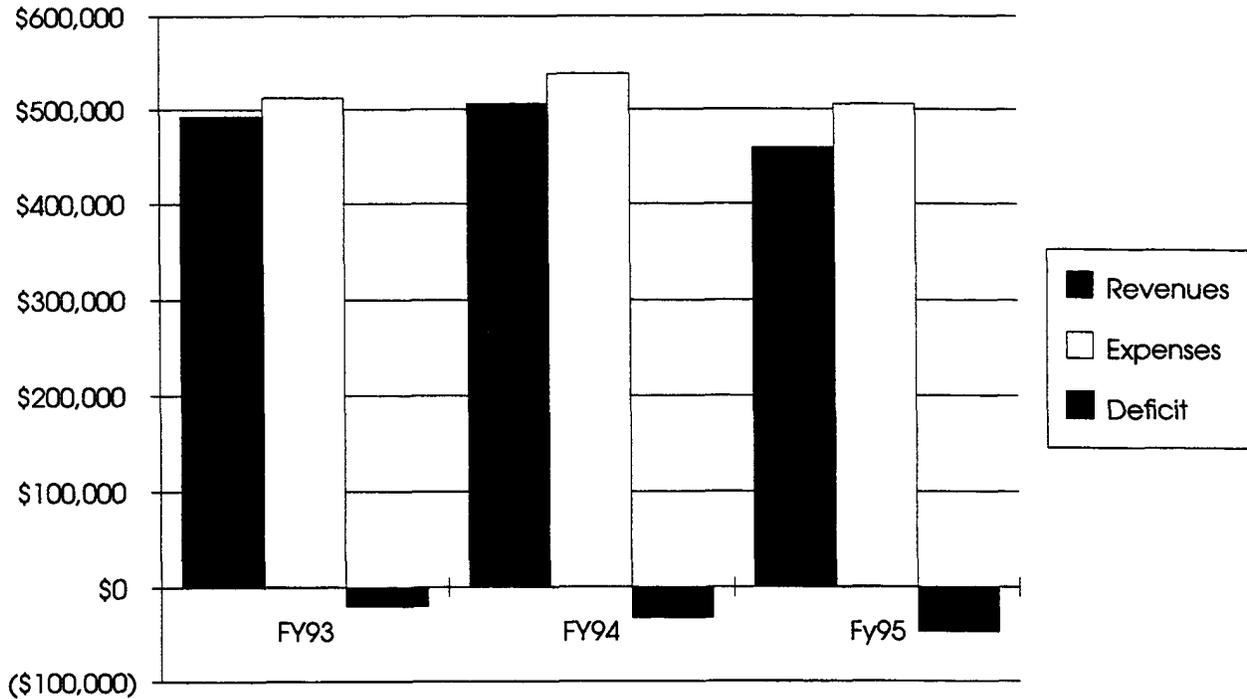
City expenses from FY 1993 through FY 1995 are compared on Figure 5-6. The largest two categories of expenses are for city administration and public safety. Administration expenses averaged about \$193,600 over the past three fiscal years, while public safety averaged \$182,400 over the same period. Council expenses were \$22,400 per year. The Elder Transit System cost an average of \$15,300 to operate.

Figure 5-6
City of Fort Yukon Expenses
FY 1993- FY 1995



One of the more important challenges for the city government is to bring expenses in line with revenues. Over the past three fiscal years, the City spent more than it earned. City figures show a deficit of \$19,850, \$32,100, and \$46,850 for FY93, FY94 and FY95 respectively. On the other hand, the City has no bonded indebtedness and a total property assessment of \$25,900,000. City staff have received state recognition for professionalism in providing public works and utility services.

Figure 5-7
 City of Fort Yukon
 Revenues and Expenses
 FY 1993 - FY 1995



City of Fort Yukon Capital Projects

The City of Fort Yukon, together with other local organizations, and state and federal agencies, has an active capital projects program. The City Council recently adopted it's FY 1996 Capital Project Priority List:

Figure 5-8
City of Fort Yukon
Capital Improvement Projects
FY 1996 Priority List

Community Center	\$ 200,000
Fire Protection Upgrade	\$ 35,000
Tourism Development - Northern Lights Center	\$ 150,000
Road Improvement	\$ 318,000
New Landfill	\$ 150,000
Dust Control	\$ 50,000
Sewer System Feasibility Study	\$ 50,000
Elderly Facility	\$ 2,000,000
Mental Health Facility	\$ 250,000
Clinic Facility Phase II	\$ 200,000

The following tables summarize both funded and potential projects, and are partially adopted from the *Rapids Community Database*, maintained by the Department of Community & Regional Affairs.

