



KNIK - FAIRVIEW

COMPREHENSIVE

PLAN



MAY 1997

KNIK-FAIRVIEW COMPREHENSIVE PLAN

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PREFACE

Purpose of Planning

The purpose of planning is to provide the residents and property owners and other members of the community the ability to make effective decisions about the needs and goals of their community. The Matanuska-Susitna Borough Comprehensive Plan has guided land use decisions regarding the Knik-Fairview Area since its adoption in 1970. This comprehensive plan is an amendment to the Matanuska-Susitna Borough Comprehensive Plan.

A comprehensive plan is a compilation of policy statements, goals, standards, and maps for guiding the physical, social, and economic development, both private and public, of a community. It is necessary for the immediate preservation of the public's peace, health and safety.

Alaska Statute Title 29.40.030 requires that the assembly of a second-class borough adopt a comprehensive plan by ordinance. The Matanuska-Susitna Borough was incorporated as a second-class borough in 1964. Alaska Statute defines a comprehensive plan as "a compilation of policy statements, goals, standards, and maps for guiding the physical, social, and economic development, both private and public, of an area." The comprehensive plan may include, but is not limited to: statements of policies, goals, and standards; a land use plan; a community facilities plan; and recommendations for implementation of the comprehensive plan.

Matanuska-Susitna Borough Title 15.24.030 requires the borough assembly to prepare comprehensive plans designed to:

- promote safety for vehicular and pedestrian traffic, prevent congestion and preserve the function of roads;
- secure safety from fire, flood, pollution and other dangers;
- promote health and general welfare;
- provide for orderly development with a range of population densities, in harmony with the ability to provide services efficiently, while avoiding overcrowding of population;
- provide adequate light and air;
- preserve the natural resources;
- preserve property values;
- promote economic development;
- facilitate adequate provision for transportation, water, waste disposal, schools, recreation and other public requirements.

The comprehensive plan provides the community with a method of analyzing past development and influencing the future outlook of their community. Information about a community, its economy, land use, public facilities and transportation facilities are collected and analyzed. Projections of community growth and future needs are made. Through citizen participation community goals and objectives are identified. Recommendations for land use public facilities and transportation facilities are developed based on these goals and objectives.

The effectiveness of a plan is determined by the extent to which it is used. Public agencies use a comprehensive plan as a guide when determining the best location of schools, parks, streets and other public improvements. The comprehensive plan enables a community to reserve land necessary for public uses in advance of rising costs or competing land use. The plan is also a guide to individuals and private companies when making investment and development decisions. It should be used as a guide whenever questions affecting development within the community arise.

Planning should be a continuing process. A comprehensive plan is based on information available at a particular time. In the future, new developments may occur and the needs of the community may change, at that time the plan should be reviewed and updated.

Borough Planning Process

The Matanuska-Susitna Borough was incorporated January 1, 1964 as a second-class borough. Alaska Statute, Title 29, Chapter 40 directs that the assembly of a second-class borough to adopt a comprehensive plan with the recommendations of the planning commission. Alaska Statute further requires the assembly, after receiving the recommendations of the planning commission, to undertake an overall review of the comprehensive plan and update the plan as necessary.

The Matanuska-Susitna Borough adopted a borough-wide comprehensive plan in 1970. That plan was reviewed in 1985. At that time, the borough assembly chose not to revise the plan. Instead, they adopted Resolution Serial No. 86-7 which established a policy for the development of community based comprehensive plans. The policy is as follows:

“The Matanuska-Susitna Borough Planning Commission is required by State Law to develop a Comprehensive Plan for the Matanuska-Susitna Borough. It is the intent of the Matanuska-Susitna Borough government to learn of and respect each community's desires for its present and future way of life and to insure that these desires become each community's portion of the Matanuska-Susitna Borough Comprehensive Plan. It will be the responsibility of the community to determine the extent of, or lack of land use restrictions to be applied in the community.”

Based on the Assembly's action, the Planning Commission established a process for developing community based comprehensive plans. Under the process, local planning activities may be initiated by request of a community or area. A request for local planning assistance is forwarded to the Planning Commission for consideration. Upon Planning Commission approval of the request, planning staff advertises for members of a local advisory planning “team.” The policy for membership applicable to the Knik-Fairview Plan requires that an individual be a resident or property owner within the planning area boundaries. All applications for membership are reviewed and appointments to the Planning Team are made by the Planning Commission.

The Knik-Fairview Community Council made a formal request to the Planning Commission for a community based comprehensive plan. Their request was approved by the Planning Commission and a citizens' planning team was formed for the development of the Knik-Fairview Comprehensive Plan.

The following plan was developed over a three year period of monthly meetings of the Knik-Fairview Planning Team.

Sections 1, 2, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 27, 28, 29, and 30	All
Sections 24, 25, 26, and 35	Lying north of the MHW of the Knik Arm
Sections 31, 32, 33, and 34	All
Township 16 North, Range 4 West, Seward Meridian, Alaska	
Sections 25 and 26	All
Sections 35 and 36	Lying north of Pt. MacKenzie Road
Township 17 North, Range 1 East, Seward Meridian, Alaska	
Section 18	Lying south of the Alaska Railroad
Sections 19, 30, and 31	All
Township 17 North, Range 1 West, Seward Meridian, Alaska	
Sections 13, 14, 15, 16, 17, 19, and 20	South of the corporate limits of the City of Wasilla
Sections 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36	All
Township 17 North, Range 2 West, Seward Meridian, Alaska	
Sections 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36	All

Where the boundaries of the Knik-Fairview Community Council conflict with the boundaries of the Core Area Plan, the Knik-Fairview Special Land Use District shall exclude that portion of land within the Core Planning area.

Other Plans Affecting the Planning Area

There are other major documents affecting the Knik-Fairview Planning area. Listed below is a brief description of each of the plans. A more detailed description of some of the plans is included in the appendix.

Matanuska-Susitna Borough Coastal Management Plan

The Knik-Fairview planning area is located within the Matanuska-Susitna Borough Coastal Management District and is, therefore, subject to the requirements of the plan. All uses and activities that are dependant upon coastal access or that would affect coastal habitats and processes, coastal air, land and water quality, historical and recreational values are subject to the Matanuska-Susitna Borough Coastal Management Program. These include all commercial and industrial uses and all residential developments requiring the application of Borough Code, Titles 15 (Planning), 16 (Subdivision Regulations), and 17 (Zoning Regulations).

Willow Sub-Basin Area Plan

The Knik-Fairview planning area is located within the Willow Sub-Basin Area Plan boundaries. The Willow Sub-Basin Plan is a land use plan applicable only to state and borough lands. The Knik-Fairview planning area includes lands within the Wasilla Management Unit and the Knik Management Unit of the Willow Sub-Basin Area Plan. The recommended land uses within each of the management units are listed below.

Wasilla Management Unit

- Settlement
- Small Farm Agriculture
- Commercial Agriculture
- Recreation (fishing, local & regional parks)
- Forestry (personal use)
- Parks Highway Scenic Areas

Knik Management Unit

- Small Farms
- Settlement
- Recreation
- Fish and Wildlife
- Forestry

Matanuska-Susitna Borough Comprehensive Development Plan: Transportation

This borough-wide plan was adopted in 1984. It identifies 6-year and 20-year transportation plans for the borough. The two projects within the planning area, the construction of Johnson Road and extension of Vine Road, have since been completed. This plan is presently being updated.

The Matanuska-Susitna Borough Comprehensive Development Plan: Public Facilities

This borough-wide plan was adopted in 1984. It includes standards and recommendations for fire protection; emergency medical services; emergency preparedness; libraries; historical preservation; governmental administration; education; parks, recreation and open space; solid waste management; water and sewerage systems.

The Palmer Hay Flats State Game Refuge Management Plan

Palmer Hay Flats State Game Refuge was established in 1975 and expanded in 1985. The goals identified in the management plan are:

1. Manage the refuge to protect, preserve, and enhance the natural habitat and fish and wildlife populations.
2. Maintain and encourage a variety of recreational, educational, and scientific uses of the refuge's fish and wildlife resources.

State regulations restrict use of off-road vehicles, motorboats and aircraft to certain times and locations.

MSB Hay Flats Recreation Area Special Land Use District

The Knik-Fairview planning area includes the majority of the MSB Hay Flats Recreation Area Special Land Use District. The Hay Flats Recreation Area Special Land Use District was created by Matanuska-Susitna Borough Ordinance No. 67-09 in 1967. The purpose of the district is to regulate land use for recreational uses. This special land use district closely, but not completely, corresponds to the State Game Refuge.

Matanuska Susitna Borough Code Chapter 17.08.130 outlines the permitted uses in this district. These include campgrounds, play and sports fields, trails, public buildings, facilities, and uses in keeping with public recreation, single-family dwellings (except trailers, portable homes such as mobile homes or used quonset huts only as temporary living quarters), raising of vegetables and fruits, home occupations as an accessory use, and customary accessory uses incidental to public recreation.

Wasilla Comprehensive Plan and Land Use Regulations

The property in the City of Wasilla adjacent to the planning area is zoned intermediate with only two exceptions. North Country Estates Subdivision is zoned residential and the City's sewer lagoon and surrounding area is zoned industrial. The intermediate zoning designation allows residential development and conditionally permits subdivisions, mobile homes, garden style public and institutional uses, commercial uses and light industrial uses.

More detailed descriptions of these and other plans are contained in the appendix.

PART I

INVENTORY AND ANALYSIS

CHAPTER 1 HISTORY/HISTORICAL SITES

Two stone lamps found in the early 20th century have lead researchers to conclude that the lamps were used by Eskimos. Archaeological excavations carried out by Frederica de Laguna further proved that Eskimos inhabited the Knik Arm coastal areas prior to the Athapascan invasion.

The Athapascan, Tanaina started to move into the Susitna Basin approximately 1500 years ago.

Information gained from archaeological excavations suggest that by the 1500's the Athapascans supplanted the Eskimo. It appears that many Eskimo traditions were borrowed by coastal Athapascans. Captain James Cook thought the people he saw in 1778 were Chugach Eskimos, similar to those of Prince William Sound area, but de Laguna believes they were probably Athapascans who had adopted Eskimo-like traits in their adaptation to the coastal environment.

Leading a semi-sedentary lifestyle, in summer the Dena'ina (Tanaina) established fish camps along important fish bearing tributaries of the Susitna River. Large camps were also established at the outlet of the rivers into Upper Knik Arm and Cook Inlet. The camps were established predominantly to take advantage of the annual migrations of anadromous fish.

