

2002 Comprehensive Community Economic Development Plan for the City of Mountain Village, Alaska

This plan was prepared under the direction of the Mountain Village City Council and with input and information from residents of Mountain Village.

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I. INTRODUCTION

Purpose of the Plan The purpose of this plan is to serve as a guide to community development decisions within the City of Mountain Village. This plan also serves to update the Mountain Village Comprehensive Development Plan which was produced in 1987.

History & Community Setting

Physical Setting Mountain Village is on the north bank of the Yukon River, approximately 20 miles west of St. Mary's and 470 miles northwest of Anchorage. It is at the foot of the 500' Azachorok Mountain, the first mountain encountered by those traveling up the Yukon. It lies at approximately 62d 05m N Latitude, 163d 43m W Longitude. (Sec. 14, T023N, R079W, Seward Meridian.) Mountain Village is located in the Bethel Recording District. The area encompasses 4.3 sq. miles of land and 0 sq. miles of water. The climate is continental with maritime influences. Temperatures range from -44 to 80. Precipitation averages 16 inches, with snowfall of 44 inches per year. High winds and low visibility are common during winter. The Lower Yukon is ice-free from mid-June to October. The climate of Mountain Village has both continental and maritime influences. From late spring through fall, the open waters of the Bering Sea tend to moderate the potential warmth of the summer sun. Temperatures during the summer months average between 40 to 60 degrees F. During the winter, when ice covers much of the Bering Sea, the moderating effect of the ocean waters is lost and the colder continental temperatures prevail. Winter month temperatures average between -5 to 10 degrees F. The average annual temperature in Mountain Village is 28 degrees F. Precipitation in the community averages 16 inches per year, with August and September generally being the rainiest months. Snowfall averages 44 inches per year, with peak snowfalls usually occurring in November and December. Winds in Mountain Village are predominantly from the north and east. Winds from the south or west are relatively rare. The strongest winds occur during the fall season. These winds may have a potential application in wind generation.

Geology, Soils, and Slope Mountain Village is built into a hillside area above the Yukon River. Soils are silty sand with some gravel. Depressions have silty loam with tundra vegetation. Shale rock outcrops occur at some locations. Particularly steep slopes occur above Springwater Road and Azachorok Subdivision in the western part of the community, and above Norvel Avenue in the eastern part of the community. There are several gullies that drain the developed portion of Mountain Village. One of these gullies, located between the high school and Azachorak Subdivision, drains into the Yukon River near the old elementary school. Another gully, located between the road to the airport and the old ceme-

tery area, drains into the Yukon River near the village store. In a few areas, drainage from higher ground has contributed to shifting foundations of residences.

Fish and Wildlife Habitat Areas Mountain Village is located in a region which is encompassed by the boundaries of the Yukon Delta National Wildlife Refuge. This area is abundant in fish and wildlife resources which are well documented in sources such as the *Cenaliutrit* Coastal Management Program. According to local sources, Mountain Village residents take part in the following types of subsistence activities by season:

December–April: blackfish, ptarmigan, rabbit, sheefish, burbot,
and migratory birds

June–August: migratory birds

July–September: berries

September–December: moose, seal, whale

Vegetation The Mountain Village area contains wet tundra, moist tundra, and high brush vegetation types. Wet tundra contains grasses and sedges rooted in mosses and lichens. Moist tundra is characterized by a wide variety of low-growing shrubs, herbs, grasses, and sedges rooted in a continuous mat of mosses and lichens. The high brush vegetation is characterized by dense thickets of willow, alder, and birch with a wide variety of lower shrubs, herbs, grasses, ferns, and mosses as understory.

History & Culture Mountain Village was a summer fish camp until the opening of a general store in 1908. This prompted residents of Liberty Landing and Johnny's Place to immigrate. A Covenant Church missionary school was also built in that same year. A post office was established in 1923, followed by a salmon saltery in 1956 and a cannery in 1964. All three have since ceased operating. The City government was incorporated in 1967. Mountain Village became a regional education center in 1976 when it was selected as headquarters for the Lower Yukon School District. Mountain Village is a *Yup'ik* Eskimo community with traditional subsistence practices. Commercial fishing and fish processing provide income. The sale or importation of alcohol is banned in the village. The new generation is reaffirming the culture. Rural Alaska Community Action Program Vista Volunteer Karen Hess, from Mountain Village, organized the first-annual Culture Days event in her community, which brought elders and youth together in a celebration of *Yupiaq* heritage.

II. POPULATION AND THE ECONOMY

Population Characteristics The State of Alaska Research and Analysis Division of the Department of Labor and the decennial census figures of the U.S. Bureau of the Census provide reasonably reliable information on the population characteristics of Mountain Village.

Despite some slowing of growth due to economic challenges for the entire Wade Hampton region, Mountain Village generally outpaced the growth in the Area as a whole. The median age of Mountain Village residents is 23.4 years of age (this means there are equal numbers of residents that are either younger or older than 23.4 years). While this represents an increase from the average during the last Comprehensive Plan period, the ratio of fertility and morbidity has actually declined for the Region (there are no statistics available for Mountain Village itself). The median age of Alaska's population is 26 years. The younger population figures for the city of Mountain Village indicates that there is an smaller than average number of Working Age adults in the city. 2000 Census information bears that out for the Area as a whole. This analysis assumes that the Area trend is reflected in the city. Table II-2 and Table II-3 show the trend for fertility/morbidity and Working Age adults in the Area.

Population Forecast The population would be 800 residents by 2010 and 880 residents by 2020 (Table II-4). This projection is used along with the Census data to form a trend line, the population for Mountain Village reached 728 residents by year 1990 and 755 residents by year 2000 (see Table II-1). This projection represents a declining net gain of population in the community over previous years. What is important in this trend mapping is to project the effect of stabilization of out-migration. Mountain Village has a young population. The popula-

Table II-1. Historical Population for Mountain Village, Alaska

| | | | | | | | |
|------------|------|------|------|------|------|------|------|
| Year | 1939 | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 |
| Population | 128 | 221 | 300 | 419 | 583 | 728 | 755 |

Source: U.S. Bureau of the Census; State Department of Research & Analysis

Table II-2. Fertility and Morbidity in the Wade Hampton Census Sub Area (per thousand?)

| | | | |
|-------------|-------------|-------------|-------------|
| <u>1970</u> | <u>1980</u> | <u>1990</u> | <u>2000</u> |
| 4.8 | 5.1 | 4.9 | 4.6 |

Source: U.S. Bureau of the Census

Table II-3. Population 25-55 years of age in the Wade Hampton CSA (%)

| | | | |
|-------------|-------------|-------------|-------------|
| <u>1970</u> | <u>1980</u> | <u>1990</u> | <u>2000</u> |
| 48 | 47 | 44 | 41 |

Source: U.S. Bureau of the Census

Table II-4. Projected Population for Mountain Village, Alaska, Through 2030

| | | | | | |
|------------|------|------|------|------|------|
| Year | 1990 | 2000 | 2010 | 2020 | 2030 |
| Population | 728 | 755 | 871* | 1012 | 1180 |

Source: Elstun W. Lauesen, Consultant
W&S Study Notes 7/24/02, CE2

*high fertility factor, lower "pull" due to recession in urban Alaska

**Table II-5. Mountain Village, Alaska
Population by Age and Gender**

| | |
|-------------------|-------------|
| Male | 372 |
| Female | 383 |
| Age 4 and under | 82 |
| Age 5-9 | 84 |
| Age 10-14 | 108 |
| Age 15-19 | 70 |
| Age 20-24 | 51 |
| Age 25-34 | 126 |
| Age 35-44 | 95 |
| Age 45-54 | 61 |
| Age 55-59 | 22 |
| Age 60-64 | 19 |
| Age 65-74 | 26 |
| Age 75-84 | 9 |
| Age 85 and over | 2 |
| <i>Median Age</i> | <i>23.4</i> |

tion 25 years and younger is 4.6 times greater than the population 55 years and older. These two age groups represent the high groupings of fertility and morbidity, respectively. The probability of population gain from fertility is proportionately far greater than population reduction through morbidity. Table II-5 includes a breakout of Mountain Village's population by age group. Given this dynamic, assuming that sufficient economic growth occurs to retain the increase in future working-age population, a small growth should take place in Mountain Village. The rate of growth has been estimated by a small working group at Mountain Village meeting with CE2 Engineering. CE2 Engineering is developing a Master Plan for Water and Sewer for Mountain Village. The annualized projection estimates a residential "potential" expansion of 1.5% per annum. This results in a population increase from 755 to 1180 in 30 years.

This study will use that population growth estimate as a basis for projections.

Table II-6. Statewide Job Forecast through 2008

| Occupational Group | EMPLOYMENT | | |
|---|------------|---------|---------|
| | 1988 | 1998 | 2008 |
| Administrative Support Service | 43,397 | 52,661 | 58,655 |
| Professional Specialty | 35,342 | 44,261 | 53,463 |
| Craft & Repair | 26,494 | 35,639 | 40,592 |
| Operators/Laborers | 26,829 | 33,963 | 38,306 |
| Marketing & Sales | 19,965 | 31,005 | 37,235 |
| Managers/Professional Support | 23,044 | 31,214 | 35,667 |
| Technicians | 8,423 | 12,394 | 16,005 |
| Agriculture/Forestry/Fishing ¹ | 2,306 | 3,274 | 3,680 |
| Total, All Occupations | 220,090 | 292,431 | 341,090 |

| Occupational Group | GROWTH RATE CHANGE | | | |
|---|--------------------|-------|------|-------|
| | Rank | 88-98 | Rank | 98-08 |
| Technicians | 2 | 47.5% | 1 | 29.1% |
| Professional Specialty | 8 | 25.1% | 2 | 20.8% |
| Marketing & Sales | 1 | 55.1% | 3 | 20.1% |
| Service | 4 | 40.1% | 4 | 19.7% |
| Managers/Professional Support | 5 | 35.6% | 5 | 14.3% |
| Craft & Repair | 6 | 35.4% | 6 | 13.9% |
| Operators/Laborers | 7 | 26.6% | 7 | 12.8% |
| Agriculture/Forestry/Fishing ² | 3 | 42.0% | 8 | 12.4% |
| Administrative Support | 9 | 21.3% | 9 | 11.4% |

¹ Includes estimate of self-employed workers
² Fish harvesting employment is not included.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section, Alaska Economic Trends, Occupational Forecast (November, 2000)

Current Economic Characteristics

The city of Mountain Village has a both a year around and a seasonal economy. The year around economy is based upon government spending and secondary retail activities generated by stores, fuel, transportation and child care. Fishing and fish processing has been a major source of income in the past, but declines in both price and availability of fish. In 1990, 94 residents held commercial fishing permits. This has declined to 72 by the year 2000 due to bankruptcy or sale of permits by the holder. In 1998 Mountain Village was added to the Western Alaska CDQ group and the Mountain Village (Asa'carsarmiut) Tribe shares in sale of the offshore fishery CDQ. CDQ jobs are sometimes available to local fishermen as well. The major government employers are the Lower Yukon Regional School District (which has its headquarters site at Mountain Village), the Regional Government Delivery non-profit headquartered in Bethel (Association of Village Council Presidents-AVCP),

the Regional Health Corporation (Yukon-Kuskokwim Health Corporation). Various state and federal programs administered directly in the region by state and federal agencies. Table II-7 lists the employment characteristics of Mountain Village.

Subsistence foods are relied upon, including salmon, moose and waterfowl (See discussion on Page 6). Some residents trap for additional income. In addition there is a significant amount of capital spending, both actual and prospective as state and federal agencies seek to upgrade existing facilities to meet basic standards of health, safety and environmental compliance.

Economic Development Trends and Strategies

The decline in working age adults as a proportion of population is a trend causing the most concern for the city council and management of Mountain Village. The retention of working age adults is an important need identified by the community. Among the socioeconomic characteristics required to achieve retention of this prime population are:

- Job Availability
- Educational/Career advancement
- Business Opportunities
- Quality of Life
- Availability of Services
- Reasonable Cost of Living

| | <i># Employed</i> |
|-------------------------------|-------------------|
| Administrative Support | 34 |
| Service | 24 |
| Professional Specialty | 48 |
| Craft & Repair | 7 |
| Operators/Laborers | 8 |
| Marketing & Sales | 7 |
| Managers/Professional Support | 48 |
| Technicians | 0 |
| Agriculture/Forestry/Fishing | <u>0</u> |
| Total All | 177 |

Source: State of Alaska, DCED, Community Data Base

Socioeconomic characteristics that attract and retain population in an area are called “pull” factors while characteristics that cause a population to leave an area to live, work or consume are called “push” factors. The characteristics listed about are “pull” factors that must be strengthened in the city of Mountain Village economy.

Retention vs Attraction An important economic development strategy is to provide for the “retention” of population through the provisioning of job opportunities and access to subsistence resources in the area. Another economic development strategy that is often used by communities is to “attract” new population to an area by the development of jobs in excess to the labor availability or the skills set of

| | <u>Resident</u> | <u>Non-Resident</u> | <u>Weighted</u> |
|----------------------------------|-----------------|---------------------|-----------------|
| Asa’carsarmiut Tribal Enrollment | 278 | 133 | 10* |
| Azachorok Corporation Enrollment | 256 | 263 | 263 |
| Total Reserve Population | | | 273 |

*92% of Tribal Enrollees are Corporate Enrollees. Weight eliminates duplicate enrollees

an area. This Plan focuses upon the “retention” of population as the preferred *Economic Development Strategy*.

Reserve Population Most villages and cities in Alaska have two types of special population enrollment which may affect the social and economic character of the locality: Tribal and ANCSA Village Corporation enrollment. There are populations of enrollees not living in the community. This population is referred to here as “reserve population”. The reserve population has a unique relationship to the locality. The reserve population may repatriate if the retention factors are put in place through economic development. Table II-6 examines the reserve population of the city.

In-Migration Economic development often dictates the degree of population growth or decline that occurs in a given community (see the discussion below under “Future Economy”). Reasons for in-migration into the locality are availability of personal and family support services, economic and job opportunities and the presence of extended family. A factor mentioned in the 1987 plan has not changed: the relative lack of flooding in Mountain Village may also attract persons from more low lying villages.

In this plan, the population projections of 871 residents by year 2010, 1,012 residents by year 2020 and 1,180 residents by the year 2030 will be used so that estimates regarding future community facility and acreage requirements can be calculated. The increase in population will be a mixture of retention exiting and reserve populations and a small marginal increase of in-migration as a larger population generates additional secondary opportunities in the community. The economic “pull” into Mountain Village will result from the following factors:

- **An increase in public capital spending** The Denali Commission was created by an act of Congress to parallel the Appalachian Commission in an effort to address the causes and consequences of poverty. The Commission will provide a focus for the expenditure of hundreds of millions of dollars in the Wade Hampton Census Area where the city of Mountain Village is located over the next 20 years.
- **An increase in federal/state employment in Mountain Village** Agency program consolidation will continue as a trend of localizing agency jobs. Mountain Village will support the regionalization and localization of federal delivery in the Lower Yukon service area. Already the site of the Regional School District, and the site of a new regional health service unit, the city will support the development of commercial lease space to accommodate additional headquartering of state and federal agencies.