Figure 5-9
Recently Funded Projects in Fort Yukon

Fiscal Year	Agency	Project Description	Stage	Total Cost	Agency Cost
92	DOT&PF	Airport Land Acquisition	Completed	\$306,000	\$30,600
93	DCRA	Renovate Library, to include museum and radio station	Completed	\$347,086	\$95,000
94	DOA	Road Improvements	Completed	\$100,000	\$100,000
93	HUD	Housing Modernization, renovate 7 HUD housing units	Construction	\$197,840	\$197,840
94	DOT&PF	Airport Apron Expansion	Construction	\$386,147	\$38,615
94	DOT&PF	Airport HVAC Digital Control System	Construction	\$68,000	\$6,800
93	DCRA	Comprehensive Plan	Underway	\$59,200	\$59,200
93	HUD	Construct 12 Low Rent Housing Units	Preliminary	\$1,813,483	\$1,511,236
94	DOA	Road Improvements	Preliminary	\$31,527	\$29,951
94	DCRA	Wild Rice Farming Study	Preliminary	\$51,200	\$32,000
95	DOA	Solid Waste Management Improvements			\$29,600
95	FEMA	Flood Control Dike	Completed		

Figure 5-10
Planned or Potential Projects in Fort Yukon

Fiscal Year	Agency	Project Description	Stage	Total Cost	Agency Cost
94	DEC	Landfill Renovation. "Our solid waste landfill will be brought up to standard and additional cover supplied to bury any debris not presently covered		\$50,000	\$50,000
94	DCRA	Roads and Dust Control			
94	DOT & PF	Local Streets and Roads Improvements	Completed	\$375,000	
94	DCRA	Prepare ANCSA 14(c) Map of Boundaries			
95	DCRA	Bulk Fuel Repairs: tank farms: school - 1, community - 1, other gov't - 1, electric utility - 1, private - 2.		\$2,075,000	
95	DOE	New School Construction	Completed	\$13,650,000	\$13,377,000
96	DEC - VSW	Feasibility Study for water, sewer and solid waste	Should be underway in 1996	\$100,000	

Borough Government

There is no organized borough government in the Yukon Flats region. The Fairbanks North Star Borough is located south of the Yukon Flats, while the North Slope Borough boundary is north of Arctic Village. There have been two regional government feasibility studies undertaken to look at the merits of forming a Yukon Flats borough. The first study, prepared by Darbyshire & Associates, in 1979, concluded that a Yukon Flats Borough would generate millions of dollars annually from property tax revenues. The major source of these revenues would come from the high assessed value of pump stations and facilities along the trans-Alaska pipeline corridor. The findings of the study were never adopted by the region's villages, however. A more recent borough study was prepared in the late 1980's by Tanana Chiefs Corporation (TCC). TCC examined the option of forming a "horseshoe borough" which would surround Fairbanks and include the Yukon Flats. By this time, however, the assessed valuation of pipeline properties had fallen significantly, and projected revenues were not enough to justify further consideration. There is presently little interest in forming a borough in the Yukon Flats.

Tribal Government

The Native Village of Fort Yukon (NVFY) was chartered by the federal government in 1940 as the IRA (Indian Reorganization Act) Council. NVFY currently has 771 members, and is governed by a seven-member elected council. The council's activities are supported through grants and contracts for social and economic development projects, capital projects, and the provision of BIA services related to education, social services, employment, housing and tribal operations.

The Mission Statement of the Native Village of Fort Yukon I.R.A. is:

To exercise governmental authority to promote economic and social development, advocate and secure tribal rights, to secure tribal lands, to enhance educational opportunities and to protect traditional cultural values with a unified voice on behalf of its' Tribal members.

NV FY has an impressive track record in raising funds and obtaining grants. In 1986, for example, the organization raised just \$137,480. In fiscal year 1994, this amount had climbed to over \$926,000, twice the revenues generated by the City.

NV FY has also negotiated a self-governance compact with the Bureau of Indian Affairs. This arrangement brought in \$762,384.00 to be used for:

- social service programs
- General Assistance/ Work Experience Program
- Realty
- Education and Employment
- Tribal Operations
- Office Administration

During 1993, the Native Village of Fort Yukon and Gwitchyaa Zhee Corporation signed an agreement to transfer 103,680 acres to the Tribal Government. The transfer agreement allows the Corporation to continue to receive economic benefits from the use of the land. According to the I.R.A.'s Annual Report, the land was transferred because of:

- fear of loss under corporate ownership, and
- the return of land to tribal ownership

NV FY is a strong advocate for the designation of Indian Country and tribal rights in the region.

Council of Athabascan Tribal Governments (CATG)

CATG was established in 1985 by the Chiefs, Elders and other members of tribal governments of the Yukon Flats region. Based in Fort Yukon, CATG adopted the following Vision Statement and Mission Statement:

CATG Vision Statement

The Council of Athabascan Tribal Governments' (CATG) vision is of self-sufficient communities with a shared commitment to promoting common goals and taking responsibility for a culturally integrated economy based on customary and traditional values in a contemporary setting.

CATG Mission Statement

The Council of Athabascan Tribal Governments' mission is to advocate and provide technical assistance to enhance the regional economy by protecting and supporting local employment and private enterprise; to protect and manage traditional tribal land and resources for future generations; to empower tribal governments; to provide and improve health care and promote healthy living.