The first written records of native people in the Upper Inlet, Turnagain and Knik Arm region are by early Russian and English explorers. Captain James Cook and his crew thought they might have been the first white men to explore the mouth of "Cook's River" in 1778 however, the Dena'ina people appeared to be well acquainted with weaponry of the crew, indicating previous, first hand contact with Russians.

As early as 1786 there were Russian posts on the Kenai. It was not until after the small pox epidemic which decimated the native population by fifty percent that the Russian Orthodox Church made inroads into the once fiercely protected Upper Cook Inlet. The disease left the Upper Cook Inlet natives more vulnerable to outside influences, thereby enabling Russians to enter the Upper Susitna Valley.

At the time Russian America came under the American flag in 1867 the Upper Cook Inlet Dena'ina were conducting a brisk trade in inland furs with trading posts managed by the Russian American Company (RAC). Based on scanty records and references by early travelers it appears there was a commercial post established by the Russians near the mouth of Knik River.

The Alaska Commercial Company (ACC) eventually took over assets of the RAC. George Palmer, a Euro-American trader and Commercial Company employee, is credited for founding a small trading post on the Matanuska River and later at Knik village site. The latter was established in the late 1880's to supply the gold rush.

By 1887 a Russian Orthodox church was established in Knik. This occurred twenty years after the sale of Alaska to the United States. The Knik Village site was composed of a mixture of natives, gold miners, traders and freighters. Several families were of mixed marriages.

Census taken in 1890 recorded the Knik population as 160 people comprised of 84 males and 76 females. Within that population 96 natives were recorded and 64 foreigners. The composition of most mining towns consisted of mostly single men, therefore, it is surprising to note that the census recorded thirty-six families dwelling in thirty one houses at Knik.

In 1909 the Knik Roadhouse, also referred to as the Knik Hotel, opened in Knik and was run by Frank Cannon. After the opening up of the Iditarod-Innokko region, the population and commerce at Knik expanded considerably.

Mr. George Hershey and Mr. Thomas Fulton in 1910 started construction of the Knik Pool Hall and Billiard Room. The Pool Hall, formerly located in the center of the village, currently houses the Knik Museum.

The U.S. Government, in 1908 financed a trail, leading from Seward to the gold town of Nome. Major Wilds Richardson working for the Alaska Road Commission in 1907, ordered Walter Goodwin and a crew to blaze a route from Seward, through Cook Inlet area and beyond to Nome. Covering over 1100 miles Goodwin and his crew, from January 1908 to April of that same year, blazed what later came to be known as the Iditarod trail. The main purpose of the trail was to ship mail from the year round port of Seward. Parts of the trail covered known routes through the peninsula to Knik and beyond.

Almost immediately, gold towns and claims appeared at stops along the trail, the most famous were those in the Iditarod-Innokko region. Iditarod and Ruby attracted 10,000 stampedeers between 1910 and 1912 with each community reaching populations of 3,000. The trail gave Knik and Susitna Station a brisk business.

During the months that Knik anchorage and port was open, machinery, freight and cargo of every description was off loaded at the anchorage (later known as the townsite of Anchorage) and lightered to the Knik dock. From there, trails radiated out to various mining concerns in the Matanuska and Susitna Valleys, servicing Hatcher Pass, Iditarod-Innokko, Willow, Iron River, Dutch Hills and Petersville area, with some reaching as far as the Copper River country and Broad Pass. Since the area supported numerous lakes, rivers and marshlands, winter months were best suited for transportation. What could not be transported by pack horses and mules, during the summer months, was transported by dogsled or horses and double-enders in the winter.

Herning, a local supplier, noted in his diary that during one week in November 1911 one hundred and twenty mushers passed through Knik "four dog teams arrived in Knik after 33 days on the trail from Iditarod with 2,600 pounds of gold." Just prior to Knik's abandonment, an Iditarod gold team came into Knik on December 1, 1916, with 3400 pounds of gold hauled by 46 dogs.

Knik, therefore, served as an important port for the gold rush. Although farming had not taken precedence, by 1900 some farming experimentation had been undertaken by disillusioned miners, roadhouse operators and George Palmer who reported success in growing vegetables, especially root crops. Large fields were cleared for oats and wild hay to feed an increasing number of horses and mules. For a brief period in 1914 it became the destination for early agricultural homesteaders responding to Government incentives. Several freighters had homesteads located in what is now known as the "Hay Flats." Many of these early settlers never filed on their homesteads until 1915 when an influx of agricultural homesteaders arrived with cattle and farming equipment.

It was not until 1913, following completion of a rectangular survey carried out in the valley, that homesteading became more possible. Prior to that time there was no base survey from which to plat homesteads and the cost of surveys at \$15 - \$20 a day was too high to make it feasible. On January 8, 1915 the first homestead entry was filed at Knik. By March of that same year 132 entries had been recorded. Many of the entries were along the proposed railroad line in areas burned over for construction. The Fairview region south of the new townsites of Wasilla was a popular area.

On March 12, 1914 President Wilson authorized the construction of a railroad from Seward to Fairbanks with a spur to the Matanuska coal fields. The construction center for the new railroad became the townsite of Anchorage. Almost overnight Anchorage became a tent city in anticipation for employment on the railroad. Anchorage, and new townsites along the railroad, attracted the population and businesses away from Knik.

When the railroad bypassed the town in 1917, most of the commerce abandoned the townsite in favor of railroad towns. The Pool Hall suffered the same fate. Later, during the 1940's, the Pool Hall was resurrected as a roadhouse for wayfarers traversing the Knik Arm. It was not until the 1960's that the building was first renovated to house a museum. Today it is the only building still standing as testament to the once thriving little commercial village.

By August 1919, the mail route over the trail to Iditarod was abandoned and in November 1919, the post office was officially closed. Wasilla became the new gateway for dogsled traffic plying the Iditarod trail and for traffic to the Willow gold mines.

Homesteaders in the Fairview area had to rely on the townsite of Matanuska for redistribution of their agricultural products. The Experimental Station was erected in 1917 to help serve farmer's needs. Without good roads conveniences were far away. Schools located in Wasilla and Matanuska proved too hard to reach for families in the Fairview loop. Fred Edlund who lived 3 miles southeast of Wasilla and 5 miles from Matanuska, petitioned the Territory Superintendent of schools in Juneau for a school to be built nearer their homesteads.

Work on the school began in the Fall of 1919. Bill Black, a freighter by trade, hauled the flooring and ceiling material from Knik. Fred Edlund, handy with an axe, built the exterior with hand hewn, four sided, logs. It not only served as a school but also provided local homesteaders with a community hall and meeting place. Orah Dee Clark, the teacher for the one-roomed school house lived in an adjacent room. She later became a well-recognized instructor in the Anchorage school district.

The school operated from 1919 until 1933 after which time it continued to serve as a community hall. It even became a honeymoon suite for newlyweds. This charming log house was rehabilitated in 1984 by the Knik-Wasilla-Willow Creek Historical Society to be used for public purposes. Today the building stands vacant and ready for use.

By 1935 the Fairview area was mostly settled by homesteaders. The Colony project initiated by Franklin D. Roosevelt under the "New Deal" involved relocation of poverty stricken Great Lakes farmers to the Matanuska Valley. The project purchased homesteader's lands to create 40 acre tracts for the colonists. Although many homesteaders willingly sold portions of their property to the project, few Fairview Loop area lands became colony tracts. Most of the area by 1955 was still being homesteaded.

The Matanuska-Susitna Borough incorporated in 1964. Immediately to the north of the planning area, the city of Wasilla incorporated in 1974.

It was not until the tremendous influx of people in the 1970's that the area underwent a surge in development. This was at a time when the entire population of the valley increased from 7,000 in 1975 to 46,000 by 1986. The increase in population is attributed to successful oil exploration on the North Slope arctic coast. Farming was no longer the emphasis in the valley as new subdivisions replaced farmlands.

CHAPTER 2 NATURAL FEATURES

Climate

The Knik-Fairview planning area's climate is directly influenced by the ocean and the surrounding mountain ranges: Chugach, Alaska, and Talkeetna. Cook Inlet and the Knik Arm, both links to the North Pacific Ocean, moderate the temperature.

The mean annual temperature for the area is 35.2 degrees Fahrenheit and ranges from a low of -41 degrees Fahrenheit to a high of 91 degrees Fahrenheit. Average annual precipitation is 15.5 inches at the Matanuska Experiment Station located east of the area, and 28 inches at Susitna Station located west of the area. August is the wettest month, averaging 2.9 inches of rain while April is the driest month with 0.39 inches of rain average recorded at the Matanuska Experiment Station. At Susitna Station the wettest month is August with 5.5 inches average of rain and April is the driest at 0.88 inches. It appears the further west from the Chugach Mountains, the greater the amount of precipitation. Maximum snow accumulation occurs in January, averaging 9 inches (Matanuska) and 14 inches (Susitna). Spring thaw usually begins in April.

Air moving from the Chugach Mountains to the west creates the Matanuska and Knik winds. These winds strip the fields of snow in the winter. The further west in the planning area the fewer winter wind storms than in the area around the Matanuska and Knik rivers. Historically, the southern planning area has been often referred to as "Sunny Knik" because the area generally has fewer cloudy days than the surrounding area.

Hydrology

Surface Water

Knik Arm is an underwater extension of adjacent lowlands. Heavy sediment loads from river run-off are creating additional land surface leading to the encroachment of the deltas into the tidal flats. Knik Arm is an estuary that has a free connection to the North Pacific Ocean via Cook Inlet. It empties twice daily during low tide and only the Bay of Fundy in Labrador has a larger tidal range.

During summer months coastal waters are diluted by river run-off principally from the Susitna, Knik, and Matanuska rivers. These glacial rivers provide approximately 70 percent of the fresh water entering Upper Cook Inlet. This creates a net export of water to Cook Inlet with associated high sediment loads.

Salinity in near offshore oceanic waters ranges from 34 and 36 parts per thousand. This is higher than the summer salinity of Cook Inlet which is 10 to 15 parts per thousand. Winter salinity is higher, usually greater than 20 parts per thousand. Large changes in salinity with high sediment loads which are due to river runoff, reduce the offshore biological productivity. Diatoms are the primary phytoplankton.

The majority of the planning area drains into Crocker Creek and O'Brien Creek. See Figure 2. The western planning area drains into the Fish Creek watershed. Other drainages consist of Goose Creek, Cottonwood Creek, Lucille Creek and Wasilla Creek.

The largest lake in Knik/Fairview is Threemile Lake (approximately 70 acres). There are about eight lakes between thirty and forty acres and numerous very small lakes and ponds.