- Additional pull will be generated by a **growth in private-sector tourism** to the area. The city of Mountain Village will support the development of tourism facilities and the improvement of local roads and trails.
- **An increase in local services and manufacturing** will increase the local multiplier, increase tax revenues to the city to support public services and diversify the local economy. The city of Mountain Village will support the development of local infrastructure and commercial space to promote local enterprise.
- **A turnaround in the fishery** will lead to a growth in fisheries-related jobs/business in the area. The city of Mountain village will support the development of value-added fisheries production and services to diversify and promote the fishery economy in the area.
- The establishment of both federal **land management and environmental stewardship programs** covering the federal trust areas contiguous to Mountain Village will generate professional positions in the city of Mountain Village. The city of Mountain Village will develop facilities to support a headquarters site in Mountain Village which will serve the lower Yukon.

Development Finance

Mountain Village with a population of 675 is relatively small. Nevertheless other municipalities in the same range of size have utilized the state municipal bonding authority to underwrite capital construction which stimulated the economy. The following table shows some comparably-sized communities and smaller which have utilized the municipal G.O. bonding process to finance development activity. Many of these bonds support school construction activity, which are eligible for 80% reimbursement from the state. Nevertheless, it is possible, in theory, for Mountain Village to finance a portion of a vocational center, a correction facility, or an Elder Care Center with bonds. Those three examples are among the projects named by participants at the Mountain Village community meeting held in October, 2001. Of the following comparables, none are school bond debt.

Table II-9. City Comparables

| City | Population | Valuation (\$000) | G.O. Debt (\$000) |
|----------------|------------|-------------------|-------------------|
| Hoonah | 896 | 25,322 | \$ 2,068 |
| Nenana | 435 | 18,076 | \$ 680 |
| White Mountain | 188 | N/A | \$ 25 |
| Skagway | 814 | 148,777 | \$ 576 |

Municipal bonds are issued by the bond bank for those obligations that are not revenue-generating, such as school, roads, and municipal buildings. Revenue-generating projects, such as industrial parks and docks can be funded by private activity bonds (PAB) which are generally for tax-exempt bond activities. The state has a limit of \$150 Million in PAB placement per year. *For further information on the state of municipal bonded indebtedness please refer to the following web page:* <http://www.revenue.state.ak.us/treasury/debt-book/1999%20debt%20book.pdf>

Mountain Village has no property tax and no special tax and a 3% sales tax. The actual tax revenues and other revenues were not reported for 1999. Mountain village tax income and revenues are reported at the following web page: http://www.dced.state.ak.us/mra/99AKTax_Tab2.pdf

A full value determination is not available for Mountain Village because the city does not levy a property tax. The City does have the option of providing a special taxing jurisdiction for the purposes of financing improvements for development. This would require the concurrence of the legislature in the formation of a special assessment district (SAD) or a local improvement district (LID) which would then have the power to levy appropriate taxes on the beneficiaries of the improvements to fund them. The closest community with a per capita full value determination is the City of St. Mary's. St. Mary's Full Value Determination is \$4,500,600 or \$9,111 per capita. Mountain Village, with a population of 793 would be \$7,225,023 if based on a comparable per capita valuation were determined for St. Mary's neighbor. It is most probable that the per capita valuation for Mountain Village would be lower, given the fact that St. Mary's has enjoyed significant development compared to Mountain Village. Assuming that the valuation of Mountain Village is 60% of St. Mary's (which would be very low), the City would still have over \$4 Million in valuation which could be leveraged to finance projects if it chose to establish a development tax mechanism.

Facilities Water is derived from a well and is treated. Mountain Village operates a piped water and sewer system that serves 200 households and facilities. A system expansion for the east side, including household plumbing for 18 units, was recently completed in the late 1980's and is in need of repairs. Additional demand has been placed on the water system from the additional housing in the Western part of the City from the new Tribal housing development. The wastewater treatment plant needs major repairs or replacement. A new landfill is now available. The landfill needs to be upgraded, fenced and expanded, perhaps relocated. A solid waste planning grant was provided to the State of Alaska in FY

2001 for landfill assessment work for Mountain Village. A new comprehensive utility plan is underway by CE2 Engineering. A copy of their facility map is included in the list of maps at the end of this plan.

A major fuel tank consolidation effort is in the planning stage for FY 2003. This will result in the dismantling and relocation of the AVEC Tank Farm from the mid-South area near the old BIA school and community store to a co-located site with the Village Corporation. A new clinic for the city is being planned by the regional health authority for next fiscal year. Table I (below) is a listing of current and prospective capital projects for the Mountain Village community.

Transportation A summer road links Mountain Village to Pitkas Point, Andreafsky and St. Mary's. The community is accessible by riverboat or barge. A State-owned 2,520 foot gravel airstrip is available, and float planes land on the Yukon River. In the winter, passengers, cargo and mail are flown in by plane. Snowmachines and skiffs are used for local transportation.

High winds and low visibility are common during winter. The Lower Yukon is ice-free from mid-June to October.

Housing Census 2000 puts the total housing units of Mountain Village at 211. The expansion of housing is currently being developed through the Asa'carsarmiut Tribal Housing Authority. In the Year 2000, a plan was developed which established a goal of developing 8 houses in short term and an additional 15 houses as an intermediate goal Through FY 2002. The focus of the Tribal Housing effort has been single family. The demographics of the City shows a growth in two populations, young working age adults and Elders/Senior citizens. These populations have different housing requirements which the city will seek to address both in partnership with the Tribe and through other financing mechanism available to Municipalities. The two types of housing needs that are currently unmet are "transitional housing" for the young working age residents and "senior congregate" housing for independent Elders seeking a supportive but private living space. All of these housing development options require new infrastructure and have land-use impacts which will be considered in this plan. <http://quickfacts.census.gov/hunits/states/02pl.html>

III. COMMUNITY ISSUES, GOALS, AND OBJECTIVES

Issue #1. Growth The City of Mountain Village has shown steady growth since 1939 for the past 60 years. While this growth continues, physical and land status constraints surround the developed portion of the City to the extent that the City has nowhere to expand without difficulty; e.g., to the north are two Native Allotments; to the south is the Yukon River; to the east is the existing airport runway and a Native Allotment; and to the west is a steep hill overlooking the City. Land Use decisions are being made incrementally and not comprehensively. The development of new housing by the Tribal Housing Authority and relocation/consolidation of tank farms are examples of long-term decisions that will impact the future land use of the City.

Goal To continue to allow a reasonable amount of growth within the community.

Objective Identify and determine, through the planning process and the completion of a land use plan, appropriate areas for community expansion and factors to consider in the development of these areas.

Issue #2. Water and Sewage Expansion The City Wastewater and Sewage Treatment System is not functional. This is resulting in public and environmental hazards. Expansion of the water system to new housing has been restricted in the City until this issue is resolved. Repair and replacement of existing water system components is critical as is an additional well.

Goal To develop a new water and sewage treatment system for Mountain Village. Repair and replace water system.

Objective Identify, through discussions with the City, Azachorok Corporation, and the community at large, appropriate sites and steps for the development of a new sewage lagoon and water system and locate them on the land use map that will guide the 14(c)(3) proposal.

Issue #3 . Housing Expansion and Road Development There is an existing expansion of single family housing in the Asa'carsarmuit Subdivision on the east side of the City along the St. Mary-Mountain Village Road to the airport. There is a need for new teacher housing, multiple residential housing and elder housing to meet the needs of the young adults and senior residents of the City. There are significant improvement needs for the

existing residential pattern as well as road right-of-way and easement planning to serve the new housing developments.

Goal To develop planned residential road and housing development for the future needs of City residents.

Objective To identify the expanding residential and housing needs, roads and easements and identify them in the land use map that will guide the 14 (c) (3) proposal.

The City and Azachorok Corporation have negotiated or are in the process of negotiating for several ANCSA 14(c)(3) reconveyances for lands to contain housing or public facilities. There is a need for more planning so that the City can further identify any other lands which will be needed for community expansion and public purposes into the foreseeable future.

Goal To obtain planning information which will enable the City to decide which lands to request from Azachorok Corporation under ANCSA 14(c)(3).

Objective Identify foreseeable community facility needs and potential 14(c)(3) lands within the land use plan.

Issue #4. Energy and Fuel Storage Tank Redevelopment Due to a growing community and increasing need for facilities and services, the City is in the process of upgrading or constructing new public buildings. Corresponding with this is the need for more new housing and housing rehabilitation programs to meet the growing demand for housing. In all of these cases, it is necessary to ensure that proper site control exists or will be obtained. The City is aware of the high cost of energy and the impact that will have on the quality of life of City residents. In light of the political vulnerability of Power Cost Equalization (PCE) and other factors affecting the future cost of energy in Mountain Village, the City is anxious to develop alternatives to the existing structure of power delivery in the area. Consequently, the City is placing a priority on the development of sustainable energy systems to power our utilities; The City is also mindful of the need to consolidate, relocate and upgrade the existing tank farms which are serving the residents' electrical, heating oil and transportation fuel needs.

Goal To identify develop sustainable energy opportunities as well as to assess site control issues and needs for existing and new public facilities and for residential lands the relocation, consolidation and upgrade of fuel storage units in the community.

Objective Identify alternative energy projects that can be integrated into the Mountain Village energy distribution system and identify potential sites for Fuel Tank consolidation in the land use map that will guide the 14 (c) (3) proposal.

Issue #5. Elder Center/Heritage Center There is a lack of facilities that meet the needs of the Elders in Mountain Village. There was discussion during the planning meetings of combining an Elder Center with a congregate housing facility. Later discussion regarding a Museum/Cultural Center (called “Heritage Center”) resulted in a suggestion to combine a Heritage Center with the Elder Center. The thinking involved in combining these functions is based on the fact that the Elders are the “keepers of the culture” and the combined facility would make it possible for the Elders to access both their activity center and the Heritage Center with ease.

Goal To develop a development plan and program for a multipurpose Elder residential complex including an Activity Center and a Heritage Center.

Objective To identify the site alternatives for such a complex in the land use map that will guide the 14 (c) (3) proposal.

Issue #6. Youth and Day care Center There is lack of facilities to support youth-oriented activities in Mountain Village. During the planning meetings, there was discussion about the center as being a place for structured and unstructured activities. This would be a place to accommodate chaperoned dances, a youth radio station (Internet Radio), a cyber-café and a small tutorial/learning space for training or school activities. A Day care Center is also needed. Discussion led to the option of a separate facility for young children which shares a common infrastructure, though with separate metering and completely separate space.

Goal To develop a coalition of Mountain Village residents (especially Youth), churches, non-profits to plan for, develop and build a facility.

Objective To identify site alternatives for a Center in the land use map that will guide the 14 (c) (3) proposal.

Issue #7. Public Access and Trails The quality of life in the City would be greatly improved with a system of public accessible walkways to accommodate Elders who would like to walk about the City. Also, there are many nice features in the area which would be enhanced by a series of marked hiking and bike trails. This would be a good feature for visitors and tourists which is an important consideration if the City wants to encourage eco-tourism as an economic development initiative.

Goal To develop a planned system of trails and walkways around and through the City.

Objective To identify the routes and easements for a system of trails and walkways so that they will be incorporated into the land use map that will guide the City's 14 (c) (3) proposal.

Issue #8. Consolidated Business/Government Complex There is a lack of business space for entrepreneurs in Mountain Village and there is a need for a consolidated space for various government services in the Mountain Village City center. Discussion during the planning sessions focused on a number of solutions including the development of a combined business mall and government complex. This would permit relatively low cost space for businesses and provide them with access to traffic/market. There is a lack of many small enterprises and services that could readily be supported as Mountain is a relatively large village. Speculation during these discussions included a restaurant, a hair-dresser, convenience store, a small pharmacy/drug store and business offices like a copy center. On the second floor would be located the Tribal, City and Corporation Offices with cost-shared facilities and jointly funded broadband LAN system.

Goal To develop a concept and business planning and financing for a mall-government complex in the City.

Objective To identify the lot needs and location alternatives for a business/government complex and identify those sites in the land use map that will guide the City's 14 (c) (3) proposal.

Issue #9. Dock and Harbor Improvements Mountain Village is currently dependent upon St. Mary's as the Port-Of-Entry for goods that must then be hauled over land to Mountain Village. With the development of a high capacity dock with full drayage and

transfer facilities, Mountain Village, with its superior location on the Yukon, could reduce the cost of transportation and increase the shoulder months for shipping into the area because of longer open water.

Goal To develop a dock facility and infrastructure plan, secure funding and construct.

Objective To identify the extent of the facility land needs and location for inclusion in the land use map that will guide the City's 14 (c) (3) proposal.

IV. EXISTING LAND USE AND OWNERSHIP

The patent for this federal townsite was issued on April 10, 1984. This issuance was determined by various federal Acts and legal decisions. Among them are The Federal Land Policy and Management Act (FLPMA) of 1976, the filing of the *Aleknagik* Case in 1977, and the filing of the *Unalaska* Case in 1981.