Health Care

CATG has been very successful in improving health care, advocating for tribal rights, and working towards a sustainable economy which is compatible with the subsistence lifestyle. The most visible part of CATG is the Yukon Flats Health Center (YFHC), which operates under contract to the Alaska Area Native Health Service. The Mission Statement of CATG's Health Department is:

To provide programs and services that will raise the health status of the people who live in the Yukon Flats Subregion.

The YFHC provides primary care and 24-hour emergency support services to residents in the Yukon Flats Subregion, specifically, Arctic Village, Beaver, Birch Creek, Chalkyitsik, Circle, Fort Yukon, Sevens Village and Venetie. In addition, CATG assists Tanana Chiefs Conference (TCC) in coordinating other health programs in the region. These include:

- ◆ Community Health Aid Program (CHAP)
- ◆ Dental
- ◆ Community Health Representative (CHR)
- ◆ Emergency Air Ambulance Services
- ◆ Mental Health/Alcohol
- ◆ Home health Services

The clinic is located near the airport, and is owned by the City of Fort Yukon. The clinic staff consists of almost 12 full-time equivalent personnel, including one family nurse practitioner and two physician's assistants. The clinic provides the following services to the community:

- ◆ primary medical care
- ◆ referral and coordination of prenatal, well-baby and family planning clinics
- ◆ cooperate and assist with physician visits
- ◆ cooperate and assist with psychologist visits to the Fort Yukon Care Center
- ◆ maintain medical records
- ◆ maintain a pharmacy
- ◆ provide 24-hour emergency services
- ◆ respond to life threatening emergencies
- ◆ provide community prevention and health education services
- ◆ support services

Housing

There are about 225 housing units in Fort Yukon. Most homes are frame and/or log construction, and nearly all units are single-family homes. Few of these homes meet current codes for construction or energy conservation. There are a few apartment units, but no apartment buildings and only eight mobile homes. Most residents own their homes. Rental housing is virtually non-existent. There are very few vacant, livable dwellings. **The City should ensure that all new homes meet current Arctic energy standards and construction technology.**

Education

The Yukon Flats School District is headquartered in Fort Yukon. The largest of the district's communities, Fort Yukon has an enrollment of 165 students, preschool through 12. The Elementary School has an enrollment of 133, preschool through grade 8. It has 11 teachers and 4 instructional aids. The High School has an enrollment of 32 in grades 9-12, 4 teachers and 1 instructional aide. There are no district housing units available for teachers in Fort Yukon.

The University of Alaska's Fort Yukon Learning Center offers programs for all villages in the region, including undergraduate college courses leading to an Associate of Arts degree. Most courses are taught by audio-conference with local facilitators. Other courses are taught locally.

Communications

Interior Telephone Company, based in Anchorage, provides local telephone service. Long distance service is provided by Alascom, Inc. through a satellite earth station. In 1989, there were 107 residential and 76 commercial customers in Fort Yukon. All customers have single-party service. A few households have citizen's band radio equipment. The basic rate for residential service is \$24.40 per month, and the commercial rate is \$36.30 per month. The local

system can accommodate up to 400 lines which is adequate to meet anticipated increases in the demand for telephone service.

Nearly all households have televisions. The City has a satellite dish and provides a six-channel cable service to residents on a subscription basis for \$30 per month. In 1989, 72 households subscribed to this service. Most residents also receive ARCS (formally Ratnet) which provides a mix of the major national networks. Gwandak Public Broadcasting, Inc. broadcasts as KZPA on 900 on the AM dial (KO2HQ translator). ITC does not have any local staff in Fort Yukon.

Electric Power

Power is supplied by G-Z Utilities, a subsidiary of Gwitchyaa Zhee Corporation. 1,500 kW of electricity are produced by four generators. Residential rates are 40 cents for up to 100 kW, 31.12 cents up to 500 kW, and 23.62 cents for use over 500 kW. Commercial rates are 53.06 cents for the first 100 kW, 46.11 cents up to 500 kW, and 38.62 for more than 500 kW per month. For a discussion of the Power Cost Equalization (PCE) Program, see page 3-15.

Water System

A central supply of treated water is available to Fort Yukon residents with distribution to all city lots. Two 8-inch drilled wells at the southeast edge of the city on the lower end of the Yllota Slough provide a water source for the only piped system in Fort Yukon. According to the U.S. Public Health Service, wells are cased to 30 feet, each is equipped with a 60-gpm pump and has a sustained capacity of 60 gpm with a drawdown of 38 inches. Static water level was at 13 feet at the time of drilling (November 1974).

Water is pumped from the well to a water treatment building located a short distance from the well. The water is chlorinated, filtered and stored in tanks enclosed within the treatment building. Water is circulated from the treatment building through an 8-inch supply line and a 4-inch return line routed through a 1,500 foot buried wooden walk-through utilidor. Heat is added to the loop by two boilers and a heat exchanger. Service lines connect the school, community hall and state office buildings.