Little data is available about water quality within the planning area. Most information is generalized, encompassing a significantly larger study area than Knik/Fairview itself. However what little data is available does not indicate that there are significant problems with water quality.

"Generally, surface water is of good quality and, except for isolated instances, contains less than 0.3 mg/l (milligrams per liter) of iron (the suggested maximum of the U.S. Public Health Service, 1962). All surface waters have a hardness of less than 150 mg/l and are of the calcium magnesium bicarbonate type." (USGS study, "Water Resources Reconnaissance of a Part of the Matanuska-Susitna Borough, Alaska." Alvin Feulner, 1971).

Ground Water

Little information on groundwater specific to the Knik-Fairview area is available. The most informative study of the areas ground water generalizes the hydrology of a much larger area. "Most successful wells have been completed at a depth of 50 to 150 feet below ground surface. Yields of wells in this area of the borough generally range from 10 to 50 gallons per minute." (USGS study, "Water Resources Reconnaissance of a Part of the Matanuska-Susitna Borough, Alaska." Alvin Feulner, 1971)

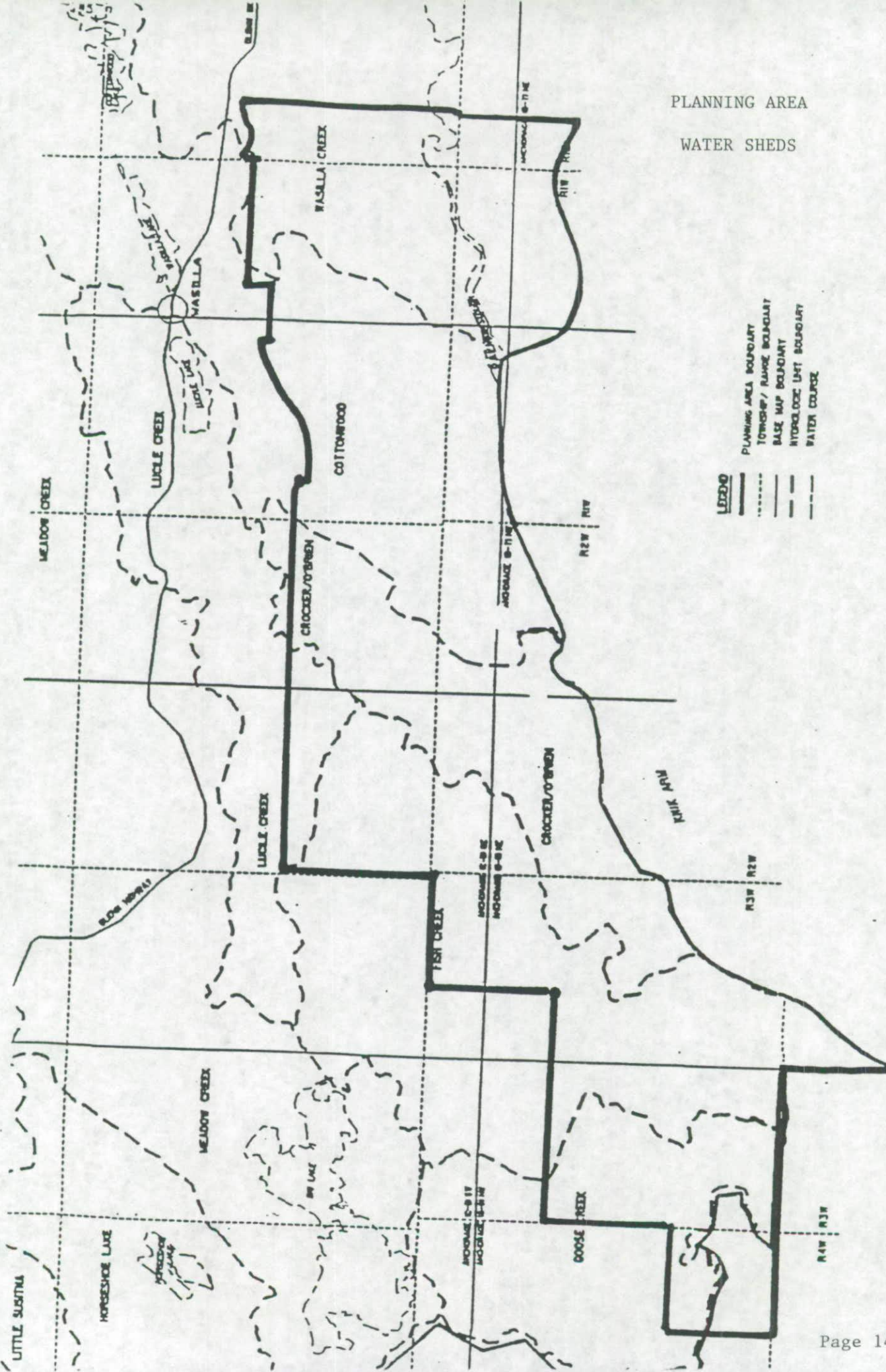
The generalized hydrologic data of an area much larger than the planning area is likely misleading, since the water table in some of the planning area is right at or below the surface elevation.

Areas with a water table close to the surface may prove troublesome for a developer wishing to install a septic system. The state Department of Environmental Conservation (DEC) requires septic systems absorption systems to be buried four feet with a foot of gravel beneath and an additional four feet of depth between the gravel and the water table. Hence a minimum water table depth of 9 feet is necessary to insure compliance with state regulations 18 AAC 72, otherwise a more expensive mound system is a possible alternative. Variances can be granted of up to two feet for insufficiently deep water tables if certain design criteria are followed.

Furthermore in the areas adjacent to Crocker and O'Brien Creeks the water table slopes relatively steeply near the creeks indicating a high potential for groundwater inflow into the creeks. Cottonwood Creek, as well, is a sink to the local water table.

"Ground water in the study area has a greater chemical-quality variation than the surface water. It generally is harder than the surface water, except in areas adjacent to streams where the water quality of both is similar. Much of the groundwater obtained from shallow wells drilled in the

PLANNING AREA
WATER SHEDS



- Legend**
- Planning Area Boundary
 - - - Township/County Boundary
 - · · Base Map Boundary
 - - - Hydrologic Unit Boundary
 - Water Course

alluvium contains objectionable concentrations of iron, most of which could be easily removed by aeration and filtration of the water prior to storage or use. Ground water ranges from about 50 to more than 200mg/l in hardness and is of the calcium carbonate type." (USGS study, "Water Resources Reconnaissance of a Part of the Matanuska-Susitna Borough, Alaska." Alvin Feulner, 1971)

Geology, Soils and Topography

The saltwater shoreline is characterized by extensive tidal flats interspersed with low-level bluffs. These are highly erosive bluffs due partly to the composition of the soil and the erosive action of the Knik Arm tidal flow. The bluffs consist of vegetated upper slopes with muddy intertidal zones, generally between 25 and 100 feet high. The area between Palmer Hay Flats and Goose Bay falls into this classification. Waterfowl tend to extend their use of the Palmer Hay Flats west along the shoreline on the northern side of the Knik Arm.

Four creeks enter the Knik Arm along this shore: Cottonwood, Crocker, O'Brien, and Fish creeks. These creeks are important fish habitat. Important moose habitat occurs inland from the bluffs. Upland areas tend to be poorly drained creating lakes, peat muskegs and wetlands. Local relief typically ranges between 50 to 350 feet. The area is generally hummocky with low rolling hills interspersed with an occasional small lake or swampy wetland area.

The Palmer Hay Flats State Game Refuge consists of grassy tidal marshes. Wasilla Creek, Spring Creek, Palmer Slough and Rabbit Slough exit into the Knik Arm here. Palmer Hay Flats soils are composed entirely of tidal marsh and clunite types. Tidal marsh soils are a result of silt deposition by the Matanuska and Knik Rivers and clunite types result from build-up of woody vegetation. Drainage is typically very poor with the water table at or near the surface.

The southern portion of the planning area south and west of Fish Creek contains extensive wetlands, as well as areas around Lucy Lake and Crocker Creek. The southeastern portion of the planning area encompassing the Palmer Hay Flats is almost entirely wetlands adjacent to the Palmer Slough. Approximately one quarter of the planning area is wetland.

The Cook Inlet Basin is a portion of the Intermountain Trough, a very thick sedimentary basin (30,000+ feet) composed of bedrock with extensive oil, gas, and coal reserves. Glacial drift and alluvial deposits cover the bedrock. Glacial activity has deposited several types of soils in the area: gravel (loose and coarse), sand, silt, sandy sediments, and clayey sediments. There is a layer of loess and/or silt that measures from a few inches in thickness to a couple of feet. Predominate soil types in the planning area are: Kichatna silt loam, Kashwitna silt loam, Knik silt loam, Kalambach silt loam, Deception silt loam, Typic cryaquents, Histosols, and Cryochrepts.

Soil types and soil interpretations are used as tools in evaluating suitability and limitations for various purposes. Soil interpretations have been made for building site suitability, sanitary facilities, agriculture and grazing land, road and street construction, etc. The Soil Conservation Service provides mapped soil types and soil interpretations, but advises that on-site inspection is required for site specific verification.

Soil Limitations for Installation of Septic Tank Absorption Fields

According to Soil Conservation Service information, almost the entire planning area has soil conditions unfavorable to the use of septic tank soil absorption systems. Areas of glacial outwash deposits (Kashwitna, Kichatna and Knik silt loam soil types) typically have very poor filtration increasing the possibility of groundwater contamination requiring creation of a sand filter pad. Areas of glacial till deposits (Deception and Kalambach silt loam soil types) typically percolate very slowly requiring an oversize septic system. Other areas within Knik-Fairview have water tables at or near the surface. Some areas have one or two of these conditions combined with an excessive slope or an impermeable layer. Septic systems designed for these types of soil conditions can increase the cost of a septic system by as much as ten thousand dollars or more.

Development Limitations of Soils

Soil limitations for building sites are severe in areas where the water table is at or near the surface. Most other areas have only moderate limitations for building sites, the exception to this being localized areas of excessively steep slopes or bluffs. Soil limitations for building development include slope, frost action, and cutbank instability of Kichatna and Kashwitna soils. Soil limitations for homesites can generally be overcome by engineering modifications including gradual grades for cut slopes, reduced surface disturbance and revegetation of disturbed areas, and installation of footings below frostline.