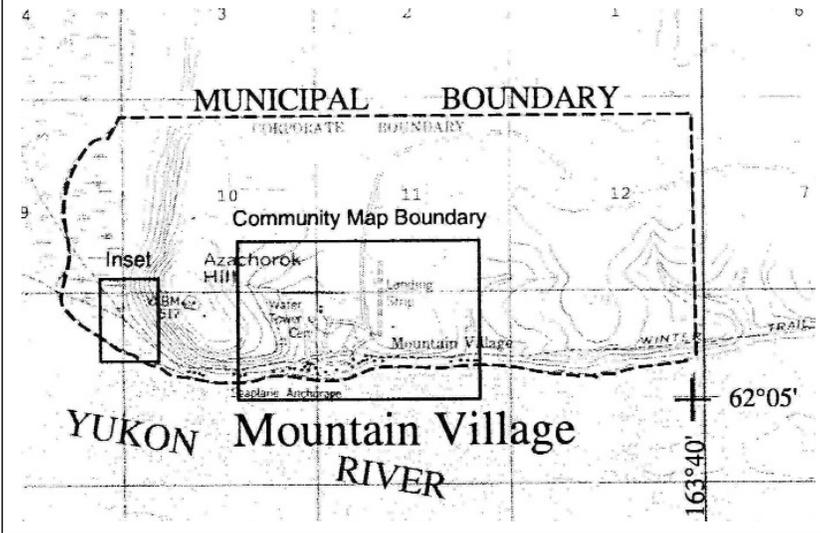
The Federal Land Policy and Management Act rescinded the Townsite Act. This meant that In Mountain Village, applicants must have had improvements on the townsite lots prior to October 21, 1976 in order to be eligible for deeds to these lots. Townsite lands which were not subdivided and unoccupied as of December 18, 1971 (date of ANCSA) should be made available for selection by the applicable village corporation. The Unalaska Case expanded the issue to include land that was subdivided and unoccupied as of the date of ANCSA. A ruling on the Aleknagik Case (1985) determined that unoccupied, unsubdivided townsite lands are unavailable for selection by the appropriate village corporation. A similar ruling was also made in the Unalaska Case for unoccupied, subdivided lands. As a result, the townsite trustee has proceeded to deed unoccupied townsite lands to the municipalities involved. As of the date of this plan, the City of Mountain Village has received deeds to lots and tracts within the federal townsite totalling approximately 10 acres. Buildings and village store are owned by Azachorok Corporation. The remaining 1.5 acres are owned by another private party determined to be subject to an ANCSA Section 3(e) determination. There are some tracts of leased land falling outside the deeded airport lands. These leased lands reverted to selection status for Azachorok Corporation on August 6, 1998. In a similar fashion, deeded lands no longer being used for airport purposes are also available for selection by Azachorok Corporation. Azachorok Corporation was entitled to select 138,240 acres of federal land (equivalent to 6 townships). As part of their entitlement, the village corporation received an interim conveyance of 123,878 acres

on June 29, 1981. A patent will be issued after the boundary description is confirmed by surveys. Azachorok, Inc., owns surface rights to the land, while the regional corporation, Calista Corporation, owns the subsurface lands under ANCSA. Section 14(c)(2) of ANCSA allows claims to be made by non-profit organizations such as churches. As of the date of this plan, it appears that Azachorok Corporation has not fully identified 14(c)(1) and (2) claims. Possible 14(c)(1) claims may include the land upon which houses were built under the Alaska State Housing Authority “Remote Housing Program” in 1970-1971. These houses are located north of the federal townsite area. Under Section 14 (c)(3) Azachorok, Inc. must reconvey improved community lands in addition to lands for expansion, rights of way, and other foreseeable community needs. The reconveyance must be at least 1,280 acres unless the community and village corporation agree in writing upon a lesser amount. Azachorok Corporation deeded, as a part of their 14(c)(3) reconveyance, .36 acres to the City of Mountain Village for locating the city office building and approximately 2 acres to contain the existing water tank and new pumphouse. Under Section 14(c)(4), the village corporation must reconvey lands which were being used for airport purposes prior to December 18, 1971. The Alaska Native Allotment Act was repealed with the passage of ANCSA. No applications for allotments have been accepted by the Bureau of Land Management (BLM) since December 18, 1971, but many applications filed prior to that date are still being processed. Another allotment is located within part of the existing airport area.

The city of Mountain Village is located in a region which is encompassed by the boundaries of the Yukon Delta National Wildlife Refuge. This area is abundant in fish and wildlife resources which are well documented in sources such as the *Cenaliutrit* Coastal Management Program.

City Land Interest Boundary The city of Mountain Village has an interest in identifying lands adequate for roads, trails and commercial development in keeping with the goals and objectives identified above. In general, this would include a “maintenance easement” strip of land along the Mountain Village–St. Mary’s service road which would give the city the capacity to extend maintenance services of that road east to the western boundary of the St. Mary’s road service district. In addition, this plan recommends that the city work with the Corporation to establish a trail/access easement looping from approximately north of the School Administration site along the highway easement for a few hundred feet and then take off North up to the edge of the Yukon Delta Refuge and loop back south to a trailhead/visitor site about two miles out of town near the Airport.

Fig. V-1. Map of Current Community and Municipal Boundary



This easement would be used to establish a trail system from Mountain Village to a “Refuge Visitor and Management Zone” that would be established contiguous to the federal lands. This would become a prime area for the development of lodge facilities and Refuge Visitor concessions with the U.S. Fish and Wildlife Service. This would also be an area for establishing a headquarters site to serve the Refuge under a management contract with the federal agency. A series of marked mountain biking (Summer) and cross-country skiing (Winter) trails would eventually be established between Mountain Village

and the Refuge Visitor and Management Zone. In the Future Land Use section of this Plan the estimated acreage impact on conveyances will be estimated.

These two recommendations will impact the municipal boundaries of the city. This plan recommends that the boundaries be extended to the North co-terminus with the Federal lands and to the east half way to St. Mary’s. The Western boundaries would remain approximately the same except extended by a straight line to meet the new Northern Boundary, The Southern boundary would remain approximately the same except to extended along the Yukon boundary to meet the extended Eastern boundary of the River. Thus the outward boundary of the city of Mountain Village will extend to the federal land area to the Northwest and halfway to St. Mary’s on the east. The Southern boundary would follow the Yukon River to the site of the relocated Solid Waste Site and then North, following the foothill contour to the federal land boundary. Within this large area would be scattered sites connected by a system of service roads and trails to meet the objectives identified above.

V. EXISTING LAND USE AND CHARACTERISTICS OF THE LANDS

Geology, Soils, and Slope Mountain Village is built into a hillside area above the Yukon River. Soils are silty sand with some gravel. Depressions have silty loam with tundra vegetation. Shale rock outcrops occur at some locations. Particularly steep slopes occur above Springwater Road and Azachorok Subdivision in the western part of the community, and above Norvel Avenue in the eastern part of the community.

There are several gullies which drain the developed portion of Mountain Village. One of these gullies, located between the high school and Azachorok Subdivision, drains into the Yukon River near the old elementary school. Another gully, located between the road to the airport and the old cemetery area, drains into the Yukon River near the village store. In a few areas, drainage from higher ground has contributed to shifting foundations of residences .

Housing and Residential Land Use In 2000, there was a total of 211 year-round housing units in Mountain Village. Out of the 211 units, approximately 28 houses are presently vacant.

Of the 183 occupied housing units within Mountain Village, approximately 21 units appear to be substandard and should be replaced with new units. Another 28 units are in need of repairs and probably will need to be replaced in about five to ten years. A housing condition survey should be conducted to confirm or amend the above figures.

Based upon the projections provided by CE2 Engineering, there will be an estimated 425 person increase in population over the next 30 years. This generates an approximate addition of 90 homes. This will generate a 25-30 acre site development demand within the municipality. There would be another 2-3 acre site needed for two or three multi-residential facilities and at least one acre for the congregate Elder housing facility for 6-8 Elders and the Elder Center.

Future housing needs and residential acreage options are discussed in Chapter VIII (Future Land Use Plan). Existing housing in Mountain Village is primarily located on lands which fall into one of the following categories:

1. The property has been reconveyed (interim) by the corporation to the property owners under 14(c)(1); or

2. The property is located in the Asa'carsarmiut Subdivision which is land reconveyed to the Tribal Housing Authority under ANCSA.
3. The property has been reconveyed to the city from the BLM townsite trustee.
4. The house is located on Azachorok Corporation lands. The owner will need to work with the corporation to determine if there were improvements on the lot prior to December 18, 1971 (the date of ANCSA). If so, the owner may be eligible for a deed to the lot under ANCSA Section 14(c)(1). If not, the owner will need to discuss with the Corporation other ways to obtain site control for the house.

Commercial/Industrial Land Use Existing commercial and industrial land use within Mountain Village is primarily contained within one tract of land, an 8.52 acre trade and manufacturing site (USS 4010), which is located within the general boundaries of the federal townsite. Of this 8.52 acres, approximately 7.0 acres was deeded to the Azachorok Corporation by the previous landowner. Azachorok Corporation's portion of this tract includes nearly all of the old cannery buildings and the former and present village store, The original landowner's portion of the tract contains a number of other buildings including what was once a restaurant. It is assumed within this plan that lands within U.S. Survey 4010 will continue to be used for commercial or industrial development. In addition to these lands, however, it appears that Azachorok Corporation will likely consider other locations on their lands that could be used for commercial purposes. Other commercially used lands in Mountain Village include the Alaska Village Electric Cooperative (AVEC) generators and fuel tanks, United Utilities facilities (building and satellite dish), and the gravel extraction area.

Public Land Use Public lands generally contain public buildings or provide a vital public service of some kind. Public lands usually are used for transportation (roads, airports, barge landing areas), utilities (community wells, sewage treatment plants, fuel tanks, solid waste disposal areas), public buildings, and other public uses such as parks, boat landing areas, etc. Lands that are presently used for public purposes are discussed in Chapter VI (Community Facilities and Services—Inventory and Analysis). Chapter VIII (Future Land Use) proposes the extent and locations) of lands necessary for future public use.

The primary public buildings are on lots owned by the city and the Tribe at the center of the community footprint. This area includes the High School and Middle School Buildings. Just East of the schools and north of Airport Road are arrayed the City Hall/Public Safety Building, Community Building, and City Maintenance Shop. The

Health Clinic Building is 1 lot over to the north of the community building. South of Airport Road is the Asa'carsarmiut Tribal complex including office space for all of its various programs, City pump house and Head Start.

It is easy to see how the layout of the city affects access and land-use within the village. Residential lots ring the city to the West and North. New housing is going in to the east. Commercial services are located to the South of the city near the river. Core public services are in the middle of this ring. Hence, there is a web of trails that have sprung up to connect the various points of the city. The few roads within the footprint are not maintained to even secondary state standards because the use of the roads are largely foot traffic and four wheeler in the summer and snow machine in the winter. A condition survey of the roads is included in the next Chapter.

VI. COMMUNITY FACILITIES AND SERVICES—*Inventory and Analysis*

Mountain Village was organized as a city of the second class in 1967. The Alaska Statutes (primarily AS 29.43 and 29.48) allow a second class city to assume a variety of powers. Of these, Mountain Village has assumed the following by ordinance: *streets and sidewalks; water; sewers and sewage treatment facilities; cemeteries; police protection and jail facilities; community centers; recreation facilities; garbage and solid waste collection and disposal; and fire protection service and facilities.*

The City of Mountain Village Administration uses a variety of funding sources to meet expenses for public services. The major sources of operating revenues include: a 2% city sales tax; State revenue sharing; State Municipal Assistance Program; user fees for certain facilities (e.g., solid waste pick-up and water use fees); rentals for buildings and equipment; gravel revenue; and bingo revenue. In 2000, the City of Mountain Village retained approximately 6 full-time and 18 part-time employees.

For non-city programs and services, Mountain Village's Native population is represented by a five-member traditional council. The traditional council is eligible to administer a variety of federal programs, including local health care, employment assistance, college assistance, social services, Housing and Tribal operations.

In the Lower Yukon region, a number of health and social service programs are administered by regional organizations which are headquartered in Bethel. These organizations include the Yukon-Kuskokwim Health Corporation (YKHC) and the Association of Village Council Presidents (AVCP).

Following within this chapter are the following elements: a description of existing community facilities and services within Mountain Village; an analysis of the capability of each facility to meet the needs of the existing and projected future population of the community; and an analysis of land needs and site control for each facility.

City Office Building The City Office Building presently houses office space for: mayor, city manager, city clerk and bookkeeper, maintenance, This building also contains a meeting room that is used by the city council as a city council chambers. Occasionally the facility is used by other agencies such as State of Alaska - Division of Youth and Family Services and State Magistrate. According to City officials, the existing building needs to be expanded to add more office space and additional storage. The City Office Building is located on a .36 acre tract (Lot #3,, Block #5 of Azachorok Subdivision) that was reconveyed to the City from Azachorok Corporation under ANCSA 14(c)(3).

City Maintenance Building The City Maintenance Building, constructed in 1985, is designed to house city equipment including a grader and front-end loader. The facility also provides space for repairing other city vehicles. It is anticipated that this building will be sufficient to meet the needs of the community into the 1990's. The City Maintenance Building is located on Azachorok Corporation land near the City Office Building.

Yukon-Kuskokwim Health Clinic (YKHC) The YKHC clinic building in Mountain Village, constructed in 1972 as an areawide clinic, has since reduced operation to a local clinic. As a result, a portion of the building containing one x-ray room and two more examining rooms is unused. The *clinic building* is located on land which is owned by the Azachorok Corporation (within Lot 2, Block 5 of the Azachorok Subdivision).

The Head Start Program provides pre-school preparation for students that will be entering public schools. The program is housed in a new Head Start Building which was constructed in 1986. The building is located on Azachorok Corporation land across the street from the City Recreation site.

Public safety in Mountain Village is comprised of three functions: police, fire, and search and rescue. All three functions are managed by the village public safety officer. Police equipment includes a van and snowmachine. The police department offices are located in the city administration offices. The building contains office space and three holding cells.

The volunteer fire department consists of a tanker truck and an "Aqua-Tec." The volunteers are called out on a VHF radio when there is a fire and they converge on the site of the fire with the Aqua-Tec pumping equipment and tanker truck.

Search and rescue activities are conducted on an as-needed basis by whomever is available to participate. The police department coordinates all search and rescue efforts. In order to better meet existing and future needs, it has been proposed by City officials that all three public safety functions be located in a single building. This building was included as a priority in previous requests to the Alaska State Legislature. The proposed building would likely be located on Lot #4, Block #12 of the federal townsite. This lot is owned by the City. No other equipment or staff needs have been identified for the public safety department to meet future needs.

Schools Located within Mountain Village is the headquarters of the Lower Yukon School District (LYSD) with jurisdiction over schools of eleven communities on the lower Yukon River. The central office of the LYSD, located in the center of the community, employs twenty four full-time positions. In addition, twenty four certified staff, including one principal that administers grades K-12, serve the elementary school, middle school, high school, and vocational school within Mountain Village. Another twenty two support staff are employed for the Mountain Village school system. The school district-owned building which houses the LYSD offices is located on land owned by Azachorok Corporation.

The Mountain Village Area High School (grades 9-12) enrolled 66 students during the 2000-2001 school year. The high school building, a metal-frame structure, was built in 1975. it contains five classrooms, office, gym, kitchen, library, and home economics room. The main high school building and other accessory buildings are located west of the City Office Building. The high school building is located within a tract of land that is being leased to the school district for 30 years by Azachorok Corporation.

The Mountain Village Middle School (grades 7 and 8) enrolled 43 students during the 2000-2001 school year. The middle school building, constructed in 1982 and located southeast of the high school, contains five classrooms. As with the high school, the middle school is located within the tract of land that is being leased to the school district by Azachorok Corporation. The Mountain Village Elementary School (grades K through 6) enrolled 107 students during the 2000-2001 school year. The existing elementary school building was built in the late 1980's of steel and wood construction. This building contains: seven classrooms, office, multi-purpose room, kitchen, library, teacher's workroom, special education room, and Title I room. An 8.67 acre site which contains the high school, middle school, teacher housing units, and the new elementary school facilities is being leased by the Azachorok Corporation to the State of Alaska for school purposes.