Previous Studies

Utility service has existed for the Fort Yukon school since at least the 1950's. Since that time, various studies have been conducted which considered extending utility service to additional portions of the community or even the entire city. Examples of these studies include:

- ◆ *Initial Plan and Program - Water Supply and Waste Disposal Planning Area V.* State of Alaska by Linck-Thompson, December 1972.
- ◆ *Public Health Service Water and Sewerage Facilities,* Fort Yukon, April 1972.
- ◆ *Public Health Service Fort Yukon Water and Sewer Plan,* 1976

- *Alaska State Department of Transportation - Fort Yukon Water and Sewer. Review, April, 1981.*
- *Fort Yukon, Alaska Water and Sewer Study, January 1982.*

Water for the community is obtained from two wells located near Yllato Slough east of the water treatment plant. Treatment is provided in a 47 x 34 foot heated building using a package Magnifloe process with two 5,000 gallon storage tanks. The capacity for this facility is 59 gpm (85,000 gpd). Distribution occurs through a below-ground recirculating HDPE pipe system. Most of the houses in the community that have year-round occupants are served with water. Water is continually circulated through the system and heat is added as needed to prevent freezing. The system uses waste heat from the community electric power generation plant.

Sewer System

The typical method of disposing of sewage wastes in Fort Yukon is with individual on-site septic systems. Septic tanks and drain fields usually take the form of crib systems. Notable exceptions are the State Office Building and the new school. Both of these facilities pipe sewage directly to a lagoon that serves just these buildings. Newer government-funded homes which require DEC approval have been required to install holding tanks in many instances in order to meet minimum health and groundwater standards. The City maintains a pumper truck for cleaning septic and holding tanks. Effluent collected from septic and holding tanks is transported to the city sewage lagoons located near the city landfill.

The main problem with individual septic systems in Fort Yukon comes from the high ground water table which prevails throughout most residential areas in town. Many drain fields leach raw sewage directly into the high ground water. This contaminated material migrates to swampy low areas of town, and appears as surface water. Standing surface water containing fecal contamination is a very significant health hazard. Research indicates that tests performed in the past have found evidence of fecal contamination. **The community should make it a priority to obtain current and accurate test data to clarify the extent of this hazard. If contamination is confirmed, the city should aggressively pursue state and federal assistance to install a piped sewage collection system.**

Solid Waste

Solid waste is disposed of at a landfill site constructed in 1975 approximately 2 miles north of town along the FAA road. A collection service is provided. Combustibles (paper, wood, cardboard) are typically burned in barrels, and the dump is used mostly for metals such as tin cans, auto parts, and discarded appliances. The landfill violates FAA regulations, since it's located within 5,000 feet of the airport.

Water/Sewer/Solid Waste Feasibility Study

The State of Alaska's Village Safe Water program is funding a feasibility study to examine options for designing and upgrading the community's sanitation systems. The budgets is estimated to be around \$100,000 and a consulting firm should be retained by the state early in 1996. **This is an excellent development, and should be fully supported by the community.**

Alternative Energy Source -- Natural Gas?

A recent study on *Natural Gas Feasibility for Rural Communities* (polarconsult Alaska, inc.) suggests that the potential exists for natural gas near Fort Yukon which could be tapped as a primary energy source for the community. The study notes that Fort Yukon lies above a large geologic basin (called the Yukon Basin) that is possibly a result of the intersection of two major continental fault systems. This basin is believed to contain beds of coal and possibly natural gas. The Upper Yukon area that shows the most promise for gas development is on the Yukon Flats northeast of Rampart and northwest of Eagle.

Individuals and agencies are looking for more efficient, less costly energy supplies for rural Alaska. The State's Power Cost Equalization program currently provides about \$17.3 million in yearly subsidies on electric bills in rural communities. According to the 1990 federal census, 43% of Fort Yukon homes burn fuel oil, while 57% use wood. Grant moneys are being provided to bring bulk fuel storage tanks up to code requirements, to upgrade power generation, and to make more efficient use of energy while reducing demand. Replacing oil and other types of fuels with natural gas may be cost effective measure for both the state and the rural communities.

The polarconsult study notes:

Barrow is the only Alaska rural community where natural gas is both produced and used. Barrow has a sound economic base which enables natural gas production to continue and the community is situated where substantial, very shallow, natural gas reserves were discovered by the Federal Government during exploration of Navel Petroleum Reserve No. 4. To our knowledge, no other village or rural communities possesses a dedicated source of natural gas.