Agricultural Capability of Soils

Knik silty loam soils are some of the best soils for agricultural use within the state and have historically supported a diversity of climatically adapted vegetable, grain, and hay crops. The Knik soils are generally located in the northeastern portion of the planning area, extending southward from Wasilla through the Fairview Loop area to the Palmer Hay Flats. Limitations for hay and cropland include depth to gravelly material, slope, wind and water erosion hazard.

Vegetation

The vegetated bluffs have mixed forest and nonforested areas. The forested areas consist of young forest backed by older aged mixed forest vegetation. Typical dry upland areas are agriculture areas, willow thickets, cottonwood stands, and the mixed forest types -- birch/spruce and cottonwood/willow/alder.

The Susitna River Basin Study which encompasses the planning area identifies the timberland forest composition to be 69% birch, 16% white spruce, 13% cottonwood, 1% black spruce and 1% aspen for the study area as a whole.

The most abundant forest type within the planning area is the paper birch/white spruce type. These forests occur on well drained uplands. Cottonwood trees are common along the streams and the high bluffs. Low growing black spruce and scrub willow dominate the muskeg areas. The tidal plains

are covered by sedges, grasses and forbes. The flats which are frequently inundated by tides usually support no plant cover.

There are two sawmills outside of the planning area near Goose Bay and Point MacKenzie. Most of the white spruce accessible to ground transportation has been harvested and these areas are primarily birch forest and young white spruce. Where harvesting has occurred little marketable white spruce is available to support significant harvesting/lumber production, however there has been an effort to commercially harvest birch for paneling and specialty uses. Currently there are two timber sales occurring within the planning area one about a mile east of Threemile Lake and the other west of Goose Creek.

The majority of the forest is overmature and as a result the spruce bark beetle has infested most of the spruce within the area. However given that spruce make up a small minority of the trees in the area the effect of this will be dramatically less than along the largely spruce forests of the Kenai Peninsula.

Fish and Wildlife

Salmon and smelt are the anadromous fishes that use the offshore coastal habitat. Salmon are present from May to September. Smelt are present in May and June. The anadromous fish streams in the planning area are: Goose Creek, Fish Creek, Threemile Creek, O'Brien Creek, Cottonwood Creek, Wasilla Creek, and Lucille Creek. Fish Creek is a very popular dipnetting location in the summer.

Since the major rivers are of glacial origin, fish normally prefer the lakes and clearwater streams tributary to the rivers. Resident fish are rainbow trout, lake trout, Arctic grayling, Dolly Varden/Arctic char, northern pike, burbot, and whitefish. Dawn Lake and Knik Lake are the only two lakes within the planning area that are stocked with gamefish. Dawn Lake is stocked with rainbow trout and Knik Lake is stocked with grayling, silver salmon and rainbow trout.

Harbor seals and beluga whales tend to congregate at the mouth of the anadromous streams for feeding. Their presence is primarily in spring, summer, and fall, as winter weather conditions are too extreme.

The tideflats and wetlands are critical waterfowl and shorebird habitat. Most waterfowl nesting occurs in the interface of the marsh and shrub habitat. Key areas include the Jim-Swan Lakes area, the Palmer Hay Flats, the Goose Bay Refuge, and the Susitna River flats. The Palmer Hay Flats State Game Refuge Management Plan identifies 166 species of birds which may inhabit or migrate through the Hay Flats.

Ducks are predominately dabblers (pintails, mallard and green winged teal). Scaups are primarily diving ducks. Trumpeter swans also use the wetlands, Palmer Hay Flats, and Jim-Swan Lakes area. Canada geese, white-fronted, and snow geese utilize all the coastal tideflats, wetlands and nearby agricultural lands. Sandhill cranes and loons have also been reported in the area.

The Alaska Department of Fish and Game have reported a number of the lakes in the area as being the site of nesting loons or grebes. These include Dawn Lake, Dinkel and Weinie Lakes, Reedy Lake, Threemile Lake. Additionally, adjacent property owners have noticed grebes on Knik Lake. Likely many of the other smaller lakes in the areas are also habitat for these species.

Raptors which utilize the coastal areas include eagles, falcons, goshawks, great horned owls, and hawk owls. Marsh hawks and red-tailed hawks migrate through the area. Shorebirds including glaucous-winged gulls are also found in the area.

Moose and black bear are the most common large animals in the coastal wetlands of the planning area, while muskrats are the most abundant fur bearers. Other mammals that are prevalent in the area are listed in the table on the following page. Moose populations appear to be increasing from the early part of the century. Early on in the century the area had predominately large white spruce forests, which have since been cut and replaced by the young boreal forest type of birch, willow and aspen -- favorite browsing habitat for moose.

The Alaska Department of Fish and Game has identified the following mammals as ones which may occur in the Palmer Hay Flats State Game Refuge.

Masked shrew	Beaver
Dusky shrew	Muskrat
Northern water shrew	
Pygmy shrew	Porcupine
Northern bog lemming	Coyote
Brown lemming	Wolf
Red-backed vole	Red fox
Meadow vole	Black bear
Tundra vole	Brown bear
Singing vole	Pine marten
Meadow jumping mouse	Ermine
	Least weasel
Little brown bat	Mink
Snowshoe hare	Wolverine
Arctic ground squirrel	River otter
Red squirrel	Lynx
Northern flying squirrel	
	Moose

Natural Hazards

Earthquakes

Approximately seven percent of the annual worldwide release of seismic energy occurs in Southcentral Alaska, where the Pacific Plate is sliding beneath the North American Plate. The Knik-Fairview area is located within one of the most seismically active areas on earth. The earthquake and its associated effects are potentially the most powerful and destructive of all the natural disasters known to man.

The nearest active fault is the Castle Mountain Fault running east to west and located approximately 8 miles north of the northern planning boundary. The largest magnitude earthquake occurring along this fault occurred in 1943 having a magnitude of 7.3. Only six earthquakes within the planning area have been recorded with a magnitude of 6 or greater. A magnitude 8.0 earthquake is believed possible based on known and inferred evidence of past fault rupture and displacement.

The Uniform Building Code identifies areas by seismic Zones between 0 and 4, zone 4 being an area where structural damage caused by earthquakes is greatest. The Knik-Fairview planning area is located in zone 4. Structural damage due to earthquakes is caused primarily by ground rupture, ground failure and ground shaking. Ground rupture damage is usually restricted to the area on or near the fault tract. Ground failure in the form of liquefaction may occur in areas of thick unconsolidated deposits where the water table is at or near the ground surface. Ground shaking effects can be amplified in areas of fine silt and clay deposits as well as in peat bog areas.

Flood Hazard

Very little of the Knik/Fairview area is within a designated flood hazard zone, although this does not mean that flooding is not likely. The areas immediately adjacent to Wasilla Creek, Lucille Creek and Cottonwood Creek are prone to flooding. Only the northern half of the planning area is within the study area defining the flood hazard areas on the Flood Insurance Rate Maps (FIRM). Regions outside of the study area may be within an undesignated floodway, however they are not required to obtain flood insurance. Residential and commercial buildings within a designated flood hazard area are required to obtain flood insurance and follow certain design criteria. Structures outside of the study area but possibly within an undesignated floodway have the unique advantage of being able to receive the reduced flood insurance rates offered to structures outside of a designated flood hazard area.

Volcanoes

The nearest active volcano to the Knik-Fairview planning area is Mount Spur, located approximately 20 miles south of the Matanuska-Susitna Borough and 75 miles southwest of the planning area. It is the northernmost volcano in a chain of active volcanic centers extending along the Alaska Peninsula.

Most Pacific Rim volcanoes are called andesitic volcanoes because they produce molten material that is relatively high in silica and quite viscous. The high viscosity tends to make these volcanoes more explosive. The location of the Knik-Fairview planning area in reference to active volcanoes makes it vulnerable to some of the hazards of volcanic eruptions. Most eruptions of Alaskan volcanoes have been relatively moderate with respect to their explosivity and intensity. The Knik-Fairview area has been showered by volcanic ash in the very recent past (1994) which can cause damage to aircraft, automobiles, and other mechanical and electronic equipment.

Forest Fire

The forests within the Knik/Fairview planning area were created by various natural disturbances. Disturbance in the form of fire has played a major role in producing the mosaic of forest types within the planning area. The mixed hardwood forest is subject to forest fires during periods of dry weather and low humidity.

Following a very dry winter and spring in 1995-1996, the conditions were favorable for a forest fire. The Millers Reach Fire of June 1996, burned an area from Houston south to Three Mile Lake near Knik. Although the total number of structures destroyed or damaged in the Millers Reach Fire was 433 only 6 structures were located within the planning area. The majority of the area burned was northwest of the Knik/Fairview Planning area.

CHAPTER 3 HUMAN RESOURCES

Modern Population Characteristics

1990 U.S. Census

The 1990 U.S. Census is the most recent census information available from which to draw a socio-economic profile of the Knik-Fairview planning area. The U.S. Census collected data in 1989 for the 1990 census by geographic areas of differing sizes. For the Knik-Fairview planning area the units are represented by "blocks" and "block groups". There are ten block groups that cover the planning area, of which five block groups are inclusive of the area and five block groups are partially in the area. Please refer to figure 3.

Five inclusive block groups

9757004
9757002
9757003
9756003
9755007

Five partial block groups

9757001
9756001
9756002
9755006
9755008

By extracting population counts and housing units from the five partial block groups borough staff estimate a 1990 population for the planning area of 4,539 people and 1,896 housing units.

Inclusive Census Blocks

The population in the immediate planning area (inclusive blocks) in 1990 was 3,373 people of which 52% were males and 48% were females. Four of the five blocks reflected this nearly even division, except for the block around Knik/Skyline which had a higher male to female ratio of 56%/44%. The average for the area was 53% males to 47% females.