Teacher Housing In addition to the school facilities discussed above, there are 23 units of teacher housing and one “hotel” room that are used to house resident teachers or visitors. Of the 23 housing units, 14 are located in the school area that is being leased from Azachorok Corporation; 4 are within the area being leased within a Native Allotment; 3 are located in USS 4055 and are subject to a special use permit from BIA; and 2 more units are located on Azachorok Corporation land next to the U.S. Post office building. Currently several school units are in Atco type units and need to be upgraded to multi-family housing.

Community Center The City-owned community center was built in 1984. This 50 x 100 foot wood frame structure is used for large attendance community events such as festivals, potlatches, and semi-annual community-wide meetings. The building contains one large activity room, kitchen, and storage room. Due to its large size and recent construction, it is anticipated that this building will easily meet community needs as described above for the next 5-10 years. The community center appears to be sited on the same parcel of land as the City Office Building. If so, site control is adequate.

City Recreation Buildings Two City-owned buildings were once used for recreational purposes are now unoccupied and unused. The first is the former City office building located on Spring Water Road. Since the building is located on a City-owned lot (Block 22, Lot #2), site control is adequate. The second building, is located immediately south of the LYSD central office building (and formerly housing the Head Start Program), and is structurally unsound.

Churches Mountain Village has a total of four church buildings, including: the Russian Orthodox Church on Airport Road, the old and new Covenant churches on Reynolds Avenue, and the new Catholic Church (the old Catholic Church was demolished in 1985) on Keyes Street. The Russian Orthodox Church was built in the mid-80’s approximately across the street from the United Utilities building.

Of all the above churches, only the Catholic Church appears to have adequate site control (located on a deeded federal townsite lot). The Russian Orthodox Church and new Covenant Church are located on Azachorok Corporation lands. The present Covenant Church is located on a federal townsite lot but a deed has not yet been issued by the federal townsite trustee. Since all the churches have constructed new buildings within the past two years or are planning a new church in the near future, it is assumed in this plan that the churches will be sufficient to meet community needs for at least the next 10–15 years.

Cemetery There are two cemetery areas within Mountain Village. The old cemetery, not in use anymore, is located adjacent to the boardwalk that connects “IC” street to Reynolds Avenue. This cemetery encompasses approximately .25 acres of land owned by Azachorok Corporation.

The cemetery that is still in use is located on the hillside overlooking the intersection of Bean’s Avenue with Homiere Road. This site, located on Azachorok Corporation land, encompasses approximately .75 acres. If this site continues to be used for cemetery purposes, it will be necessary to consider site control and expansion considerations. It is estimated that a one acre site on flat land can contain approximately 480 plots. On steeply sloping land that is characteristic of the Mountain Village cemetery site, it is likely that fewer plots per acre will be possible. It is recommended, therefore, that approximately 4-5 acres should be reserved for future expansion of the cemetery if the present site will continue to be used. It is further recommended that cemetery lands be considered as possible ANCSA 14(c)(3) reconveyances to the City.

Armory The National Guard Armory is located near the merging of Beans Avenue with Reynolds Avenue. This building houses equipment that is used in National Guard training exercises. National Guard training occurs each year in Mountain Village. The only lands needed within the developed part of the community is to contain the armory building itself. The National Guard proposes that a site approximately 150 feet x 200 feet would be sufficient to contain the armory building.

U.S. Post Office The U.S. Post Office building is located on land that is owned by Azachorok Corporation within Lot #2, Block #5 of the Azachorok Subdivision.

Solid Waste Disposal Solid waste is collected by the City and hauled to a disposal site located approximately 1–1/4 miles west of the old elementary school along Spring Water Road. Fees are charged to residents for the pickup service. According to a Department of Environmental Conservation (DEC) official, the existing site is marginally sufficient to meet existing needs, however, an alternate site should be found in the near future. City officials feel the existing site is capable of being expanded (to the west) in order to meet future needs. One problem with the existing site is that it is subject to occasional flooding by the Yukon River. The existing site encompasses approximately 1.5 acres on Azachorok Corporation land.

If the search for an alternate solid waste disposal site is made, the City should consider the following guidelines:

- The site should encompass approximately 5 acres in order to last up to 20 years;
- The site should be at least one mile from the airport to keep birds (which are attracted to the dump) away from airplane traffic;
- The site should be far enough away in a prevailing downwind direction so odors from the site will not reach the community. If the site is too far away, however, residents may not be inclined to use the area;
- The site should have soils capable of containing leachate. State regulations require that the bottom of the dump be at least four feet from the highest level of the water table;
- The site should be located so that there is little possibility of surface water runoff contaminating community water wells;
- The site should be accessible year-round.
- Road construction and maintenance costs should be considered in the decision to locate a proposed dump site.
- Dirt at the dump needs to be good enough so equipment can operate on it most of the year. If possible, gravel should be close to the surface. Permafrost areas should be avoided.

In addition to expanding the existing site or locating a new solid waste disposal site, the City may also want to consider obtaining one or more “burn boxes” which will allow fairly clean burning of wastes prior to burying these wastes. The major purpose of these devices would be to reduce the total volume of wastes that are buried therefore increasing the years that the new solid waste site can be used before another site will be needed. A “burn box” is not the same as the use of barrels for burning or open burning of trash. open burning at disposal sites is not allowed by DEC because of the danger of uncontrolled fires. Burning in barrels produces excessive smoke and is fairly ineffective in reducing volume of wastes. As garbage collection and disposal will likely continue to be handled by the City, the existing solid waste disposal site (and future solid waste disposal sites) should be considered as an ANCSA 14(c)(3) reconveyance to the City from Azachorok Corporation.

Other Public Use Areas

Recreation Recreation sites within Mountain Village, other than recreation buildings discussed previously, are primarily located on school lands (for example, the outdoor bas-

ketball court at the old elementary school). City officials have indicated that land located within the Azachorok Subdivision (Block 4, Lots #5-8) may be proposed for a future playground area. Other outdoor recreation facilities such as tennis courts and softball fields have been suggested as needed by the community. No sites have been proposed for these facilities.

Two other recreation sites have been suggested for further development in the future. One site called Clearwater is located approximately two miles north of the City and is used primarily for picnicking. A possible access road and limited picnicking facilities have been proposed for this site. A second proposed picnic area is at the top of Azachorok Hill. This site would also need an access road.

All of the above mentioned sites are located on lands owned by Azachorok Corporation. Since these sites are proposed for public recreation, they should be considered as 14(c)(3) reconveyances from Azachorok Corporation to the City.

Tourism facilities As mentioned above, there is a need to develop facilities that will accommodate visitors to the area. Bird watching is a significant recreational opportunity. The following internet site is a list of all of the species of birds that exist in the Andraefski Wilderness Area, also known as the Yukon Delta Wildlife Refuge: <http://i-bird.com/Lists/SpLAK YukonD.htm>

The Audubon Society and the Linnaen Society both sponsor trips for birders to remote areas where such activities are supported. This would be a low-impact source of high-end visitor industry activity to attract to Mountain Village. This is also the sort of activity that is compatible with the regulations governing the Yukon Delta Refuge.

This plan recommends that the City select a trail and development easement going from the central footprint of the city North to the Refuge and loop back to the St. Mary's-Mountain Village corridor near the airport. A 10 acre parcel that runs contiguous to the YDWR will be used to establish a visitor lodge and Refuge Visitor's Center. The city will establish a special zone for this area, a "Refuge Visitor and Management Zone" for development and regulatory needs. A small service road would access the RVM Zone from the north of Section 11/12 off the St. Mary's-Mountain Village Road corridor. This road would allow construction activity and capital improvements to be built within the RVM Zone with the least impact on the land.

Marine Industrial and Private Boat Dock Marine At present, marine-related facilities in Mountain Village consist of: 1) the City barge landing area approximately 400 feet downriver from the existing fuel storage area; 2) second barge landing area by old elementary school; and 3) a private pier near the old cannery buildings. These waterfront lands are primarily owned by the City. Boat storage during the winter largely takes place on private lots. This plan recommends that improvements to the landing area include storage and maintenance areas. This could be part of a mixed use area which would be designated Marine Industrial for the purposes of developing a commercial dock near the existing marine header/dispenser to the east of the spit which will separate the existing (to be improved) dock area and the commercial/industrial dock facility. The development of a commercial dock, enlarged marine header for fuel and drayage/warehousing will require at least three acres along the river for development. These improvements will position Mountain Village to be a Port-of-entry, Warehousing and Transshipment point for the Lower Yukon area.

Berry Picking Areas Although use of the land for subsistence purposes occurs throughout the region surrounding Mountain village, there is an area immediately east of the existing airport tract that are used by local residents for berry picking. The surface estate of this area is partly within a Native Allotment and partly within Azachorok Corporation lands.

Setbacks and Open Space There are a number of areas within the developed portion of Mountain Village that should be considered as being left as open space. These areas include: land containing the two drainage creeks; lands surrounding community wells (approximately 100 feet from well casings); and an area surrounding the AVEC generators. The creek areas serve to drain excess water runoff from the community and should be not be altered unless properly engineered with culverts, etc.

These areas, however, also serve as a natural setting which provides some relief from the intensively developed area of the community. This plan recommends, therefore, that the creek areas be kept in a natural state if possible. Other areas that should be kept as open space include areas within a 100-foot radius surrounding community wells. The purpose for this is to keep the wells from becoming contaminated. Dog lots, for example, should not be allowed within the 100-foot radius of wells. Another setback that is recommended for open space is an area surrounding the AVEC generators. Some types of development, especially housing, should not be located too close to the generators since the noise can be irritating to residents. The community may want to consider, however, the possibilities of locating a public building near the AVEC facilities if waste heat is to be utilized. The level

of noise would need to be considered in the design of any building locating near the generators. Perhaps the most important setbacks of all are the safety setbacks surrounding fuel storage tanks. See the discussion of this item under “Fuel Lines and Storage” which is presented later in this chapter.

Communications Telephone service in Mountain Village is provided by United Utilities. Both AT&T and GCI provide long distance services from the community. AT&T installed digital switching in Mountain Village in 1999 which permits a much expanded long distance capacity. There are currently 17 trunks available to the community. There are approximately 252 telephone lines now installed in the community. Low income subsidies are provided through the Lifeline and Link up programs. An earth station, which is used for transmitting long distance calls, is jointly owned by United Utilities and AT&T, Inc. one building, located near the LYSD central offices, houses the necessary equipment for the phone system. The building and satellite dishes are all located on Azachorok Corporation land.

Internet is available at the school through the e-Rate subsidy. A few homes have Hughes Direct PC via satellite. The Asa'carsarmiut Village Council runs a networked Direct PC system. United Utility claims that it will be providing broadband wireless internet services to the homes of Mountain Village within the year. The city is trying to get Direct PC installed and networked this year.

The state of Alaska filed a waiver request to the FCC asking that prohibitions against e-rate facilities being used for general non-school purposes after school hours be waived for communities in rural Alaska. This was approved under a rulemaking by the FCC and now community users can access the school internet system after 3PM. The city sees the need for a more robust connection to the internet that will support the development of tourism and the expansion of business opportunities in the area. United Utilities recently announced that they will be making DSL services available in some of their communities. A wireless wide area network solution may also be feasible for the community and have less of a land Impact

Media Mountain Village has a cable television system that is non-functional. Nevertheless, there is a coaxial cable drop to many houses from the time when service was available. The Cable system is owned by a company in Colorado and is not maintained. About 40 households have installed satellite T.V. dishes. Three radio signals are also received in the city from Nome and Bethel. With the advent of the Internet it will be possible for households to receive internet radio stations from around the world. It will also

be possible for Mountain Village residents to establish their own radio station and upload it to the Internet for broadcasting throughout the community and the world. Weather permitting, mail is delivered daily.

Transportation

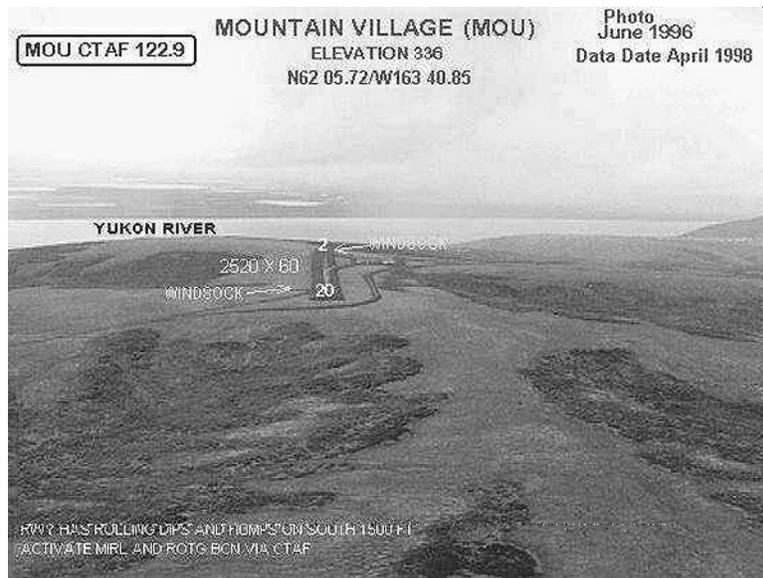
Airport The Mountain Village airport, is located primarily in Section 12 of Township 23 North, Range 79 West. The surface estate of the airport is gravel and is well maintained. The following are some facts about the airport.

| | | |
|---------------------------------|---|------------------------|
| Dimensions | 2520 x 60 ft. / 768 x 18 m | |
| Surface | Gravel, in good condition | |
| Runway edge lights | Medium intensity Runway edge markings: /20 MKD WITH REFLECTIVE CONES & THLD PANELS; THLD PANELS FADED. | |
| Operational restrictions | HAS ROLLING DIPS & HUMPS ON S 1500 FT. | |
| | RUNWAY 2 | RUNWAY 20 |
| Traffic pattern | Left | Left |
| Runway heading | 014 magnetic, 032 true | 194 magnetic, 212 true |
| Latitude | 62-5.54747 N | 62-5.89602 N |
| Longitude | 163-41.16090W | 163-40.68625W |
| Elevation | 304.0 ft. | 335.0 ft. |
| Displaced threshold | No | No |
| Touchdown Point | Yes | Yes |
| TD elevation | 335.0 ft. | 335.0 ft. |

Site control was reconveyed from Azachorak Corporation to the City under ANCSA 14(c)(3). The City leases the lands to DOT/PF for operation of the airport. The previous airport lands will revert back to Azachorak Corporation once the title conflict with the Native Allotment owner is resolved. City officials intend that some of the reverted airport lands may become available under 14(c)(3) for community expansion purposes (future housing lands).