Although the report had a statewide perspective, much of it focused on Fort Yukon as a hypothetical example. Fort Yukon was chosen for study because:

- ◆ of the high cost of diesel fuel currently in use
- ◆ the town is the largest population center in the region
- ◆ there are no other renewable resources, such as hydropower, or the possibility of connecting to a central power grid, and finally,
- ◆ there is a reasonable chance of finding the resources.
- ◆ Some subsurface information is known from previous drilling and seismic studies
- ◆ Local surface and mineral rights are available

- ◆ The community is accessible by boat from Circle, by barge from Nenana or the Dalton Highway-Yukon River bridge crossing

The report states:

In the summer of 1994, the United States Geological Survey drilled a fully-cored hole to assess paleoclimate changes (from pollen analysis) near the village of Fort Yukon near the center of the basin. A bed of Miocene-aged coal greater than twenty nine feet thick was intersected below 1,200 feet (Smith, 1995). The hole was abandoned due to the risk of gas blowout before reaching the base of the coal. Lab results showed that the coal has a high water content and a resultant low BTU content, making it classify as a lignite. Gas production from this shallow coal could generate large quantities of water, which if salty, might require disposal in a deep permeable interval. Produced fresh water could be treated and used as a domestic water source for the town. It is more likely that a production well would tap deeper, higher rank coals which may be present between 1,200 and 3,000 feet.

The presence of this thick coal, which showed evidence of biogenic gas, affirms the suspicion that there are thick coals with gas potential in the subsurface within the Yukon Basin. With older Tertiary coals seen along the margins of the basin, the discovery of thick, more mature coals with depth is very possible. Additional drilling will confirm this.

The study estimated the cost of converting all buildings in town to natural gas to be \$874,000. The study points out the risks involved in proceeding with gas exploration and development:

- ◆ preliminary drilling may show no commercial natural gas. The cost to determine this would be \$310,000.
- ◆ Drilling problems could increase estimated costs.
- ◆ Construction of a distribution system and conversion might exceed estimated costs.
- ◆ A median family income of \$17,969 (based on the 1990 census) cannot support the cash outlay for gas or conversions. These households may have to continue to burn wood.
- ◆ Operational risks (higher than normal maintenance).

Figure 5-11
Estimated Cost to Convert to Natural Gas

Type of Building	Estimated Cost to Convert to Gas
240 residential buildings	\$408,000
40 public and commercial buildings	\$96,000
Fort Yukon School	\$10,000
Power plant	\$360,000
Total cost of conversion	\$874,000

The polarconsult study then proceeded to estimate the total cost of exploring, drilling, and producing natural gas to supply Fort Yukon. The total cost estimate, assuming commercial quantities of gas are found, including a citywide distribution system is \$5.1 million.

Figure 5-12
Cost to Provide Gas to Fort Yukon

Description	Cost Estimate	Description	Cost Estimate
Land	\$50,000	Hookups	\$300,000
Permits	\$20,000	Conversions and Additions	\$524,000
Test well	\$310,000	Gas Engine-generators, two	\$350,000
Three production wells	\$1,350,000	Total	\$4,024,000
Production equipment	\$150,000	Engineering & Project Management	\$550,000
Compressors	\$150,000	Training	\$30,000
Transmission line, 2 miles	\$100,000	Administration	\$180,000
Main Distribution	\$435,000	Contingencies	\$365,000
Material	\$85,000	Grand Total	\$5,154,000
Storage	\$200,000		

What are the long-term savings that would encourage development of natural gas? Polarconsult estimates that the community would save \$6.1 million in energy costs in current dollars over a twenty year period.

The Comprehensive Plan fully supports an aggressive follow-up to the polarconsult report.

The community should:

- **invite the consultant to Fort Yukon for a briefing with the community**
- **become more informed concerning the pros and cons of natural gas as a local energy source, including safety concerns and the opportunities for local employment**
- **ensure the study is distributed to the Governor, legislative representatives and the Congressional delegation**
- **if the community favors the idea of natural gas, seek funding to support a full-fledged exploratory drilling program.**

Chapter 6

Transportation Plan

Fort Yukon depends for access on air and river transportation. The majority of goods and people are transported by air, while river barges and boats provide additional service during the summer months. Barges are limited to several trips each season. No roads connect the village to other population centers, and none is seriously proposed. Unpaved roads within the town provide access to stores, government facilities, recreation sites, and homes.

This chapter describes existing transportation routes, facilities and infrastructure, and identifies proposed improvements which affect the community.

Local Roads and Trails

The roughly 18 miles of road in Fort Yukon are owned and maintained by the City. Roadways outside the city limits located on Village Corporation lands are owned by Gwitchyaa Zhee Corporation. There are no state roads in the area. In addition to local streets, roads provide access to the airport, solid waste disposal site, the Air Force station and the gravel pit. The Fort Yukon City Transit bus system provides rides throughout the town. The fare is \$3 of a one-way trip, and senior citizens ride free. Street right-of-ways vary in width, and in some cases contain structures. None of the streets is paved, but grading is adequate. Most roads are about 20 feet wide, and are constructed upon three to four foot thick gravel embankments. Roads and paths do not always follow a right-of-way, and vacant private property is commonly used by foot traffic and in some cases by cars. Property lines are not often visible in Fort Yukon.

The principal roads in the community include 3rd Avenue which connects the barge landing (northwest of town) to the airport, school complex, the Alaska Commercial Store, the Post Office, State offices, the Vocational Education facility and the Air Force station to the east of town. Spruce Street connects with 3rd Avenue near the center of town and provides access to the hospital, city office, two commercial businesses, and land to the northeast of town.