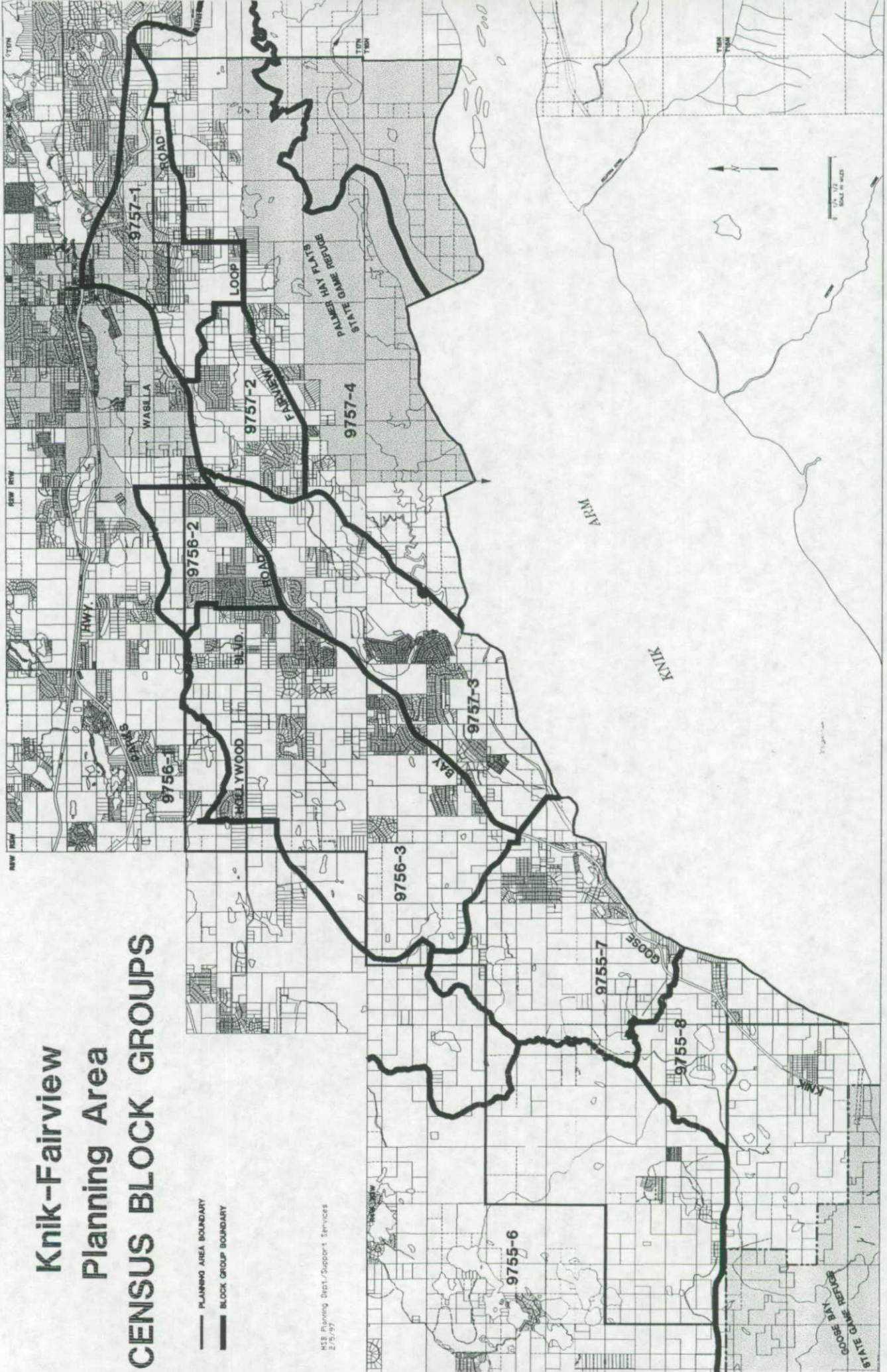
The age breakdown for the population showed all blocks having the majority of people in the 25-44 year age bracket (approximately 40%). The Knik/Skyline area had a higher proportion of elderly, 60+ years, with approximately 14% of the population in this age group and a lower percentage of young children under 18 years, below 31%. The average elderly (60+ years) percentage for the planning area was 6%. The averages of the other age brackets for the planning area are as follows:

11%	under 5 years
26%	5-17 years
5%	18-24 years
40%	25-44 years
12%	45-59 years
2%	60-64 years
4%	65+ years

Knik-Fairview Planning Area CENSUS BLOCK GROUPS

— PLANNING AREA BOUNDARY
 — BLOCK GROUP BOUNDARY

MSB Planning Dept./Support Services
 2/5/97



The median age of the population for the area was 30.2 years. The Knik/Skyline area had a slightly older median age of 33 years.

Racial composition of the area is predominately white with four of the five blocks averaging over 90% white. Only the Knik/Skyline area had under 90% (88%) white population; eleven percent of its population was American Indian, Eskimo, or Aleut. Blacks registered less than one percent of the population in all areas. Hispanics represented 3% of the population in the areas around Fairview Loop Road, Riverdell, and Settlers Bay/O'Brien Creek. Asians represented 5% of the population in the area around Settler Bay/O'Brien Creek. The average ethnic breakdown for the area was:

92%	White
<1%	Black
4%	American Indian, Eskimo, Aleut
2%	Hispanic
2%	Asian and other

The 1990 census counted 1,095 households in the immediate planning area, for an average persons per household (p.p.h.) of 3.0 people. The Knik/Skyline area reflected a slightly lower persons per household average of 2.6 people per household, probably reflecting the larger proportion of older population in this area. Households are defined as either family units or non-family units as follows:

Family households are defined as a householder and other persons related by birth, marriage, or adoption. Non-family households are either single persons living alone or unrelated individuals living together.

Over 80% of the households in the planning area were family households, except for the area around Southland Subdivision which had under 75% family households (74%/26%) and the Knik/Skyline area which had 64% family households and 36% non-family households. Forty four percent of those sampled in the planning area indicated they have lived in the same house in 1985 and 33% reported they were born in the state.

Partial Census Blocks

The non-inclusive census blocks had a total population of 2,770 of which an estimated 1,166 live within the Knik-Fairview planning area. For purposes of this discussion the characteristics of the total blocks are used.

There was a similar male/female division (52%/48%) in the sexual ratio of the population in the non-inclusive blocks as in the inclusive blocks.

There was also a similar division in the age groupings of the population between the non-inclusive blocks and the inclusive blocks. Thirty three per cent of the population in the non-inclusive blocks were under the age of 18 years (as opposed to 37% in the inclusive group). The census group #9755006 (located north along Pt. MacKenzie Road extending to south of Big Lake) had the lowest percentage of children under eighteen at 21%. This area and the area around Point MacKenzie also had a higher percentage of elders, those over 65 years, at 10%. This higher percentage of elderly was also found around the Knik/Skyline area.

The census group #9755006 had a high percentage of American Indian, Eskimo, and Aleut at 8%, second behind the Knik/Skyline area (11%). This area also had a low percentage of children under five (5%) and a lower persons per household average of 2.34.

Only eleven percent of the people in the south Big Lake area (#9755006) were born in the state, and only 25% of the people in the Point MacKenzie area were born in the state, somewhat lower than the average percentage of the inclusive planning area (33%).

Population Projections

Predictions of population change are by nature very speculative and based on a number of assumptions. Most population projections are based on past patterns which are assumed to be present in the future. However, Alaska's economy, more so than other states, is based on circumstances and events that are not easily predicted. These projections are meant as a tool to help us get an idea of what is likely to occur in the future if the assumptions the projections are based on, remain true.

Development of population projections for the Knik-Fairview planning area is somewhat hampered by differing census area boundaries of the two most recent federal censuses. The different boundaries introduce a geographic variation in the population greater than the growth rate.

In the absence of a projection based on local data, it was necessary to use a larger regional borough-wide projection. This ratio/correlation method assumes that the Knik-Fairview population is a constant proportion of the Matanuska-Susitna Borough population.

The Alaska Department of Labor (ADOL) and the University of Alaska, Institute of Social and Economic Research (ISER) publish area-wide population projections. Historically ADOL's population projections have been a more accurate predictor of growth in the Matanuska-Susitna Borough than projections provided by ISER. ADOL projections are based on the current demographic estimates of the population and expected fertility, mortality, and migration rates. ISER projections are based on economic forecasts which are much more difficult to reliably predict although they greatly affect migration rates. Since ISER's projections extend to 2015, whereas ADOL's projections extend only to the 2000, ISER's high-range projections were selected as the basis for Knik-Fairview's population projections. The high-range was selected since it more closely matches the current patterns indicated in the recent borough censuses.

The Institute of Social and Economic Research projections are borough-wide projections not broken down into smaller community council or planning areas. Assuming the growth rates are constant throughout the borough, the projected population for the Planning area would remain a constant 11.4% of the borough population. Refer to the following page.

POPULATION FORECASTS FOR KNIK-FAIRVIEW AREA BASED ON A UNIFORM BOROUGH-WIDE RATE OF GROWTH USING ISER'S HIGH-RANGE FORECASTS

YEAR	KNIK-FAIRVIEW POPULATION (11.4% OF ISER HIGH-RANGE)	MAT-SU BOROUGH POPULATION (ISER HIGH-RANGE PROJECTIONS)	MAT-SU BOROUGH POPULATION (ADOL MID-RANGE PROJECTIONS)	MAT-SU BOROUGH ACTUAL POPULATION (BASED ON MSB SAMPLE SURVEYS)
1990	4,539	39,868	39,683	39,683
1991	4,783	41,953	42,536	41,797
1992	5,015	43,993	45,391	44,877
1993	5,183	45,467	48,245	48,731
1994	5,373	47,133	51,100	50,058
1995	5,552	48,707	53,953	
1996	5,839	51,219	57,109	
1997	5,983	52,487	60,266	
1998	6,258	54,899	63,420	
1999	6,485	56,889	66,577	
2000	6,667	58,487	69,733	
2001	6,905	60,575		
2002	7,159	62,800		
2003	7,360	64,567		
2004	7,636	66,981		
2005	7,930	69,566		
2006	8,297	72,287		
2007	8,566	75,147		
2008	8,909	78,152		
2009	9,269	81,310		
2010	9,647	84,628		
2011	10,045	88,115		
2012	10,463	91,780		
2013	10,902	95,632		
2014	11,363	99,681		
2015	11,849	103,937		

It is unlikely that the borough will grow in such a uniform manner as predicted in the chart on the previous page.

The population projections done for the borough transportation planning process used the ADOL mid-range population projection for the borough and attempted to more accurately calculate the differing rate of growth in "traffic analysis zones." The traffic analysis zone study area, includes the area over which 90% of the projected population would presumably exist, was divided into 127 traffic analyses zones. The study was used to project the population in the planning area out to the year 2000. The most recent census data is from 1990 so this is really a ten year projection.

The map on the following page shows the traffic analysis zones which together best correspond with the Planning area boundary. The relatively sparsely populated Knik area southwest of mile 12 Knik-Goose Bay Road is excluded since the study did not go that far south.