The runway meets State standards for a community airport. A maintenance building and runway lights have been constructed to serve the airport. Other facilities such as a passenger waiting building need to be constructed, especially as the city begins developing tourism. Site planning for new airport facilities should be coordinated between DOT/PF, the City, and Azachorak Corporation to ensure that the needs and requirements of each entity are considered.

Roads and Trails The longest road in the Lower Yukon area is a State maintained 20.3-mile dirt road between Mountain Village and St. Mary's (and connecting with Pitkas Point). Although this road is a State highway, it is narrow and often in need of spot repairs. According to DOT/PF, major improvements to the road such as widening will not be necessary until the road gets much more traffic than it currently receives. Therefore, DOT/PF considers the road adequate to meet the needs of the existing populations of Mountain Village, Pitkas Point, and St. Mary's. Site control for the road has been established with a 200-foot right-of-way. Mountain Village has approximately 5.5 miles of local roads. An assessment of the road system in the city is provided. Other future road needs that are supported by this plan include: 1) a road from Mountain Village to the Clearwater area; and 2) a road extension to the top of Azachorok Hill.



Rights-of-way to roads within the federal townsite are dedicated for public use but ownership is not clearly defined. Right-of-way easements to most of the publicly-used roads outside of the federal townsite are claimed by the Bureau of Indian Affairs (BIA) but the land underlying these easements is primarily owned by Azachorok Corporation. By 1988, BIA intends to repair the roads (within these "easements") that they originally constructed in the community. After the repairs, BIA intends to negotiate an agreement with the City to turn over the road easements to the City. There are also two 17(b) easements on roads leading from the airport to the school complex area and from the airport south to the federal townsite. It is recommended in this plan that all publicly used roads outside the federal townsite be reconveyed to the City under ANCSA 14(c)(3). The reconveyances under 14(c)(3) should include, at a minimum, the widths of existing right-of-way easements on these roads.

There are a number of pedestrian boardwalks and bridges, within Mountain Village. There are also a number of trails linking residents of Mountain Village to recreation and

subsistence areas. Rights of way to boardwalks and bridges within the City should be considered by the City as potential 14(c)(3) lands. Publicly used trails outside the developed area of the community could also be considered by the City as potential 14(c)(3) reconveyance lands (rights-of-way).

Road Assessment

Class of Streets The classification of streets for the purpose of this report are as follow:

- Class 1. Paved
- Class 2. Aggregate
- Class 3. Gravel
- Class 4. Dirt

Analysis

- The City of Mountain Village maintains approximately 37,000 ft of streets and sidewalks. The streets are largely in poor condition. They are dirt surface class 4 or gravel class 3 systems. Only in the case of the road connecting Mountain Village (MOU) to St. Mary's (SMK) is the road built to class 2 standards.
- Road maintenance appears to be sparse. In summer, dust is a chronic problem. The surface of the roads are not uniform and show evidence of conformity to sub-surface discontinuous root, permafrost and rock systems. The road system in the Azachorok Subdivision shows evidence of subsidence and cross-drainage from water migrating from the hill to the North of the subdivision. The roads through the newer subdivision being built by the Asa'carsarmiut Tribal Housing Authority promise to be superior because they are located in a well-drained gravel bed in Section 14 of the Azachorok Corporate land plat. In the Winter, ice and snow are not plowed except in conditions of extreme drift. In the Central area where governmental, health and educational services are located, icy conditions persist throughout winter without regular sanding to mitigate the treacherous conditions. Walking conditions are particularly hazardous for the elderly and the very young when slick, icy conditions prevail as a result of warmer winter weather. Falling injuries are the norm during these times of the year.
- The poor condition and poor maintenance of the streets in Mountain Village present both a public hazard and a contingent liability for the City.
- Below is a table which surveys the condition of Mountain Village Streets.
- The condition of boardwalks and sidewalks are even worse than the streets. A series of steep drops from the upper (Residential) to the lower (Commercial) part

of the city present a challenge to the Elders. The silt and clay-rich soils become slick and difficult to maneuver in the rains. Consequently, a comprehensive system of boardwalks, staircases, decks and covered benches would contribute immensely to the quality of life in the City.

Table VI-2. Street Analysis

| Street | Est. Length (Ft) | Class | Description | Comment |
|------------------------|-------------------------|--------------|---|--|
| Springwater Road | 6,000 | Class 3 | W. From Homiere Rd. to the | Poor–Sparsely Maintained Solid Waste Site |
| Homiere Road | 400 | Class 3 | N–S Bet. Boat Landing to W. End of Beans Ave. | Poor–Sparsely Maintained |
| Beans Avenue | 1200 | Class 3 | E–W Bet. Homiere Rd & Wilson St. | Poor–Sparsely Maintained |
| Wilson Street | 700 | Class 3 | N–S Bet. Yukon Ave. & Boat Ramp | Poor–Sparsely Maintained |
| Lower Reynolds Ave. | 1,000 | Class 3 | NW–SE Bet. Beans Ave. & Wilson St. | Poor–Sparsely Maintained |
| Upper Reynolds Ave. | 800 | Class 3 | Lower Reynolds to MOU-SMK ROW | Poor–Sparsely Maintained |
| River Drive | 800 | Class 3 | E–W Between Old School & Reynolds Ave. | Poor–Sparsely Maintained |
| Yukon Avenue | 800 | Class 3 | E–W N. of Azachorok, Inc. | Poor–Sparsely Maintained |
| MOU-SMK ROW | 12,000 | Class 2 | N–S from Upper Reynolds to New Airport | Poor–Sparsely Maintained |
| MOU-SMK Central Access | 400 | Class 2 | E–W from Central District to MOU-SMK ROW | Poor–Sparsely Maintained |
| Rough Way | 400 | Class 3 | N–S from East End Yukon Ave. S to River | Poor–Sparsely Maintained |

| Street | Est. Length (Ft) | Class | Description | Comment |
|--|------------------|---------|---|--|
| Norvel Avenue | 1800 | Class 3 | E–W From Old Cannery to End St. | Poor |
| Steep Street | 200 | Class 3 | N–S Off Norvel Ave. To River | Poor |
| Grass Avenue | 200 | Class 3 | N–S Off Norvel Ave. To River | Poor |
| END STREET | 200 | Class 3 | N–S Off Norvel Ave. To River | Poor |
| Central Cluster of Unimproved Trails & Streets | 5400 | Class 4 | Unnamed but central arterials connecting schools and government buildings from P.O. on the North end of cluster South to Reynolds Ave | Poor–Occasionally Maintained |
| Valley Street | 1600 | Class 3 | NE–SE Azachorok Subdivision | Poor–Occasionally Maintained, Erosion & water damage |
| Sheppard Street | 800 | Class 3 | NE–SE Azachorok Subdivision | Poor–Occasionally Maintained, Erosion & water damage |
| Peterson St. | 2000 | Class 3 | East–West Azachorok Subdivision From. PHS Well to MOU-SMK ROW | Poor–Occasionally Maintained, Erosion & water damage |
| Jacob Street | 500 | Class 3 | Asa'carsarmiut Subdivision | Occasionally Maintained |

Public Transit Currently, there is no public transportation in Mountain Village. City officials have indicated that there is a need for transportation of children and elderly residents of the community. In the City's 1985 capital project request to the Alaska State Legislature, a nine passenger, four wheel drive van was listed as priority #8.

Utilities

Bulk Fuel

Corporation Tank Farm The Corporation tank farm consists of 11 horizontal tanks and nine vertical tanks. The tank farm is approximately 250 feet by 200 feet in dimension. Five tanks contain gasoline, 13 contain diesel fuel, and two tanks are empty for spill clean up, for a total filled capacity of 224,650 gallons. This tank farm is located near the quarry site on flat level ground and was opened in 1995 (see facilities layout plan in Appendix C).

All tanks are single wall, welded steel, and are in good condition with manholes and vents on top. The tanks sit on heavy timber foundations inside a fenced, gravel dike with liner. A welded steel pipe header connects the gasoline and diesel fuel tanks to the dispensing tank located at the base of the hill near the river and the fill header. The same header is used to fill both the diesel and gasoline tanks. The diesel is filled first, the line is cleaned out, and then the gasoline is filled.

AVEC Tank Farm This tank farm consists of 25 vertical tanks ranging in size from 6,065 gallons to 9,071 gallons, and providing diesel fuel to the village powerhouse. All tanks are BIA type, single wall, welded steel, with a manhole and vent on top along with a removable roof. Two tanks are in fair to good condition; the remaining tanks are in fair condition.

All tanks are contained within a gravel dike and ditch system on a heavy timber foundation, and there is a partial liner under five tanks. The tank farm is filled through the header system with the fill located 550 feet away at the river. The same pipeline also fills the school tanks and city pump house tanks.

LYSD Tank Farm There are three LYSD tank farms providing diesel and/or gasoline fuel to the school district. All three farms are owned and operated by the school district. One tank farm consists of two vertical tanks and supplies diesel fuel to the district offices and teacher apartments. A second tank farm consists of six vertical tanks providing diesel fuel to the high school and middle school. The third tank farm consists of seven vertical tanks, which provide diesel fuel, and one horizontal tank providing gasoline to the elementary school.

The two vertical tanks at the district offices and apartments both measure 14' x 11' and hold 9,950 gallons of diesel fuel. Both are single wall, welded steel, in fair condition, inside a dike with a damaged liner. This farm is not enclosed, but is set on a heavy timber foun-

dation. Each tank has a manhole and vent on top. The tank farm is filled through the 3” welded steel header that connects the tanks with the fill located approximately 3,000 feet away at the river. The LYSD manually fills the individual day tanks.

The second tank farm consisting of six vertical tanks serving the high school and middle school measure (Tanks 1 & 2) 12’ x 25’ and 44,065 gallons each, (Tanks 3 & 6) 14’ x 11’ and 9,950 gallons each, (Tanks 4 & 5) 14’ x 10’6” and 8,740 gallons each, for a total of 124,790 gallons of diesel fuel at this tank farm. All tanks are set inside a dike area with a liner that is up to 4” high at the base of the tanks. This facility is enclosed and set on a timber foundation. Tanks 1 and 2 are single wall, welded steel, in good condition, and have an explosion relief manhole. Tanks 3, 4, and 5 are BIA type, single wall, welded steel and in poor condition. The tanks are filled through the header system with the fill located at the river approximately 1,900 feet away.

The elementary school tank farm consists of seven vertical and one horizontal tank. All vertical tanks are BIA type, single wall, welded steel, and in fair condition. They are set on a heavy timber foundation inside a 4” high dike with no liner and a 6’6” high fence around the facility. Every two years the tanks are raised up due to ground settlement, but this has not been done in five years. The horizontal tank is single wall, welded steel construction in good condition with an explosion relief manhole. Each tank has a manhole and vent on top.

The horizontal tank is filled with gasoline by hoses from the fuel barge in the river. The vertical tanks are filled with diesel fuel through the header system with the fill located 25 feet away at the river.

City Tank Farm The City tank farm provides diesel fuel to the water and sewer pump-house, and consists of three vertical tanks inside a 2’6” high, gravel dike, set on a heavy timber foundation without a liner or enclosure. All the tanks are BIA, single wall, welded steel, with removable roof, manhole and vent on top, and in fair condition. The tank farm is filled through the header system with fill located 1,600 feet away at the river. Approximately 20,000 gallons of diesel and 5,000 gallons of gasoline storage is at the Corporation tank farm.

Disposition of Existing Facilities The existing facilities, except for the Corporation tank farm, will be removed and either landfilled at Mountain Village or shipped off site. The construction of the new tank farm does not include the removal of the existing facil-

ities. The removal will be on a separate contract to the construction of the tank farm. Contamination from the existing facilities will be addressed under the removal contract.

Existing Tank Storage Capacity Summary The following table lists the existing Total Tank Shell Storage Capacity capacity for all of the tanks currently in use. The shell capacity (100% of the potential tank volume) is stated since it is common for operators to completely fill the tanks and draw all fuel out of the tanks during normal operation of these facilities.

Table VI-3. Existing Total Tank Shell Storage Capacity

| <i>Facility</i> | <i>Diesel Capacity (gallons)</i> | <i>Gasoline Capacity (gallons)</i> |
|-----------------------|--------------------------------------|--|
| Corporation Tank Farm | 141,750 | 82,900 |
| AVEC Tank Farm | 196,149 | |
| LYSD Tank Farm | 183,770 | |
| City Tank Farm | 25,000 | 5,000 |
| TOTAL | 546,669 | 87,900 |

Water and Sewer Systems

The following sections have been provided by CE2 Engineers. The source is the “Water and Sewer Feasibility Study and Master Plan, Mountain Village, Alaska.”

WATER DISTRIBUTION SYSTEM

On June 14, 15 and 16, 2002 Chuck Eggener, P.E. and John Klovning, P.E. of CE2 Engineers reviewed the existing water and wastewater facilities to collect information on their condition.

Two circulating loop mains, the upper loop and lower loop provides water distribution in Mountain Village. (See Figure 6.) Water comes from four wells. The 1985 well supplies the upper pumphouse (circulator station) and upper circulating loop. The 1975 well, school well, and the cannery well supply the lower loop. There is an intertie between the upper and lower loops within the middle pumphouse (circulator station); water can be transferred between circulating mains in the event that supply drops below demand in either loop. There are two 1 00,000-gallon water storage tanks. One is located above the

upper loop pumphouse. The other is located adjacent the school, near the middle pumphouse, and nominally serves the lower loop. The water storage tanks, located as they are above each respective loop, provide system pressure.

Exiting wells do not require treatment. Water quality is good. Chlorine is added as a precautionary measure. The City discontinued fluoridating the water in 1993.

The U. S. Environmental Protection Agency Safe Drinking Water Information System contains numerous violations of failure to report, but does not indicate any exceedance of maximum contaminant levels. (See Report in Appendix E).

The Department of Environmental Conservation (DEC) has several reported incidents of positive tests for total coliform, some related to sampling procedures and others related to adding river water to the system. The presence of coliform in the City water indicates that pathogenic organisms might be present in the water. Chlorine is added to the water distribution system to kill pathogens. Boil water notices have been issued on several occasions. (See DEC correspondence in Appendix E)

LOWER LOOP WATER SYSTEM

Search for a reliable source of water in the City has produced a number of water wells in various locations throughout the community. At least six wells have been drilled in the lower loop and abandoned since the system began operating in the early 1970's. (See Appendix A for logs of the wells drilled in Mountain Village) The majority of the abandoned wells are in the general area of the present day Cannery Well. Records indicate adequate initial volumes but under sustained pumping, production dropped. At a point when production was considered inadequate, the wells were abandoned.