Third Avenue, is contained within a 60 foot right-of-way (ROW) inside the townsite, and a 30-foot ROW east of the townsite. No ROW is designated for 3rd Avenue from the townsite boundary west to the barge landing site. Other streets within the townsite have 20-foot to 75-foot ROWs designated, with 55 feet the predominant standard within the eastern portion of the townsite and 30 feet within the western portion.

Road Dust

Gravel is mixed with a substantial amount of silt, producing extremely dusty conditions during summer. Dust is a health hazard. Currently, the best method of reducing dust is to encourage and enforce a maximum speed of 10-15 mph along these roads.

There are over 100 privately owned cars and pick-up trucks, 100-200 all-terrain vehicles, and over 150 snow machines in use in Fort Yukon. Additionally, there are 30 to 40 pieces of heavy equipment available for construction operations. Most households have at least one snowmachine which is the primary mode of transport during the winter. The community has an extensive system of winter trails which are used primarily by snow machines and dog teams for travel, hunting, trapping, wood cutting and recreation. Winter trails link Fort Yukon with Birch Creek, Venetie, Chalkyitsik, Circle, and the Yukon Territory in Canada.

Principal trip generators include the school, community center, Alaska Commercial store and Post Office. All of these facilities are located along the central portion of 3rd Avenue. Because of the location of these major facilities, the location of major roads, and the town's orientation with respect to the Yukon River, travel predominantly occurs on an east-west axis. Spruce Street is the only important north-south route.

Local Road Improvements

During 1995, DOT&PF completed a local roads resurfacing project in Fort Yukon in an effort to reduce the dust problem. The resurfacing project involved placing 6 or more inches of crushed gravel aggregate and dust palliative on the levee roadways. A long-term solution to roadway dust is still required, however. A series of culverts was installed to improve seasonal drainage and remove flood waters. These roads included:

- ◆ Airport Way from 3rd to Spruce
- ◆ Clinic Road from Spruce to Airport Way
- ◆ 3rd from Airport Way to Spruce
- ◆ Sled Street -- William Loola St. to E. 1st Ave.
- Spruce from 3rd to Airport Way

The project coincided with the 1995 dike construction, and total project costs were \$375,000. No additional road improvements are planned by the state in the near future in Fort Yukon.

Breakaway Bridges

The City has proposed that one or more "breakaway bridges" be constructed across the nearby streams to provide safe access to wood gathering and subsistence sites. A breakaway bridge is designed to be removed during spring breakup to avoid potential damage from ice jams. These structures are used on the North Slope to support the extensive road network at Prudhoe Bay and Kuparak.

Air Transport

Fort Yukon is the local hub airport for all villages in the Yukon Flats area, and has been designed as a regional center for essential air service. The airport, located just west of the community, is owned by the State of Alaska. The 5,800 x 150 foot gravel runway (03-21) is equipped with runway lights and navigational aids. The airport's flight service station is remoted from Fairbanks. The runway is in good condition and is maintained by the city under contract to the Department of Transportation & Public Facilities (DOT&PF). DOT&PF leases several airport lots to air taxi services and other aviation-related businesses. The apron is suitable for handling cargo from large aircraft such as C-130 Hercules. About 11 private aircraft are based at the airport.

Larry's Flying Service, Wright's and Frontier Flying Service provide regularly scheduled service between Fort Yukon and Fairbanks, and between several of the Yukon flats villages. Charter air service is available from Fort Yukon to all villages in the region, as well as to point in Canada. The round-trip fare between Fort Yukon and Fairbanks averages about \$160. Fort Yukon residents depend almost totally on air travel for contact with Fairbanks, Anchorage, and other communities.

The airport was resurfaced by DOT&PF in 1991, and a palliative was added in an attempt to reduce the dust problem. Upgrades were also made to electrical equipment. No additional improvements are programmed for the next few years. DOT&PF intends to improve the taxiway and apron areas in "the out years" of their six year improvement plan for regional airports. A partial parallel taxiway could be constructed, or the apron could be enlarged towards the BLM site. These ideas are very preliminary at this stage.

There are no plans to improve Hospital Lake into a staging area for float planes. Although proposed by DOT&PF, community opposition has effectively eliminated this proposal from further consideration.

Water Transport

Barges and passenger vessels have been an important means of transportation along the Yukon River since 1869. In 1900, about 1,000 barges operated along the length of the river. Stern-wheeler steamers operated until the mid-1950's. Although barges have been largely replaced by air freight service, they continue to hold the market on heavy freight such as bulk fuel oil, vehicles and building materials.

Yutana Barge Lines services the community 3-4 times per year, while Yukon Navigation reaches Fort Yukon 8-10 times per season. The first barge usually leaves Nenana in late May and the last barge of the season is back in port by mid-September. Currently, 4-6 trips are made each season to Fort Yukon.

Local residents own about 80 riverboats which they use for recreation, hunting, fishing, other subsistence activities and travel to other villages along the river. During the winter months when the rivers are frozen, residents travel the rivers on snowmachine and dog sleds.