The study made a number of assumptions about locational decision making of future borough residents

- First, the majority of growth within The Matanuska-Susitna Borough will take place in areas served by Enstar Natural Gas. The convenience and cost savings associated with availability of natural gas is a factor in the real estate market today and will be in the future.
- The majority of growth within the Matanuska-Susitna Borough will take place within a one hour commuting distance from Anchorage. The majority of demand for real estate in the borough is currently for homes within a one hour, more or less, commuting distance from Anchorage. The completion of the four-lane Glenn Highway between the Parks Highway and Anchorage has increased this area of interest somewhat since the commuting time has been reduced.
- 27% of the projected population will be dispersed outside the area determined by the first two assumptions. This is based on past Multiple Listing Service records which indicate that 27% of sales have taken place outside this area.
- Future commercial activity will take place in specified areas of the Core Area Comprehensive Plan.
- Existing vacant lots will be developed prior to new subdivision lots being marketed. The expense of subdividing land would require newly subdivided lots to be marketed at a much higher rate.

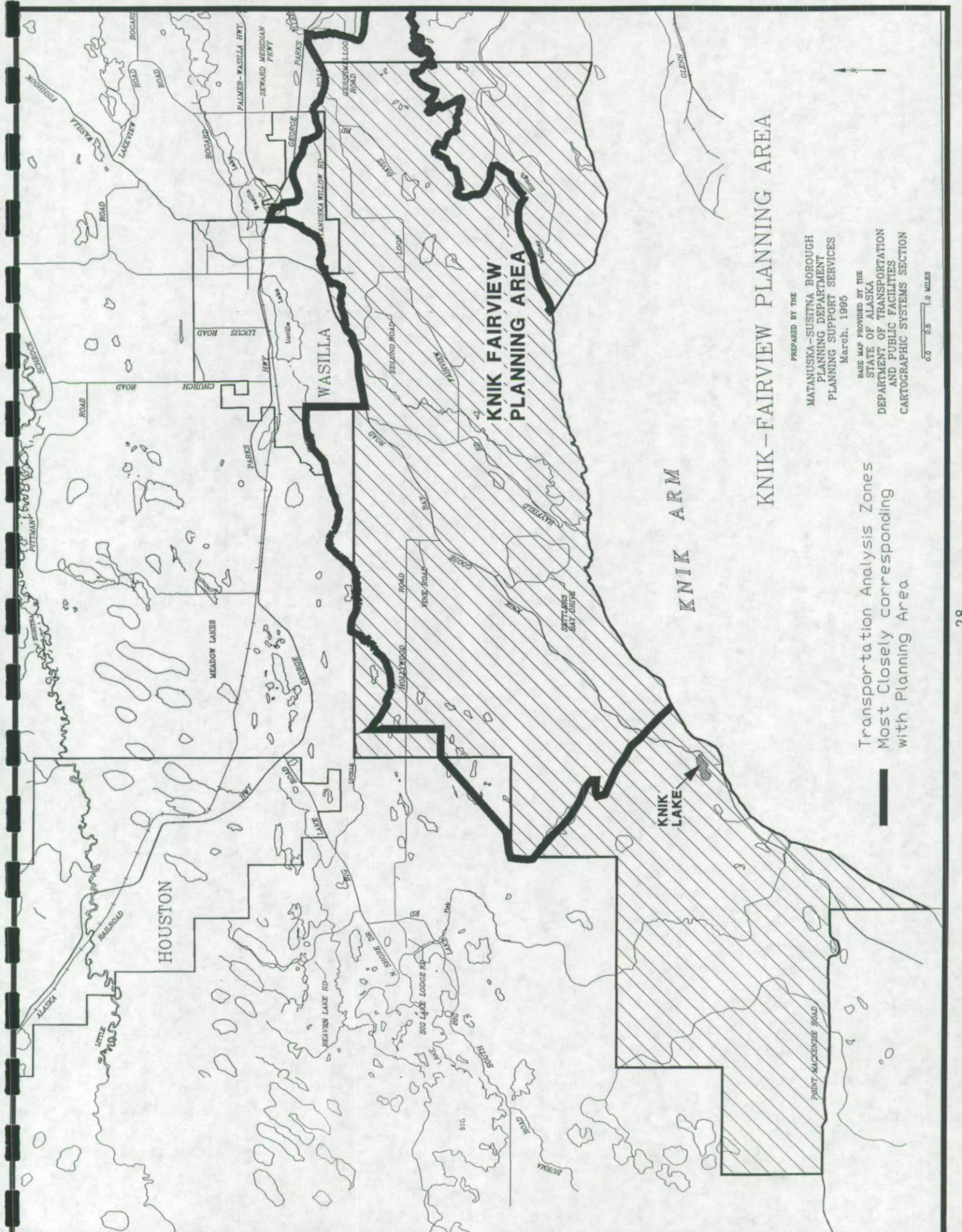
Using these and other assumptions the resulting projections predict the area in which the majority of future population will be dispersed is an area accessing Seward Meridian Road to the west; Bogard Road on the North; Fairview Loop Road on the south; and the Glenn Highway on the East. As this core area begins filling in the surrounding area would grow at a more rapid pace. The method for evaluating whether a traffic analyses zone was filled in was to assume that all undeveloped land would be developed at an average size lot of 40,000 square feet, 3 people per household and 15% of developable land devoted to rights of ways and green space. Using these

assumptions one square mile of developable land could be filled with a maximum of 1,777 people per square mile. However any lot that has a building upon it is considered developed. Hence, there will be lots of 40 acres or more with one house that is considered developed this can substantially reduce the density within a given transportation analysis zone depending upon current land use densities of developed land.

The study estimates the population of the traffic analysis area depicted on the map corresponding with the Knik-Fairview Planning area to be 4251 persons in 1990 and more than double by the year 2000 (9654 persons).

These same assumptions about growth patterns would indicate that the Fairview Loop Area will undergo similar but somewhat slower initial growth rates than the core area. There are extensive natural gas lines within the Fairview Loop Area. There are numerous vacant subdivided lots in this region. The Fairview Loop Area is generally more than an hours drive from Anchorage, but several transportation improvement projects are likely to provide a small reduction in driving times to some of the area.

Changes in the transportation infrastructure which would decrease commuting time to Anchorage theoretically should create small increases in the projected population. The likely extension of the Palmer-Wasilla Highway to Glenwood Avenue will bypass some of the congested areas of Wasilla, therefore, slightly reducing travel time to Knik-Goose Bay Road. The planned extension of Seward Meridian Road south to Fairview Loop Road will have a similar effect on the Eastern Fairview Loop Area. Also the currently unfunded City of Wasilla proposed project of joining Togiak Street and Thomas Street would alleviate travel time between the central Fairview Loop Area and Wasilla. All of these transportation projects will theoretically, increase the projected population of the area.



KNIK-FAIRVIEW PLANNING AREA

PREPARED BY THE
 MATANUSKA-SUSITNA BOROUGH
 PLANNING DEPARTMENT
 PLANNING SUPPORT SERVICES
 March, 1995

BASE MAP PROVIDED BY THE
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 CARTOGRAPHIC SYSTEMS SECTION

Transportation Analysis Zones
 Most Closely corresponding
 with Planning Area



CHAPTER 4 EXISTING DEVELOPMENT

Economy

The Knik-Fairview Planning area has few "traditional" businesses given the size and population of the area. 1990 Federal Census data indicates that about 40% of the 16 year old and older working population within the Knik-Fairview Planning area commutes out of the Borough for work. Approximately 31% of the 16 & over working population commutes to Anchorage. The household incomes are also representative of this pattern. The more northern census blocks which are a closer commuting distance to Anchorage have almost double the average household income than the southernmost two census blocks.

The 1990 census indicates that within the census blocks located entirely within the planning area, nearly two-thirds (62%) reported their income came from private wages, while nearly one quarter (23%) worked for government and 15% were self-employed. Of those who worked for the government over half (53%) worked for the state, 29% worked for the federal government, and 18% worked for local government.

For the planning area, the retail trade industry represented the largest employment group at 21%, followed by public administration at 10%, construction at 9%, the transportation industry and the health industry at 8%, and mining at 7%. The average median income was \$40,167. Eight percent of the households fall below the poverty level.

There were some differences in the non-inclusive blocks to the planning area when employment was compared. The census area around Point MacKenzie had no government workers counted; 50% of its work force was in private industry and 50% was self-employed. The Point MacKenzie block had 100% of its workers employed in agriculture.

The census area around south Big Lake had over one third (34%) of its work force employed in government, no self-employed workers, and 66% employed in private industry. The south Big Lake area had retail trade, transportation, and public administration as its top industries.

The remaining non-inclusive census blocks had retail trade, education, transportation, and finance/real estate as top industries.

Annual household income was lowest in the Point MacKenzie census block 9755-8 at \$15,000.

Because of the Planning area's proximity to Wasilla, the retail center of the Matanuska-Susitna Borough, businesses along the comparatively sparsely traveled roads within the Planning area are at a distinct disadvantage competing with retail stores along the more traveled Parks Highway. The businesses that exist in the planning area are either businesses that serve the local population, such as the 7-Eleven mini-mart and Knik Bar, or are not typical competitive retail establishments where location is of paramount importance, e.g. Knik Towing.

According to borough tax assessment records there are fewer than thirty buildings classified as commercial or industrial. This is somewhat misleading since the classification of the structure is dependant on design and not the building's actual use. Wasilla immediately north of the planning area has over three hundred commercial or industrial buildings and yet Wasilla has both a smaller area and smaller population.

Although the building use designation is the best information the borough has on businesses in the area, one thing not reflected in this information is the significant number of home occupations throughout the Knik-Fairview Planning Area. There are numerous individuals in the area that either support themselves wholly, or supplement their income, with a variety of home occupations and emerging cottage industries.

One of these emerging industries is commercial dog mushing tours. Interest in dog mushing has been increasing within the past several years and a number of local mushers have begun to market dog tours. It is expected that as the winter tourism industry becomes more established in Alaska the dog mushing industry will benefit from this growth and expand accordingly. This is one of the few industries within the planning area that has received significant growth recently. The Iditarod Trail Committee contracted with a consulting firm to document the economic impact of the 1992 Iditarod Race. The Study estimates that over \$9,830,000 in direct expenditures from event participants including; the Iditarod Trail Committee, the mushers, the Municipality of Anchorage and fans. The study further estimates that 58% of the expenditures occurred in the Wasilla area.

The following table gives a listing of known businesses located within the Knik-Fairview planning area. The list relies on the information provided by the borough tax assessment office which designates building use. If a building is obviously of a commercial or industrial nature the building is categorized as such. Businesses which are operating in the planning area but do not have a specific building for business and/or signage may have been overlooked. If there was no building use data indicating a business, but it was known that a business existed, the business was included in this listing.