The lower loop has undergone several repairs and modifications since it was initially constructed in the early 1970s.

1975 WELL AND WELLHOUSE

The 1975 well is named for the year in which it was drilled. It has also been called the "booster station well" and "lower pumphouse well." The '75 well supplies water directly to the distribution main. The well water is intended to be chlorinated at the wellhouse prior to entering the distribution system.

Table VI-4. 1975 WELL DATA

| | |
|---------------------------|--|
| Well depth | 140 Feet |
| Casing diameter and depth | 6 inch, 59 feet |
| Existing pump | 10 stage Jacuzzi 3 Hp |
| Recorded Yield Range | January 1991, 21.3 gpm February 1995, 6.1 gpm |

The '75 well was tested for capacity in 1975 and 1982. During 1975 the static water table was at 6 feet below the ground surface. The water table during 1982 was observed at 45 feet and 52 feet. During 1975, the well was tested at 40 gpm for 6 hours; the drawdown stabilized at 43 feet. During 1982, the well was tested at 20 gpm for one hour. Drawdown was 55 feet; stabilization status is unknown.

The 16 x 12 feet 1975 well house appears in satisfactory condition. It contains the well, controls, an automatic adjustable (currently set to 10-minute) pump to waste diversion valve with air gap and a unit heater. Well water is metered and connected to the distribution system outside the wellhouse. The calcium hypochlorite solution vat, injector and injector pump had been removed on the date of inspection. Minor leaks were observed on the 2-inch manifold piping. A fluoride injection point appears to have been broken and plugged. An electric unit heater heats the '75 well house. There is no back up generator in the event of a power outage.

During inspection in June 2002 the well pump was started and pumped to waste for approximately 12 hours. Initial production was about 30 gallons per minute. The water was very red with dark black particulate. After 30 minutes water cleared and continued to produce about 15 gallons per minute with some pumping of air occurring. There was a slight hydrogen sulfide odor.

The 1975 well has "red water" problems. This is caused by the presence of iron reducing bacteria. The bacterium, once present, is nearly impossible to remove. It is not harmful for human consumption but the discoloration and even solids in the water make it aesthetically unappealing.

When iron bacteria grows in a well, chemical treatments and various types of physical methods can control them. For maximum effectiveness, chemical treatment must be accompanied by physical agitation of the well. Jetting, air surging, airlift pumping, and valved surge blocks are the principal methods used to agitate the well.

The pump to waste option on the 1975 well removes the majority of the objectionable discoloration before the water is pumped into the system. A maintenance program should be developed to treat the well on a periodic basis. This would involve pulling the pump and introducing an acid into the aquifer, agitating and pumping to waste followed by an application of chlorine and pumping to waste. Continuous use of the well will also inhibit the growth of iron bacteria. Care must be used so contamination from this well is not transferred to other wells.

CANNERY WELL AND WELLHOUSE

The cannery well was drilled in May 1975. It contributed to the lower loop water supply until it was abandoned sometime before 1980. It was brought back on line during 1989. The cannery well supplies water directly to the distribution main. The water is intended to be chlorinated at the wellhouse. The cannery well is so called because it is in the general vicinity of the old Cannery, though it is located on City property.

Table VI-5. CANNERY WELL DATA

| | |
|---------------------------|---|
| Well Depth | 225 Feet |
| Casing Diameter and Depth | 6 inch, 60 feet |
| Existing Pump | 4 inch, 10 stage, 1 1/2 HP Jacuzzi, 230 volt, single phase |
| Recorded Yield Range | January 1991, 11 gpm February 1995, 7.1 gpm |

The well was tested in 1975, during a time of high water table. The drawdown stabilized at 60 feet, after pumping 30 gallon per minutes (gpm) for 24 hours. The static water level was at the surface at the time of testing.

A new wellhouse was constructed above the cannery well during 1989 as part of a Division of Emergency Services (DES) project. As built drawings show a 5 gpm flow restrictor was installed on the drop pipe to protect the well pump during low yield periods. Facilities include the 12 x 12 foot pumphouse (in satisfactory condition in spite of a wayward vehicle strike which shifted the skid mounted building during the 1990's), oil heater, meters, an adjacent generator building and back up power generator. The water was chlorinated using calcium hypochlorite. As of the date of inspection (June 14., 2002) the chlorinator pump was missing, the pump to waste connection had been removed during a repiping repair (assumed freeze up), the generator battery was missing and the fuel oil feed line to

the generator and oil heater was ruptured and crimped. Heat is being supplied with a portable electric heater. The 2-inch Hersey meter on the return circulating line appeared to be nonfunctional. The air relief valve for the well does not appear to be functional. Pump-to-waste piping has been removed so testing of capacity is not possible except to pump the well to the distribution system. The generator does not have a runtime meter.

HIGH SCHOOL WELL AND WELLHOUSE

The school well, or high school well, is another product of the 1975 well drilling program. The school well initially was operated by the school but has been conveyed to the City. The school well pumps directly to the lower water storage tank and is chlorinated by mixing with chlorinated water entering the tank from other sources. The well and the transmission line to the storage tank drain back when the well pump is shut off.

Table VI-6. SCHOOL WELL DATA

| | |
|---------------------------|---|
| Well depth | 195 Feet |
| Casing diameter and depth | 6 inch, 41 feet |
| Existing Pump | 3 Hp Jacuzzi |
| Recorded Yield Range | June 2001, 18.6 gpm February 1995, 7.8 gpm |

During 1975 the School well was pump tested at 23 gpm for 24 hours. It had not stabilized by that time, but the drawdown was only 23 feet from a static water level of 23 feet 5 inches. The water table was high at that time; this pump test was under the best production conditions.

The School wellhouse is about 12 x 8 feet. The flooring could use repair, but the building is functional. It is heated with an electric baseboard heater. The school back up power system will supply the well with power in the event of power outage. In June of 2002 the discharge meter indicated the well was producing 25 gpm.

WATER STORAGE TANK (LOWER LOOP)

The ground level 100,000-gallon water storage tank serving the lower loop, located near the high school may need to be replaced. The exterior of the tank was originally coated with four inches of sprayed on foam insulation which has deteriorated and been removed

by vandals. Bare metal is seriously corroded at several locations around the perimeter of the tank. Corrosion has penetrated to depths that may not be correctable by sand blasting and recoating.

A corrosion survey should be undertaken to determine if the steel tank is salvageable.

MIDDLE PUMPHOUSE

The function of the middle pumphouse is to heat and circulate water within the lower loop. The middle pumphouse takes suction from the lower water tank through two 7-1/2 hp Jacuzzi (Model DM 1-1/2) circulator pumps, which discharge to the supply side of the distribution system. Two 400,000-btu/hr boilers heat water and the building. Heat is added after water passes through the circulator pump. An aquastat on the loop controls a pump to force a portion of the distribution supply water through a heat exchanger. Circulated lower loop water returns to the pumphouse and is routed to the middle water storage tank. The middle pumphouse has a 30 KW backup power generator. The upper and lower loops intertie is located in the middle pumphouse. Transfer of water either way is metered.

The 22-year-old middle pumphouse has some structural damage to the roof and soffit. One circulator pump for the lower loop is disassembled. Should the remaining pump fail, no circulation would be available for the lower loop. There is a single pump on the intertie between loops, sitting on wood cribbing, it should be duplexed and repiped. The standby generator is not functional due to missing battery. It should be rehabilitated before winter. The generator should be started regularly to insure its availability in times of emergency.

WATER DISTRIBUTION SYSTEM & SERVICES (LOWER LOOP)

The lower loop piping is shown in Figure 2. The lower loop is approximately 12,000 feet long. It consists primarily of 4" PVC and 4" HDPE arctic pipe with the east end addition in 1997 being 6" HDPE arctic pipe.

The flow rate of the lower loop was estimated using middle pumphouse meter reading data. During November 1992, daily lower loop supply and return flows averaged 117,000 and 105,000 gallons respectively.

The “no demand” (no water being withdrawn from the loop) flow velocity, in the existing 4-inch pipe, is about 2.3 feet per second (fps) (assuming 4 inch HDPE pipe). The same flow through a 6-inch line would have a velocity of approximately 1.0 fps, which is less than the 2 fps recommended to ensure proper circulation in pitoriface service lines.

A timeline should be developed to replace any existing PVC arctic distribution piping with HDPE. PVC is subject to shattering when frozen and its gasketed bell and spigot joints tend to separate when subjected to frost heave. Any replacement of mains should be with six-inch diameter HDPE arctic pipe to provide adequate flows for fire protection.

Adequately spaced hydrants should be added for fire fighting purposes.

Frost heave and subsequent settling have caused a number of water service lines to shift and pull out of the arctic boxes. On other service lines the insulation has been removed for thawing purposes or has deteriorated from the elements. Older service lines are copper and subject to bursting if frozen. Numerous arctic boxes have been opened for thawing or maintenance and not been put back together.

Repair or replacement of the mains, services and arctic boxes are required to bring the distribution system to a condition that will make it reliable through the winter season.

UPPER LOOP WATER SYSTEM

1985 WELL AND WELLHOUSE

This well, located 150 feet west of the upper pumphouse, was originally intended to augment the water supply from the 1981 well. which quit producing in 1987. The 1985 well is branched with the raw water supply line from the no-longer- operational 1981 well in the upper pumphouse. The down sloping utilidor from the 1985 wellhouse to the upper pumphouse is 4-inch PVC arctic pipe; it carries the 2-inch HDPE supply line and 2-watt/ft-heat trace. The 2-inch upper well supply line to the upper pumphouse does not drain and is electrically heat traced to prevent freezing.

Table VI-7. 1985 UPPER WELL DATA

| | |
|---------------------------|--|
| Well Depth | 251 Feet |
| Casing diameter and depth | 6 inch, 247 feet |
| Existing Pump | Jacuzzi Model 3S4XP 4 inch, 11 stage, 3 Hp 230 volt, Single phase |
| Recorded Yield Range | August 2000, 38.4 gpm April 1993, 14.4 gpm |

The upper well has low water shut off probes, which, according to the design diagram, were set at 5 feet and 25 feet above the well pump. The pump is set at 15 feet above the bottom of the well. The 1985 upper well drains back to 80 feet depth through a weep hole drilled in the drop pipe.

The upper 1985 well was pump tested at 25 gpm for 72 hours. The static level was 80 feet and drawdown was to 11 5 feet. The drawdown did not stabilize.

The 1985 Wellhouse appears structurally adequate, but should be painted. The piping and electrical wiring are in disrepair and need to be refurbished. The pitless adapter is disconnected and the electrical wiring for the pump is not secured. The electrical service panel cover has been removed. A portable electric heater is furnishing heat. The well pump should be pulled and inspected for wear and refurbished or replaced as necessary. If a dole valve (flow restrictor) exists removing it should be considered. If the air relief valve is operable, the existing electrical heat trace down the well could be removed.

ADDITIONAL WELL(S)

Assuming the occurrence of leaks in the low production months continues, construction of a new well is necessary and may provide adequate volume to compensate for the leaks. A site westerly of Valley Street (on the upper loop) has been proposed for the next well.

UPPER PUMPHOUSE

The upper pumphouse circulates and heats the water in the upper distribution loop. Water is chlorinated and passes through a heat exchanger, which adds heat to the upper loop and storage tank. An aquastat on the loop return line controls a hydronic zone valve to the heat exchanger. Heat is provided by two 400,000 Btu/Hr boilers. Two 5 horsepower circulator pumps are located in the upper pumphouse on the return side of the loop. Water is cir-

culated through the upper water storage tank prior to loop distribution. A 12.5 KW generator provides backup power to the upper pumphouse.

The 21-year-old upper pumphouse is structurally sound but has mold on the interior walls so interior panels should be replaced. Electrical controls and panels need refurbishment. The fuel tanks are rusting and need to be painted (they appear to be single wall). The fuel containment needs to be repaired. The boilers are rusted and need replacing; the burner on one is disassembled. The boiler replacement will be required to conform to the International Building Code 2000 as adopted by the State of Alaska. This will require a separate room to provide a one hour fire separation if the largest boiler is over 400,000 Btu per hour input. The heat exchanger is rusted and its' nameplate data is not readable. The generator building has a broken lock and can only be entered by prying it open. The generator is not functional because the battery is missing. The generator should be started regularly to insure its availability in times of emergency.

WATER STORAGE TANK (UPPER LOOP)

The upper 100,000-gallon storage tank is 650 feet up slope from the pumphouse. The water level in the storage tank is monitored with a pressure gauge located in the upper pumphouse. The gauge reads 51.5 psi (pounds per square inch) when the tank full and 45 psi when the tank is empty.

The Upper Water Storage Tank has a small amount of sandy sediments on the bottom. The metal covering over the insulation is in good condition. Sprayed on insulation on roof is partially deteriorated. The tank is in very good condition and should be serviceable for another 20 plus years.

WATER DISTRIBUTION SYSTEM AND SERVICES (UPPER LOOP)

The upper loop (see Figure 2) consists of approximately 7,000 feet of 4" and 6" HDPE arctic pipe and over 1,000 feet of 6" PVC arctic pipe. This equates to 14,000 feet of 6" HDPE equivalent pipe for head loss considerations. 180 gallons per minute of flow is required to maintain 2 feet per second (fps) velocity in a 6" HDPE pipe. 2 fps is the recommended velocity to operate pitorifices effectively.

The circulator pumps currently in the upper loop are 5 horsepower phase Paco pumps with a 4.25" impeller (See Figure 5 Pump Curve). The current head loss rate through the upper loop under a "no demand" (no water being withdrawn from the loop) condition is

about 42 feet. Any extension of water distribution main to expand the upper loop will cause the no demand flow rate to drop below 2 fps, which will require service line circulator pumps to ensure proper service line circulation or increasing the capacity of the loop circulator pumps.

The valve boxes at the intersection of the southerly end of the four-inch sub-loop on Valley Street are missing the covers and insulation. Rocks have been thrown into them so they are nonfunctional.

A timeline should be developed to replace any existing PVC arctic piping in the upper loop with HDPE arctic piping. The PVC pipe is subject to shattering when frozen and joints tend to separate when subjected to frost heave and subsequent settlement. Any replacement of watermain should be with six-inch diameter HDPE arctic pipe to provide adequate fire protection.

Adequately spaced hydrants should be added for fire protection purposes.