RS 2477 Surface Access Corridors

In 1866, the federal government passed Revised Statute 2477, granting broad rights-of-way over unreserved federal lands wherever roads, trails or other common routes existed. The Department of Natural Resources and other agencies have reviewed over 500 potential RS 2477 corridors throughout the state. If validated, these corridors would provide public surface access across much of rural Alaska. To successfully prove each right-of-way, the state must show the route was constructed or used when the land was unreserved federal land. By establishing the validity of these corridors, the state believes that public options will be preserved for the future. These corridors would provide public access, in the event a landowner charged entrance fees, or refused public access.

Three RS 2477 trails begin at or near Fort Yukon:

- RST 446 - Fort Yukon to Birch Creek Trail
- RST 477 - Fort Yukon to Christian Trail
- RST 478 - Fort Yukon to Beaver

RST #446 - Fort Yukon - Birch Creek Trail -- This 30 mile winter trail originates on the Yukon River south of Fort Yukon. It heads southeast for two miles to a cabin, then southwest for 12 miles to Twelvemile Lake. After crossing the lake, it ends 16 miles later at the town of Birch Creek. Surface owners include Gwitchyaa Zhee Corporation, Doyon, Ltd. and four Native allotments.

RST #477 - Fort Yukon - Christian Trail -- From Fort Yukon on the Yukon River, this historic winter trail travels northerly through Alexander's Village and the Yukon Flats. The trail ends at Christian on the Christian River. Total length is about 75 miles. Surface owners include Gwitchyaa Zhee Corporation, the wildlife refuge, Doyon, Ltd. and eight Native allotments.

RST 478 - Fort Yukon to Beaver -- This trail runs westerly from Fort Yukon, across the Yukon Flats along the north side of the Yukon River, to the village of Beaver. The length of the trail is about 58 miles. The State considers this a historic trail, and it served to carry supplies and the mail in the 1930's. The trail crosses 17 surface estate owners, including the City of Fort Yukon, Gwitchyaa Zhee Corporation, Doyon, Ltd. the Yukon Flats National Wildlife Refuge and ten Native allotments.

According to the state's RS 2477 Project Newsletter, the state is attempting to identify, research and document up to 500 rights-of-way established under this law. The three trails just described already provide public access through easements granted in Section 17(b) of the Alaska Native Claims Settlement Act. **Local residents strongly prefer that these remain as public trails, rather than be considered for more intense development.**

Proposed Projects Affecting Fort Yukon

A number of proposed or ongoing road projects have the potential to impact the Yukon Flats region. **Because of this potential for negative impacts, the community desires early consultation on all such projects from sponsoring agencies.**

Proposed Road to Rampart

The village of Rampart lies about 180 miles down river from Fort Yukon and about 60 miles from the Yukon River bridge. DOT&PF will conduct a Location Study for the proposed road to Rampart during 1996. This study will examine the feasibility of constructing a 25 mile road linking Rampart with the Elliot Highway and the state's road system. The project is supported by the community and organizations such as Doyon Ltd. and Tanana Chiefs Conference. Although the road would bring in outsiders, residents believe the benefits of a road connection would outweigh any negative impacts. Residents of Rampart support the ability of non-resident tribal members being able to reach the community by road on a year-round basis.

Public Use of the Dalton Highway

Although open to the public, the Dalton Highway has not seen the high traffic volumes forecast by DOT&PF. Growth has been moderate. BLM and DOT&PF are considering plans to design and construct a wayside interpretive facility on the north side of the Yukon River near the bridge crossing. A state-maintained boat launch provides public access to the Yukon River. State land disposals along the pipeline corridor/Dalton Highway are a possibility in the future. However, a Governor's Advisory Board was created to monitor any disposal proposals. Tanana Chiefs Conference is represented on the Advisory Board. The North Slope Borough remains very concerned over the impacts of even moderate traffic on subsistence resources along the corridor.

Recreational Road to Beaver Creek

The Bureau of Land Management (BLM) manages large tracts of land between Fairbanks and the Yukon Flats. These properties include the White Mountains National Recreation Area and portions of Beaver Creek, which is designated as a Wild and Scenic River under federal statute. This region is highly valued for its recreational use, both in summer and winter. BLM is currently constructing a 16 mile road to improve access to Beaver Creek. Beginning at the end of the road system at Nome Creek, one branch will proceed 4 miles to a new campground, while the other branch will extend 12 miles down stream to another new campground. Trail heads will provide access to Beaver Creek for non-motorized boating, gold panning and fishing. Currently, about 50-100 people per season float the creek about 110 miles (5-7 days) to Victoria Creek, where they are retrieved by air taxi services. A few boaters float the entire 380 miles past Beaver village to the Dalton Highway Bridge (18-20 days). BLM believes this project will not impact subsistence resources in the Yukon Flats. They note that boaters desiring access to the flats can drive to the Yukon River bridge for boat launching into the Yukon River.