BUSINESS DESCRIPTION	LOCATION	PARCEL SIZE
----------------------	----------	-------------

Fletchers Archery & Aurora Services	mile 1.5 Knik-Goose Bay Rd.	38.2 acres
Arctic Transmissions	mile 2.4 Knik-Goose Bay Rd.	2.76 acres
Alaska Motor Sports	mile 3 Knik-Goose Bay Rd.	5.20 acres
7-Eleven & Knik Kountry Liquor	mile 4.1 Knik-Goose Bay Rd.	1.92 acres
Duncan's Autohaus	mile 5.8 Knik-Goose Bay Rd.	5.00 acres
Settlers Bay Inn (currently shut down)	mile 8.1 Knik-Goose Bay Rd.	21.2 acres
Redington Sled Dog Tours	mile 12.5 Knik-Goose Bay Rd.	5.00 acres
Joe Redington's Husky Haven	mile 13 Knik-Goose Bay Rd.	45.65 acres
Knik Bar	mile 13.4 Knik-Goose Bay Rd.	2.82 acres
Knik Museum	mile 13.8 Knik-Goose Bay Rd.	1.23 acres
Larsen's Nursery	terminus of Foothills Blvd.	10.00 acre
Knik Towing and Wrecking	mile 1.6 Hollywood Blvd.	30.00 acres (on three adjoining lots)
Alas-Can Inc.	mile 1.8 Hollywood Blvd.	20.00 acres
Yukon Don's Bed & Breakfast	Yukon Circle	1.9 acres
Settlers Bay Country Club	terminus of Frontier Dr.	5.00 acres
Knik-Knack Mud Shack	Knik-Knack Mud Shack Rd.	40.00 acres
Safety Waste Incinerator	mile 0.2 Alix Dr.	7.95 acres

TOTAL ACREAGE OF COMMERCIAL/LIGHT INDUSTRIAL LAND = 185.88 acres

TOTAL ACREAGE OF INDUSTRIAL LAND = 57.95 acres

*Industrial uses are shown in **bold**.

Agricultural use of land is not considered a commercial or industrial land use and was not included in the above table. Borough tax records indicate that about 240 acres of land in the planning area qualify for the agricultural property tax exemption. This figure does not represent all lands in agricultural production within the planning area since some lands currently in production do not qualify for the exemption and some landowners choose not to pursue the exemption because of development restrictions.

Current Land Use Patterns

According to borough tax assessment records, the planning area has over 1,562 single family residential homes and 19 multi-family structures within the planning area. The majority of the multifamily structures are located near Wasilla on Knik-Goose Bay Road and Edlund Road. Almost half of the residential structures in the Planning area were built during years 1980 to 1984, the "boom" years.

There are numerous undeveloped lots in the area. Only one quarter (24%) of the privately held land available for development has been developed (any improvement on the land). This figure is misleading since one house on an otherwise undeveloped forty acre parcel would constitute forty "developed" acres. More than two thirds of the acreage considered developed is in five acre or larger parcels which could be subdivided and developed at considerably higher densities.

The most common lot size in the planning area is about one acre. There are more 40,000 square feet to 1.5 acre lots, both developed and undeveloped, than all other lot sizes combined. However, the majority of the land is in 15 acre or larger parcels of land. Over half of the privately owned land available for development is in undeveloped lots of 15 to 160 acres or more. Please refer to the table on the following page.

The following charts show the amount of developed and undeveloped private lots in the planning area. State and Federal land, public rights of way and water bodies are excluded from the following tables.

Within the five census blocks located entirely within the planning area, there are 1,404 housing units counted in the planning area, of which 78% were occupied and 23% were vacant. The Knik/Skyline area had over forty percent of its housing units vacant (41%) and 59% occupied. But this area also had the largest number of seasonal, recreational, and occasional use units representing 37% of its vacant units.

Of those housing units occupied in the planning area, seventy-six percent were owner occupied and 24% were renter occupied.

Over eighty percent (81%) of the housing units were single family dwellings, with 7% duplex-fourplexes, 2% fiveplexes and above, and 10% being mobile homes. The area around Vine Road and Southland Subdivision (north of Knik Goose Bay Road) and Knik/Skyline had the highest percentages of mobile homes with 20%.

According to the 1990 census, seventy percent of the housing units in the planning area were built since 1980, 20% were built between 1985-1989 and 50% were built between 1980-1984. One quarter of the housing units were built between 1970-1979 and only 5% are older than 1969.

UNDEVELOPED LOTS IN KNIK-FAIRVIEW*not including State or Federal lands

LOT SIZE	NUMBER OF UNDEVELOPED LOTS OF A GIVEN SIZE	TOTAL ACREAGE OF UNDEVELOPED LOTS OF A GIVEN SIZE
LESS THAN .91 ACRES (40,000 square feet)	1,114	566
.91-1.49 ACRES	2,097	2,179
1.5-5 ACRES	528	1,328
5-14.99 ACRES	227	1,822
15 ACRES OR MORE	215	13,720
TOTAL	4,181	19,615

DEVELOPED LOTS IN KNIK-FAIRVIEW *not including State or Federal Lands

LOT SIZE	NUMBER OF DEVELOPED LOTS OF A GIVEN SIZE	TOTAL ACREAGE OF DEVELOPED LOTS OF A GIVEN SIZE
LESS THAN .91 ACRES (40,000 square feet)	299	133
.91-1.49 ACRES	947	986
1.5-5 ACRES	237	726
5-14.99 ACRES	149	1156
15 ACRES OR MORE	64	3026
TOTAL	1,696	6,027

Over seventy five percent (76%) of the occupied housing units had wells for their water source. Over ninety percent (92%) of the occupied housing units had septic systems. Thirty six percent had natural gas for heating, while 16% used wood, 13% used bottled gas, kerosene, etc., and 12% used electric.

There were differences between the census data for the inclusive census blocks and the noninclusive census blocks. Housing units were slightly older in the area south of Big Lake with over half (51%) being built between 1970-1979. In the Point MacKenzie area nearly one quarter (21%) were built in 1959 or earlier.

There were differences between water sources, sewage, and heating sources when comparing the outlying area to the inclusive planning area. In the Point MacKenzie area only half (52%) of the housing units had wells as sources for their water; and only half (55%) had septic systems. All of these homes used either fuel oil, bottled gas, or kerosene for their heating source. In the south Big Lake area 44% used wood as their heating source with the remaining homes using fuel oil, bottled gas, or kerosene.

The western census blocks had significantly higher percentages of unoccupied housing units than in the eastern planning area. Census block #9755008 (Point MacKenzie area) had 75% of its housing units unoccupied compared to 29% occupied. Over half of its housing units were counted as seasonal, recreational, or occasional use units. Census block #9755006 (south Big Lake area) had 65% of its units unoccupied to 35% occupied. Over forty percent (43%) of its units were counted as seasonal, recreational, or occasional use units.

Mobile homes were high in the Point MacKenzie area at 23% of the housing units.

PART II

KNIK-FAIRVIEW COMPREHENSIVE PLAN

OVERALL GOAL STATEMENT

Overall Goal Statement

The Knik-Fairview planning area is a predominantly residential area that has developed in a rural, low-density pattern. The residents want to maintain this low-density pattern for most of the planning area.

There is limited commercial and industrial activity occurring in the planning area. Residents want any future commercial development to occur along the developed transportation corridors, but they do not want to see commercial strip development. Future light industrial uses should locate away from existing residential areas. Heavy industrial uses and other uses not compatible with residential uses should be reviewed to mitigate any negative impacts.

A higher level of permissiveness in relation to development and land use should exist in the southern portion of the planning area in keeping with the desires of the residents of this area.

The Knik-Fairview residents value their area because of its privacy, its recreational opportunities, and its clean environment. Residents want to plan for future growth so that development does not contaminate the natural resources and their environment, or negatively impact their quality of life.

KNIK-FAIRVIEW LAND USE PLAN

The objective of a land use plan is to guide the future community growth and development, while at the same time balancing and protecting values that are important to the community. Prior to recommending a land use plan, it is necessary to analyze current land use activities and articulate the community's goals and values. The Knik-Fairview planning team developed six goals that are related to land use, they are listed below.

GOALS:

- Encourage orderly growth and development by providing adequate land for a range of uses and activities.
 - Maintain existing low density rural residential settlement pattern.
 - Allow the continuation of the trend in the Knik area to develop as a dog mushing region.
 - Maintain the high quality of air and water.
 - Manage the Palmer Hay Flats State Game Refuge area to protect, preserve, and enhance the natural habitat and fish and wildlife populations.
 - Maintain and encourage a variety of recreational, educational, and scientific use of the Palmer Hay Flats State Game Refuge.
-

Residential Development

Currently, the use of land in the Knik-Fairview planning area is very homogeneous. By far the predominant land use is low density single family residential settlement. Very limited commercial, industrial and multifamily development exists in the planning area. The planning area's proximity to Wasilla, the largest city within the borough, has largely met these needs of Knik-Fairview residents. Similarly, Anchorage is the workplace of a significant portion of the Knik-Fairview population.

The most common lot size, developed or not, is approximately one acre. Very few of the subdivisions have been built out, many subdivisions especially those farther from Wasilla have miles of road with very few developed lots. Most of the smaller lot subdivisions are separated by tracts of undeveloped or very sparsely developed land with lots of up to eighty acres.

Approximately two-thirds of the land is in private ownership. The majority of the publicly owned land consists of the Palmer Hay Flats State Game Refuge and low lying wetland areas with greater development limitations in the southwest portion of the planning area.

Recommendations:

- Maintain the existing low density rural residential settlement pattern in appropriate areas.
- Developers should be encouraged to size lots at least 43,560 square feet, one full acre, rather than the current 40,000 square feet to decrease density and make provisions for poor soil conditions.

The latter recommendation would help accomplish two goals. Not only would a more rural atmosphere be maintained, but the threat of groundwater contamination from higher density septic systems would be lessened.

The planning team has expressed concern over the threat of groundwater contamination. The area's soil characteristics are problematic for the installation of septic systems. While the Department of Environmental Conservation (DEC) is aware of problems with septic systems in the area, they are unable to document the extent of these problems. Homeowners do not generally report their own problems/violations to the DEC and the DEC does not have a monitoring program. Experienced local septic professionals have stated that there are extensive problems in the area of Fairview Loop and Edlund Road. The most common problems result from fully saturated soils during spring thaw. A high water table or "tight" glacial till soils will further exacerbate this problem.

There was no mention of problems resulting from poor filtration, however, this type of problem is usually undetected unless coliform bacteria or other pathogens actually show up in the well water. DEC does not have any documented cases of this within the planning area.