Frost heave and subsequent settling have caused a number of water service lines to shift and pull out of the arctic boxes. On other service lines the insulation has been removed for thawing purposes or has deteriorated from the elements. Older service lines are copper and subject to bursting if frozen. Numerous arctic boxes have been opened for thawing or maintenance and not been put back together. Two water services along the east side of Valley Street were observed (June 2002) with above ground leaks. Adequate repair will require total replacement of many of the water services, including new arctic boxes.

Repair or replacement of the mains, services and arctic boxes are required to bring the distribution system to a condition that will make it reliable through the winter season.

WASTEWATER SYSTEM

On June 14, 15 and 16, 2002 Chuck Eggener, P.E. and John Klovning P.E. of CE2 Engineers reviewed the existing wastewater facilities to collect information on their condition.

COLLECTION SYSTEM

With reference to Figure 3 the wastewater system consists of four distinct collector branches or collection areas as described below, the Rotating Biological Contactor (RBC) sewage treatment plant and the outfall line to the Yukon River.

A substantial portion of the existing collection system contains corrugated metal manholes with poured in place concrete bases. (See Appendix D Manhole Evaluation Report) Many manholes have shifted, the concrete bases have cracked and the pipe penetrations are no longer adequately sealed causing clear water to infiltrate into the collection system. This infiltration causes additional pumping and treatment costs. Corrugated metal manholes should be replaced with precast concrete manholes with flexible rubber “boots” to tightly seal pipe penetrations and eliminate infiltration and inflow.

Consideration should be given to replacing collection system mains that are of PVC materials. PVC is subject to shattering as it ages especially if frozen and the joints tend to separate when subject to frost heave and subsequent settlement.

Many sewer service lines were observed (June 2002) in poor condition. Frost heave and subsequent settling have caused a number of service lines to shift and pull out of the arctic boxes. On other service lines the insulation has been removed or has deteriorated from the elements. Numerous arctic boxes have been opened for maintenance and not been put back together. Repair or replacement of the services and arctic boxes are necessary to restore them to a condition that will make the system reliable through the winter season

EAST CENTRAL BRANCH

The east central collection branch lies on the east side of the central drainage area that bisects the city. Refer to Figure 3. The east central gravity collection mains include approximately 4500 feet of mostly 8” PVC arctic sewer main with some 6” PVC, and possibly some 4” PVC, manholes are predominantly corrugated metal. Note the recommendations above for manhole replacement on all branches of the collection system.

The east central collector sewer flows to lift station number one. From lift station number one, it is pumped through 840 feet of 3” HDPE force main to the terminal manhole near the sewage treatment plant.

The building housing Lift Station Number One appears in satisfactory condition. An extra 30-amp circuit is hanging loose in the electrical panel box. It was added to run the river water pump for the water system during last winters emergency and was not safely covered when river pumping was suspended. Both lift station pumps ran when turned on manually but the electrical control panel lights indicating pump on do not work. The trash basket intended to collect large solids from the gravity system before the solids enter the pumps is hanging loose, not on its mounting rails. The water service to the lift station has been abandoned.

WEST CENTRAL BRANCH

The west central gravity collection basin lies on the west side of the drainage area that bisects the city. The west side sewer is a gravity main discharging directly to the terminal manhole above the sewage treatment plant. The west central branch serves the hillside housing west of the creek and houses along Peterson Street. Refer to Figure 3. It includes approximately 7,000 feet of 8” PVC arctic sewer main and 15 corrugated metal manholes. General recommendations for replacement of PVC pipe material, corrugated manholes and inadequate services as discussed in 8.1 should be implemented.

SPRING WATER ROAD BRANCH

The Spring Water Road gravity collector empties to lift station 92. Lift station #2 serves Spring Water Road conveying wastewater to the terminal manhole on the north side of the STP. After lift station #2 was constructed and tested (PHS circa 1982), the sewage pumps were pulled and the station was not brought on line. The Spring Water Road sewer main had been previously abandoned and was not rebuilt until 1994 at which time the lift station was refurbished and placed into service. The Spring Water Road gravity collection system is in good condition.

Lift station number two building appears in satisfactory condition. The exhaust fan is not functional. The trash basket intended to collect large solids from the gravity system before the solids enter the pumps is hanging loose, not on its mounting rails.

CANNERY/EAST SIDE BRANCH

The cannery/east side collector was built to serve the Cannery area and a few homes to the east of the cannery. The collector discharges to lift station #3. Only two homes are currently connected to this branch. The cannery/east side branch including lift station number three was built in 1996.

The force main from lift station #3 has frozen during the past two winters either due to a “sag” in the forcemain or failure of the operators to open the seasonal drainback valve in the fall. As a temporary measure wastewater is pumped from the wet well and hauled as necessary until the forcemain thaws.

Lift station number three forcemain was frozen on the date of inspection. The wet well was nearly full to the inlet pipe. Pump number one started during the inspection, it is

pumping against the frozen forcemain. The pumps were shut off. Total run hours for both pumps was 6,800 hours, so pumping against a dead head has been occurring for some time.

The force main needs to be dug up and regarded to ensure drainback. Care must be taken to open the small drain back valve each fall to prevent freeze up.

RBC TREATMENT PLANT

From the terminal manhole, wastewater flows to the Sewage Treatment Plant (STP). The STP includes two 20,000-gallon septic tanks, which provide primary clarification, rotating biological contactor (RBC), secondary clarifier, chlorination chamber and effluent outfall. The septic tanks were intended to remove solids and dampen flow variations. The RBC was to provide secondary treatment. The facility has been non functional for several years after experiencing a myriad of mechanical problems cumulating with a catastrophic failure of the gearbox on the RBC drive init. The plant is not repairable. (See Appendix B Wastewater Treatment and Disposal Options)

RIVER OUTFALL

Effluent is discharged to the Yukon River through an 8” HDPE pipe with weighted collars (on the length in the river) to keep it on the river bottom. The outfall line to the river is blocked (June 2002) or frozen so settled sewage is coming up through a cleanout and flowing overland and through a small creek to the river. The City crew is attempting to jet the blockage to open the outfall line. The outfall line was damaged in an attempt to locate it.

NEW WASTEWATER LAGOON

A new wastewater disposal system is required as the existing Rotating Biological Contactor (RBC) is no longer in service and beyond repair. The appended Wastewater Treatment Investigation Report details the options and recommends the construction of a facultative lagoon west of the City.

VII. ECONOMIC DEVELOPMENT AND FUTURE LAND USE

Development Authority

The city of Mountain Village should establish through ordinance, a Mountain Village Development Authority. The purpose of the Development Authority will be to support planning and secure project financing which leads to jobs and economic infrastructure. The Tribe would be invited to participate in a joint MOA with the Authority, establishes protocols which ensure the cross leveraging of projects. In the case of housing, for example, Tribal and non-tribal (AHFC, USDA) housing resources would be combined to maximize the beneficial local economic impact for nearly 1 million dollars a year of building for housing related development (SEE analysis, below).

Multiyear capital development. The presence of a multiple stakeholder Development Authority would position the city to leverage capital for multi-year housing development. Multiyear projects provide predictable levels of spending over time.

Future Residential Development.

New housing will be developed northeast of the central townsite on U.S. Survey 8454. Based upon the assessment done by CE2 Engineering, approximately 40-60 acres would be dedicated for that purpose. An estimate of 90 new houses in 30 years. The water and sewer infrastructure cost to support that new housing is estimated at \$90,000 per house. Additional 'household' costs such as solid waste, electrical service and communications would all be added to the cost of each house as well. On a per house basis, the author estimates these appurtenant costs to be \$20,000.

The average per unit housing cost in 2002 dollars will be \$175,000. This will yield a thirty year housing unit investment of \$15,750,000.

It is strongly recommended that an economic development component in any housing plan be requested by city resolution where the housing resources are Tribal and required by ordinance when the housing resources are city-sponsored. The location of the future housing development is identified in the attached future land-use map.

Future Water and Sewage Development

Water and Sewer development, modification and upgrade over the next 30 years will be significant. a 30-year projection produced by CE2 Engineering shows the following potential development scenario for water and sewer for the city of Mountain Village.

Table VII-1. Future Water and Sewer Development

FY 2003 Middle, Upper Pumphouse; Phase 1 New Wastewater Lagoon.
 FY 2004 Phase 2 New Wastewater Lagoon
 FY 2005 Water Loop Repair and Replacement
 FY 2006 Continuation of Repair and Replacement; New Well & Wellhouse
 FY 2007 Expand New Water Mains and Service Lines.
 FY 2008 through FY 2032 a cycle of 5 year repair, replacement and upgrade schedules.

This scenario assumes a continuous schedule of maintenance and operations and expansion with an aggregate investment of \$38,375,956.

There will be a significant amount of easement work to develop the full system over the years. An attached map overlay shows the configuration of future water and sewer.

Future Energy Systems Development

AVEC system consolidation and expansion is currently projected to require an investment of approximately \$2.5 Million. Over the next five years, the expansion of the system will generate another \$2.5 million in investment to construct power and pole intertie between Mountain Village and the community of St. Mary’s and backup generation capacity for providing peak demand services to both communities. Assuming the growth of 1.5% per year and a capital replacement rate of 14% per annum (equivalent to a 7 year depreciation cycle), the thirty year projection for new construction, replacement and maintenance for energy systems yields the following:

Table VII-2. Future Energy Systems Development

| | Base | Growth | Replacement |
|---------------|---------------|-----------|---------------|
| FY 2003 -2007 | \$5.0 Million | \$375,000 | N/A |
| FY 2008-2013 | \$5.4 Million | \$405,000 | \$3.8 Million |
| FY 2014-2019 | \$5.8 Million | \$435,000 | \$4.1 Million |
| FY 2020-2025 | \$6.2 Million | \$465,000 | \$4.3 Million |
| FY 2025-2030 | \$6.7 Million | \$502,000 | \$4.7 Million |
| FY 2030-2032 | \$7.2 Million | \$216,000 | \$2.2 Million |

TOTAL projected energy investment will include the FY2032 Base + Growth for FY 2031 and FY 2032 plus the cumulative repair and replacement from 2003 through 2032 or \$7.2 Million plus \$216,000 plus \$19.1 Million.

\$36,500,000 will be invested in energy projects for Mountain Village over the next 30 years to accommodate growth and replacement of capital.

The investment scenario based upon the meetings and discussions with the planning committee and AVEC engineering consultants is projected as follows:

FY 2003-2008 relocation and expansion of existing bulk fuel facilities, construction of a transmission Intertie between Mountain Village and St. Mary's and the construction of a 2 mW peak offload facility in Mountain Village. This 5 year period will generate investments of 5 Million dollars in the base. Repair and replacement of capital will not be significant for the first 5 years and is not included as an investment cost in the scenario.

FY 2008-2032 Incremental growth will account for additional development including Development of shoreside tanker barge offload facility, pipelines and the expansion of holding and transfer systems and new bulk fuel storage. The cost of replacement of capital includes the average replacement value of all facility based on an ideal rate of repair and replacement. The actual investment could be significantly less if the repair and replacement of capital is deferred, though this is not recommended.

Wastewater and Sewage Lagoon

This facility will require a new 2 acre site including a 1 acre facility with offsets. The lagoon will be designed to accommodate the new residential development sweep and will be designed to accommodate the increase in business and economic development activities incorporated in this plan. This facility will have to be developed in the first 5 years of the water and sewer expansion project design. The cost of this facility is included in the cost scenario cited above. There will be a significant impact on the lagoon in the event of a significant growth in commercial demand as a result of the projects identified in this plan. An additional \$1.5 Million in infrastructure investment may be required to expand the existing facility to accommodate those projects. This cost is incorporated in the water and sewer engineering estimates quoted elsewhere in this study.

Sauna and Laundromat Services

Emergency Community Alternative Services (FY 2004): Sauna/Laundromat with independent well for water source was identified as a project during the planning process. This facility would be large enough to serve the washing and laundry needs of 20% of the City. This is considered an "emergency alternative service" because the community has a history of loss of power and/or water and sewer services. Interruption of these services poses a significant health and safety risk for households on the affected loop. Because of the way in

which the service is looped through different water sources and distribution infrastructure, the city manager estimates that a maximum of 20% of the population might find themselves affected at any one time.

The facility would be designed to operate on a demand meter for water/sewer and electrical services. The demand meter would be set for a maintenance amount of heat and electricity. Additional usage would be routed through pay meters. The pay meters would be calibrated to estimated the cost of electricity, water and sewer service plus overhead and reserves for maintenance, repair and replacement of the facility. This a load of laundry might cost \$2.00. A personalized bar code pass-key would be issued by the city. It would have a code that is distinct to each person. The usage meter would be swiped by the user and the city would bill that person for his/her usage at the end of the month. The minimum (stand-by) maintenance cost for this facility might be as low as \$300/ month, if there were no users of the facility at all. The minimum maintenance cost could be handled in a variety of ways:

1. Through a higher usage fee paid by individual users of the facility;
2. Through a city-wide assessment billed to each household by the city.
3. The minimum costs could be assumed by the city and paid for out of water and sewer revenues which would be reimbursed when and if revenues from metered services provided sufficient fund flow over and above reserves to make a payment to the city water fund;
4. A combination of these options.

Stand-by metering and on-demand metering maintained with pass code key cards would ensure that the facility would be available for emergencies but accessible for use-on-demand by the community. The more use, the more revenues to cover the cost of use and reserves to cover the wear-and-tear on the equipment. The automated billing system ensures accountability for the use of the facility. The estimated design and construction cost for this facility and wells is preliminarily estimated at \$150,000. A 20 year capital replacement and growth factor of 150% will generate a 30 year investment profile of \$325,000.

Industrial and Dock Development Trade and Manufacturing

An 8.52 acre trade and manufacturing site is located on USS 4010 which includes the old cannery building. A commercial and industrial dock was one of the recommendations made by the planning committee for the development plan. This site could be developed in support of harbor and drayage services

Modular facilities might be developed and leased to entrepreneurs as there is a demand. This site would have engineering issues because it is on or near a flood plain. An articulated or 'floating' facility with independent power and water/sewer holding tanks would be required for this site.

A non-waterside industrial site alternative would be the old airstrip located between the Azachorok, Inc.'s fuel depot and Jacob Avenue. This would require a buffer between the residential development nearby and the industrial site. The site would be near power, be sufficiently elevated to avoid flooding, and have the benefit of an excellent base for building.

The waterside site could be developed for marine engine repair, hull design, construction, and repair, fish processing and packaging. Also located on the floating end would be a warehouse facility for storage and drayage services.

The alternative industrial site could be used to establish an arts and crafts manufacturing center, a housing modular construction assembly facility and a pipe warehouse, among many options.