Fort Yukon Comprehensive Plan List of References

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Appendix A

Examples of Programs from the
Economic Development Resource Guide
 published by the Department of Community & Regional Affairs

Source and Program	Comments
U.S. Dept. of Agriculture, Resource Conservation and Development (RC&D).	The Yukon Flats RC&D, administered locally by CATG, is one of five RC&D's in Alaska. This program is aimed at expanding economic opportunities at the local level. Technical assistance and funding is potentially available.
U.S. Dept. of Agriculture, Business and Industrial Loans.	Alaska receives about \$1.1 million for use in this program. Loan guarantees of up to 90% can be approved for financing business construction, equipment and working capital. The borrower must first obtain a loan commitment from another lending source. Individuals, corporations, cooperatives, and Alaska Village Entities are eligible.
U.S. Dept. of Agriculture, Waste and Waste Disposal Loans and Grants	Loan and grant funds to construct, repair, improve or expand water and sewer systems, landfills and necessary equipment. Grants can cover up to 75% of eligible facility costs.
U.S. Dept. of Agriculture, Rural Business Enterprise Grants	To provide grants to support development of small and emerging private business enterprises in rural areas. Public entities, such as cities, Indian tribes and private nonprofit corporations are eligible.
U.S. Dept. of Commerce, Economic Development Administration (EDA), Grants for Public Works	Cities, IRA governments and nonprofit corporations with an approved Overall Economic Development Plan (OEDP) are eligible to apply for grants for fund public projects which lead to job creation in the private sector. Examples of recent projects include docks in Homer, Seldovia and Cordova, ranging from \$400,000 to \$1.2 million.
U.S. Dept. of Commerce, EDA, Public Works Impact Projects	Matching grants provided to areas of high unemployment. Recent projects include a water supply in Port Graham, a visitor center in Soldotna, and a dock in Thorne Bay.

Administration for Native Americans (ANA) Grants	Competitive grants for tribal and private Native American nonprofit organizations to develop social and economic development strategies (SEDS). For the past five years, ANA has made available \$1.5 million annually for Alaskan projects.
Housing and Urban Development (HUD), Community Development Block Grants (CDBG)	Alaska general appropriation levels of \$3.3 to \$3.5 million have been enough to fund 8 to 10 grants per year. Some 40 to 60 applications per year compete for these funds. Alaska Native tribes are eligible; maximum grant is \$500,000 in categories for housing, facilities, economic development and imminent threat to health and safety.
Bureau of Indian Affairs (BIA), Indian Loan Guaranty Program	Loan guarantees of up to \$500,000 for individual Natives, and up to \$5.5 million for Native organizations. Loans require a 20% investment by the applicant, and the business must demonstrate economic feasibility.
Dept. of the Interior, Indian Arts and Crafts Board	This program provides a wide range of expert advice regarding development and maintenance of Native arts and crafts, including economic development aspects of Native arts. The agency has extensive experience in Alaska.
First Nations Development Institute	National nonprofit -- their goal is to aid tribes to acquire skills to compete in the private sector. They provide training and technical assistance in economic development, marketing, micro-enterprise lending, tribal investments and research. The guidebooks says "Discussions are also underway with the CATG regarding work at Fort Yukon."
Alaska Industrial Development and Export Authority (AIDEA), Business Assistance Program	To provide guarantees for new loans and refinancing of existing loans for Alaska businesses, with special focus on rural businesses.
Dept. of Commerce & Economic Development (DCED), Economic Development Matching Grant Program	This program provides a state source for matching funds to qualify for economic development funds from federal agencies. Cities and nonprofit organizations are eligible. This program fits well with federal Economic Development Administration and Administration for Native Americans programs.
Small Business Development Centers (SBDC)	The SBDC offers free business counseling by professional staff, volunteers and faculty. The SBDC also offers business training through workshops on marketing, loan proposals, record keeping, business plans and other business-related areas. Counseling is free and available to all Alaskans. The nearest SBDC is in Fairbanks at 456-1701.

<p>Dept. of Community & Regional Affairs; REDI Community Development Block Grants</p>	<p>Objectives are to increase business and employment opportunities, diversify local economies and provide communities with basic facilities. Cities are eligible to apply, and non-profits may participate as co-applicants. Three basic categories of grants: Special Economic Development, Community Development, or Planning. Maximum grant per community is \$200,000.</p>
<p>Alaska Village Initiatives (AVI)</p>	<p>AVI is a private non-profit organization which was formally known as the Community Enterprise Development Corporation of Alaska (CEDC). Their goal is to improve conditions in rural Alaska by embracing cultural values and strengthening self-reliance through training, assistance, advocacy and economic development. Grants, loans, and technical assistance are provide to Native profit and nonprofit organizations, IRA councils and rural cooperatives. AVI has a 25-year track record, and has funded more than 83 community-owned businesses in 53 communities; more than 60 of which are still operational.</p>
<p>National Cooperative Bank (NCB)</p>	<p>NCB provides financing and a full range of banking services to cooperatives and ANCSA corporations and tribes.</p>