The development strategy for the industrial sites would be to anchor them with co-location services such as a regional training facility (See Below),

Key issues in the development of these industrial sites would be:

1. Proximity to transportation facilities for shipment to market;
2. Availability of adequate utility services at affordable prices
3. The availability of broadband communication services
4. The availability of a skilled workforce

Dock and Harbor Improvements

Mountain Village should leverage its proximity to the mouth of the river to become the Port-Of-Entry to serve the other Yukon villages in the Wade Hampton Census Subarea. The following are a few of the facilities that are economically desirable.

- Full drayage capabilities.
- Full Drydock facilities
- Marine Service Concessions.
- Located on 3-5 Acres along the riverside.

The estimated cost to prepare the the 8.52 acre site would be about \$300,000 per acre. This would include cost for architecture and engineering costs, shoreline reinforcement, utilities, water and sewer gathering and lift stations, electrical services, service roads, dock superstructures suitable for expansion. Lots would be developed individually and built-to-suit. The cost of each development would be amortized in the lease agreement.

The strategic approach for the development of the dock facility and industrial site would be to assemble a package of letters of interest from various vendors and users of the facility. Based upon this interest, the Authority would then finance a feasibility plan reflected the most likely vendors and users of the facility. This incremental approach would allow the public finance authorities and agency partners an abundance of caution in the development of the site. For example, based upon the projected development scenarios in this plan, the authority may be able to induce a modular housing/building company to locate a facility for receiving lumber and building supplies, assemble modular units and ship them out throughout the Wade Hampton area. An multi-year project agreement would then be negotiated among the Asa'car'sarmiut Tribe, The Regional Housing Authority, Azachorok Corporation, city and the vendor which would result in an apportionment of project benefits for the participants and the community. The Agreement would include a leasehold agreement which would underwrite a portion of the development costs of the 8.5 acres. The Authority would structure a combination of financing instruments including state inducement authority through the bond bank and federal guarantees to wrap around the state financing. The city might have to dedicate the fund flow from the lease into an escrow account to finance a Certificate of Participation for that portion of the housing assembly/warehouse facility in the industrial area.

Another facilities that would be build incrementally include a regional bulk fuel storage facility for transshipment up the Yukon to village sites. This might be built by AVEC, the Transportation Companies or the school district or all of these. Other facilities constructed incrementally are:

- Regional Training Facility
- Drydock/Marine Repair
- Heavy Welding and Metal Fabrication
- Heated Warehouse/Refrigerated Storage

The total capital cost of these facilities would range from \$10 Million to \$15 Million current US dollars. A longer line depreciation would result in about a 50% replacement over

the 30 year time frame of this projection. A growth factor of 25% is assumed. This will yield a total capitalization over 30 years of \$17.5 Million to \$26.25 Million. The projected mean of that range would be \$21.88 Million. Add to this figure the \$300,000 per acre common cost subtotalling \$2.55 Million. The estimated total 30 year investment for this component of the Mountain Village Economic Development Program would totals \$24,430,000.

Elderhousing/Heritage Center

Elderhousing/Heritage Center would combine both residential, recreational and community service space in a congregate setting.

Integrated housing for elders. To ensure the functionality, use and accessibility of the facility the Elder Center would incorporate a congregate housing facility for 20 Elder Couples or Singles. Proposed to be located within the thumbprint of the future cultural center would be congregate housing where elders would have the option to reside in a supportive setting. The housing portion of the Elder Center would be financed through a combination of loans and grants. The grant portion of the facility would provide for the design and construction of the common facilities and a portion of the cost of each unit. The loan portion of the financing for the housing would be underwritten by leasehold agreements developed through the housing authority, state of Alaska or any participating agency. These agreements would be anchored by transfer payments (when applicable) including vouchers, subsidies or other supports provided to the elderly through community based programs. Some units would be available for private financing. Once the financing agreement is completed through the city/Development Authority, the congregate housing manager will complete the build-out of the unit. The Elder would be able to choose color, appliance and cabinets and other built-ins. The financing would be structured to incorporate a prorated share of common facility costs including overall facility maintenance and operating costs.

Integrated health services. The center would also provide satellite Eldercare Services for Mountain Village located in the congregate housing wing of the center. These facilities would be designed and developed under a cooperative agreement with the Yukon Kuskokwim Health Authority. The cooperative agreement would be covered by a joint facilities agreement which would establish standards of maintenance, access, security and other matters which affect quality of service. The objective for the city would be to secure an anchor tenancy in the Elder Center which would help to provide a high quality of life and would bear a portion of the cost of overall facility maintenance and operation.

Heritage Center. The purpose of this portion of the facility would be to provide a common cultural space for the city of Mountain Village which would also be a center of activity for the Elders. In addition, this facility would be an anchor attraction for the visitor industry which the city has targeted for development and was discussed earlier in this plan. This portion of the facility could be funded under a combination of grants including a HUD community development block grant or a grant from the Administration for Native Americans. The integration of the other components of this facility would be very attractive to these grant programs as they give points for leveraging funds. As envisioned by the planning committee the cultural resources belonging to the Tribe could be consolidated in a cultural space which would be physically connected to the Elder Center. This would ensure Elder participation in the community cultural space. A 5 acre campus would be developed to provide for outdoor activities, weddings, memorial potlatches and outdoor community events. A performance space inside the center would be available for traditional dance performances and concerts. Each of these events would generate some fees to help offset operational and maintenance costs. The city could transfer its bingo operation to the performance space and dedicate a percentage of the bingo proceeds to maintenance and operation and a reserve fund for repair and replacement of the cultural center facility.

The use of the Cultural Center and the common grounds and facility would be organized under a non-profit Elders association who would, in turn select the governing board for the Center.

The conceptual costs to develop the facility would be about \$4.0 Million:

1. Congregate housing (20 Units) \$2.0 Million
2. Eldercare facility (Integrated) \$1.0 Million
3. Cultural Center and Grounds \$1.0 Million

A 20 year capital replacement and growth factor of 20% will generate additional \$800,000 in investment for a 30 year total of \$4.8 Million.

Youth and Day Care Center

A facility established to promote a healthy environment for the Youth of Mountain Village. A full acre lot would be developed for a skating park and a dirt bike track. Outdoor basketball hoops and volleyball net would also be developed. Volunteer Youth Counselors would be available.

Consolidation of youth services could take place in the facility. This would do two things, first, the consolidation would provide human resources to integrate the operation of the

center with the management of the programs which would be centered there; the second thing is that the programs could offset facility costs through payment of a portion of the common costs through rental for program space. The utilization of programs like summer youth employment to help maintain and operate the Center would help to ensure youth involvement. The Daycare facility would share common facilities but would be operationally separate from the youth programs. This would also help to distribute the cost of common facilities. The city could help to provide in-kind matching funds for grants to design and construct the facility by provides the lot as an in-kind contribution. An advisory group consisting of youth, clergy, and program professionals should be activated (the city can convene these meeting) Develop match grants and contributions for a 'building goal' for the youth center. The Daycare portion of the facility has to be built to standards established by the State of Alaska. Once approved as a licensed commercial center, the daycare operation would help to support a portion of the facility common costs. Approximately \$500,000 would be needed to construct the facility. 20 year capital replacement and growth would equal \$750,000 generating a 30 year investment profile of \$1,250,000 in this facility/program.

Visitor Lodge and Public Access and Trails

There is a need to develop facilities inside the city and in the municipal boundaries of the city which emphasize the recreational potential of the area. The first part of the initiative will be to establish a system of public walkways and benches throughout the City. The visitors (and residents) in the city will have an improved experience with a series of covered walkways and rest areas which reduce the pedestrian conflict with 4 wheeler and vehicle traffic. In the wintertime, a well-maintained walkway system will reduce ice and snow hazards, particularly on the elderly and will encourage walking and visiting about the town.

Visitors will also have access to a trailhead located near the airport on the Mountain Village St. Mary's Road. The trail will run from the trailhead parallel a utility road running less than a mile to the boundary of the Yukon-Kuskokwim National Wildlife Refuge. At the boundary of the YKNWR, and still within the proposed expanded municipal boundaries of the city, a Visitor Lodge and Headquarter Site for the Refuge will be constructed. At the lodge, the utility road will terminate and a hiking trail will continue West along the boundary of the YKNWR. The trail will meander a total of 5 to 7 miles as it gradually forks. One fork will loop back to the Lodge/trailhead; the other loop will terminate at the highway just North of the city, affording an easy walk into town.

The Trail system will be marked and mapped for different users including nature walkers, hikers, and mountain bikers. Rest areas would be available. Emergency radio equipment

will be available to the visitors as well. Local guides will be available for groups and cook areas will be provided along with an orientation for proper handling and disposal of food on the trail.

The Headquarters site would be designed to support information, maps and research related to the Wildlife Refuge. It would be offered as a partnership between the YKNWR and the city of Mountain Village. The benefit of anchoring the site with a Refuge information and visitors center is that such a facility would encourage visitors to the Mountain Village area. These visitors, in turn, would be purchasing goods and services from the local community. The headquarters site would include household living space for FWS employees or city resident staff.

The lodge would be designed initially to accommodate up to 25 visitors a night with a combination of double and single rooms. The design of the facility would be modular to accommodate quick expansion of the facility. Wastewater, sewer, drinking water and utilities would be designed for carrying capacity adequate to accommodate a 100% growth of the lodge in 5 years.

This overall plan for anchoring tourism in the Mountain Village Area would begin by developing a partnering agreement with the USFWS to participate in an advisory capacity with the city of Mountain Village (e.g., Development Authority) to develop a “concept plan” for visitor trails and a lodge. An additional minigrant or a small USDA/RD grant would be requested to fund the planning and architectural drawing of the trail system/lodge concept plan. The congressional delegation would be kept informed of this initiative and be invited to a reception in Mountain Village once the ‘concept plan’ is completed and the visual rendering are ‘unveiled’. The USFWS and the city then sign a MOA to cooperate in the development of this concept plan. After the signing of this Agreement (which could be part of the ceremony unveiling the plan), a group of representatives of the city would meet with the congressional delegation and seek to secure designated funding in the budget of the USFWS and the USDA/RD for the Refuge-Mountain Village components of the concept plan. The designated funding would be phased to include architectural and engineering work on both the facility and the trail system, detailed drawings and certified cost estimates. The next phase would include the development of bid-ready documents and then contracting for the construction of the facilities. The construction would emphasize local hire or forced accounting, if possible. The development authority, based upon a marketing plan developed as part of the design package would then secure funding to implement the marketing plan, which begins a full two years ahead of project completion. So marketing will be done on a parallel track with the final design

and project development. Based upon market interest and preliminary bookings, management/investment partnership agreements would be secured to finance startup. Training for local guides and workers would begin one year prior to startup.

This scenario anticipates that there would be a five year timeline to operationalize this project:

Table VII-3. Timeline for Lodge/Visitor Center Development

- Year 1 (FY '03) Organize planning and concept funding
- Year 2 (FY '04) Reception and Concept Unveiling
 - Project MOA is signed
 - Appropriations Secured USFWS/USDA-RD
- Year 3 (FY '05) Engineering, Cost Estimate, Bid Ready Documents
 - Market Plan Completed and Implementation
 - Bid Project
- Year 4 (FY '06) Construction of utility road and Trail system and Appurtenances
 - Construction of Covered Walkways in city
 - Lodge and HQ Site Preparation
 - Recruitment and Training of Hospitality Workers
- Year 5 (FY '07) Construction of Lodge and Visitor Center/HQ Completed
 - Grand Opening
 - First Guests

Estimated cost: \$7.5 Million over 5 years. Capital cost of \$6 Million replaced at the rate of 150% over 20 years or \$9 Million (maintenance, replacement plus growth) generating a 30 year total investment cost of \$16.5 Million.

Consolidated Business/Government Complex

Current needs and future growth resulted in a project identified as a consolidated business and government complex. This effort to combine the various governmental offices into a single complex will benefit from an aggregation government program overhead receipts allocated to leasehold expense. Twenty five city and tribal employees would have their exclusive space but would share common facility costs. One strategy would be to invite Azachorok Corporation to be the developer of the complex. They could add their own office requirements to the floor plan and share facility costs as well. There would be a few empty office spaces available for federal agencies or private non-profits to lease which would further distribute the common costs. The office spaces would be arrayed on the second floor and would be metered and zoned separately from the first floor. The first floor

would be business concession space, including a small restaurant/coffeehouse space. These would be set up like concession spaces for businesses to locate to a clean, attractive and secure location. Certain businesses, like a cafe and a magazine stand would have access to the captured market inside the building. For planning purposes, the first floor will remain partially unfinished until leasees are located for the business complex. Commercial areas located on the first floor and the governmental leaseholders will be located on the second floor. Land demand would be about 1.5 Acres of space.

VIII. PLAN IMPLEMENTATION

Conclusion and First Steps

The city should proceed with the goal to maximize the opportunities described in this plan. The sequence of actions would be as follows:

1. Request an extension of the existing municipal boundaries to the local boundary commission to be coterminous with the Azachorok Corporation up to the Yukon Kuskokwim Wildlife Refuge to the North and extend approximately 7 miles to the northeast to incorporate 1/2 of the length of the St. Mary to Mountain Village road.
2. Select the land requirements described herein and submit the form attached in this report to Azachorok Corporation for their agreement which would then be filed with the state and federal Trustee.
3. Selections would then be platted by the city and a new townsite map reflecting these selections would be printed.
4. Parallel to the above land transfer and boundary issues, the development of projects located existing city lands could begin.
5. Negotiate with the Tribe and the Corporation the formation of an independent agency co-located with the city called the Mountain Village Development Authority. This authority would be the lead agency for economic development within the city boundaries and would function as an agency “one-window” authority for city and Tribal development.
6. Co-locate the Authority with the city.
7. Redirect revenues to establish an executive director of the authority.

8. The director will take each of the priority projects and develop a PERT chart and negotiate project development agreements for each of the projects identified in this plan. The project development agreements will be among the minimum number of parties needed to create the maximum amount of development.

9. Engage partnerships and implement.

**Table VIII-1. 30 Year Economic Development Investment Profile
for the City of Mountain Village**

| Project | Total Investment Value | Developer |
|---|-------------------------------|--------------------|
| Housing | \$ 15,750,000 | NAHASDA/Authority |
| Energy Project | \$ 36,500,000 | AVEC/Authority |
| Water & Sewer | \$ 38,375,956 | PHS/Authority |
| Emergency Wash | \$ 325,000 | City/Authority |
| Elder Housing/Cultural | \$ 4,800,000 | City/Authority |
| Youth & Day Care Center | \$ 1,240,000 | City/Authority |
| Lodge/Visitor Center | \$ 16,500,000 | City/Authority/Fed |
| Dock Development and Industrial Site | \$ 24,430,000 | City/Authority |
| Government and Business Complex | \$ 2,500,000 | City/Authority |
| TOTAL | \$ 140,447,956 | |

IX. REFERENCES CITED

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