Almost the entire planning area is classified by the Soil Conservation Service as having severe limitations to installation of a septic tank absorption field. Due to the extremely variable nature of the soils, septic installers must locate the absorption field where adequate soils exist. In the event of an absorption field failure, sufficient adequate soils should exist for the siting of a new system. Extra space for more flexible siting of both wells and septic systems can help alleviate current and potential water quality problems.

Recommendation:

- Only encourage higher densities where soil conditions and topography are better suited for septic tank absorption fields or community water and sewer systems are provided.

Currently there are at least three subdivisions within the Planning area which have a community water system. No community sewer systems exist in the planning area. Developers are currently required to install either the community water or sewer system to develop lots smaller than 40,000 square feet, down to a 20,000 square feet minimum lot size. Most developers prefer to install community water systems rather than the (usually) more costly septic systems, thereby doubling the density of potential groundwater contaminants (septic systems).

Given that the soil conditions in the planning area are unfavorable to the development of a septic tank soil absorption field, and that "hunting" for an adequate soil conditions is often necessary, the Planning Team has made the following recommendation. Only developers willing to invest in properly sited/located DEC approved community water and sewer systems be allowed to develop lots smaller than one acre (43,560 sq. ft.). Community water and sewer systems are required to be built to a higher standard by DEC and are required to undergo a design review of the installation.

The increase in lot size to one full acre will not severely lessen the number of lots available in the planning area. A comparison of the population projections provided in the table on page 25 and the amount of available land, shown in the table on page 32 provides an indication of the future availability of lots. If the average household size remains 3 persons per household and the projected population only develops lots in the size range of 40,000 square feet to 1.5 acres, the current supply of these lots will not be depleted until beyond the 20 year range of this plan. If private landowners subdivide all the unimproved larger parcels of land into one acre lots the supply of one acre lots will be almost five times the demand for lots at the end of the projection period, the year 2015. Subdividing large lots that currently have some development would create an even greater excess.

However, assuming that the pattern of development proposed in the transportation analysis proves true, the areas closer to the Parks Highway will fill in faster than the southern area. Also the transportation analysis population projections show a higher rate of growth, (during its projection period) for the planning area than the simple ratio/correlation method.

Given the high number (4,181) of undeveloped lots in the planning area the planning team also made the following recommendation.

Recommendation:

- Identify and encourage development in areas where there are vacant lots and/or acreage with roads and utilities.

In-filling will help reduce the per-capita cost of maintaining roads and providing other services. Currently there are many subdivisions within the planning area that have only a few developed lots along a one mile length of road. More efficient road maintenance and utility installation could be achieved by in filling within these existing subdivisions.

Commercial Development

There is little commercial development within the Knik-Fairview area. Just outside the planning area, within the adjacent city of Wasilla, there is a multitude of commercial businesses and retail outlets. The few commercial establishments that exist in the Knik-Fairview area are located primarily along Knik-Goose Bay Road.

Because of the planning area's proximity to Wasilla, the retail center of the Matanuska-Susitna Borough, businesses along the comparatively sparsely traveled roads within the planning area are

at a disadvantage competing with retail stores along the more traveled Parks Highway. The businesses that exist in the planning area either serve the local population, such as the 7-Eleven mini-mart and Knik Bar, or are not typical competitive retail establishments where location is of paramount importance, e.g. Knik Towing.

One of the concerns of the Planning Team was that Knik-Goose Bay Road be maintained as an important and visually pleasing transportation corridor for visitors and residents alike. It is one of the few long and scenic stretches of highway within the valley which has not had extensive commercial strip development. Because of the low traffic volumes and beautiful scenery unblighted by strip development it is a popular route for bicyclists and joggers. Similarly dog mushers, skiers, snowmachiners and all terrain vehicle enthusiasts use the adjacent trails along the road.

Recommendations:

- Commercial uses/activities should be encouraged to cluster around existing commercialized and high traffic areas identified on the land use map.
- Commercial development may be conditionally permitted outside of these identified areas on a limited basis depending on compatibility with surrounding area.

The clustering of commercial enterprises will inhibit unsightly commercial strip development, reduce traffic problems resulting from too many business related high traffic access points, and help to maintain the rural residential settlement pattern. This will also help maintain the aesthetic recreational and visitor potential of the corridor.

Recommendation:

- Buffering should be provided between non-compatible uses and activities in order to minimize land use conflicts.

The visual impact and a significant amount of the noise related to commercial and industrial development can be reduced by requiring a minimum size landscaped buffer. In many cases this could be as simple as leaving a sufficient number of existing trees and natural vegetation along the perimeter of a newly developed commercial lot.

Commercial Land Needs

The businesses within the Knik-Fairview Planning area account for 243.83 acres of land use. Of this approximately 186 acres could be classified commercial/light industrial and 58 acres classified industrial. If the current proportion of commercial land use to population were to remain constant during the planning period we can estimate the quantity of commercial land needed for future development. Given the 1996 estimated population for the Knik-Fairview Planning area of 5,839 and a projected population in 2015 of 11,849 the population, (and commercial developed land) will have doubled. According to this analysis the amount of land available for commercial development should not be less than 2 x 186 acres or 372 acres of land.

Note that this is only a method or tool for allocating sufficient lands to various uses and need not be strictly adhered to. Most of the larger parcels of land with commercial development only utilize a small portion of the lot. Hence, the current volume of commercial land is high which similarly skews the future estimate of commercial land needed.

Recommendations:

- Adult oriented businesses should be located away from residential areas.
- Adult businesses should be conditionally permitted.

Adult oriented businesses are especially out of character for the Knik-Fairview Planning area, primarily a residential area, as such should require regulations beyond those normally applicable to a business. Residents wishing to raise their families without the presence of a sexually oriented business in their vicinity should be able to do so. Furthermore, adult businesses have been shown to cause a decrease in property values. The adult business owner can reduce the negative impact adult businesses have on the surrounding commercial and residential property by limiting the size and content of signage and providing additional buffering and setbacks. These additional requirements should be made a condition of obtaining the permit.

Industrial Development

Similar to commercial development there also is very little industrial development within the Knik-Fairview planning area; several auto shops, a service station, a commercial incinerator and a wrecking yard. The planning team desires to maintain the Knik-Fairview area as a predominantly residential area and preserve the residential qualities of the area by restricting industrial uses to specific areas. The Core Area of the borough bordering the northeast corner of the planning area, extending from northwest of Wasilla to Palmer, allows both heavy and light industrial use. Also the adjacent city of Wasilla has several districts set aside for industrial use.

The Knik-Fairview planning team recognizes that the Knik-Fairview area is not a community unto itself, rather it is heavily dependent on both Wasilla, the Core Area and Anchorage for goods and services as well as employment. The planning area functions as a residential suburb of Wasilla and Anchorage. As a part of a larger community it is not necessary that the planning area provide substantial land for industrial and commercial use when those needs are well filled just outside of the area and minimally restricted in most of the surrounding area.

Recommendations:

- Light industrial uses should be permitted outright within the commercial/light industrial districts identified on the land use map.
- Light industrial uses may be conditionally permitted outside of the commercial/light industrial district on a limited basis.

Given the nature of heavy industrial uses there is the potential for significant land use conflicts within the predominantly residential community. The following regulatory suggestions are proposed to minimize these conflicts.

Recommendations:

- Heavy industrial uses should be conditionally permitted within the industrial district.
- Incinerators and wrecking yards will have setback and buffering conditional permitting requirements beyond those of other industrial uses.
- Heavy industrial uses will not be allowed outside of the industrial district.
- Hazardous waste sites are prohibited in the planning area.

There has been considerable concern amongst some residents in the area surrounding the medical waste incinerator located near the corner of Alix Drive and Knik-Goose Bay Road. Several residents up to two miles distant from the incinerator have complained of respiratory problems resulting from the emissions emanating from this incinerator. The incinerator is smaller than those which require permitting by the Department of Environmental Conservation.

Recommendations:

- The borough should coordinate with the State of Alaska Department of Environmental Conservation to access the public health impacts of the existing medical waste incinerator near Alix Drive and Knik-Goose Bay Road.
- Incinerators, asphalt batch plants, chemical processing facilities and other industrial and commercial uses associated with heavy point source emissions output shall have conditional permitting requirements in excess of other industrial and commercial uses to prevent public health hazards.

Historically, gravel pits have been regulated differently than other industrial uses within the Matanuska-Susitna Borough. The Planning Team desires that gravel pits be treated similarly to other industrial uses because of the similar impacts, such as noise, dust, traffic and visual impact.

Recommendation:

- Gravel pits should be treated as industrial uses and be subject to the same land use regulations as this plan proposes for other industrial uses.

Industrial Land Needs

Using a similar analysis for industrial lands, as was previously performed for commercial land, we can assume that there will be a need for 116 acres of industrial land by the year 2015. However, it should be noted that there are only three currently operating industrial sites within the Planning area: Knik Towing Wrecking, Alas-Can Inc. and Safety Waste Incinerators. Basing future land use on such minimal sample sizes is making large assumptions on very minimal information and can misrepresent future needs. Hence, the map of the proposed land use designations depicts an area significantly larger than the projected need for industrial lands based on this simple analysis.

Agricultural Development

Some of the best agricultural land in the state lies within the Knik-Fairview planning area, the soils classifications run from class II through VIII in the Matanuska-Susitna Borough. (No class I soils exist in Alaska.) Very little class II soils exist, primarily south of Palmer and near the Butte. Within the planning area the best (class III) soils exist near Wasilla in the eastern Fairview Loop region extending westward to Edlund Road. Much of the area has already been developed and as stated in previous sections this northern area is likely to develop faster than the rest of the planning area.

Preservation of farmland is difficult since virtually all of the Class III soils are no longer in public ownership. As an incentive to preserving agricultural use of the land the borough allows individuals who are using their land for agricultural production, to receive property tax reductions. The Planning Team supports these property tax benefits.

Recommendations:

- Encourage agricultural development/small farms on good agricultural lands where compatible with low density residential land use pattern.
- Encourage existing farms to stay in use.
- Maintain the existing borough property tax break for agriculture lands.

General Recommendations

Junk

Within the Knik-Fairview Planning area there are very few unsightly industrial and/or garish commercial businesses. The area has a distinct rural residential charm. The Knik-Goose Bay Road, Fairview Loop Road and many others within the area are scenic drives. A threat to the scenery, property values, environment and health is the common proliferation of junk, not only in commercial salvage yards, but also on residential and commercial property. The Knik-Fairview Planning Team recognizes the need and benefit of scavenging, recycling, etc. The Team also recognizes that one man's "treasures" are often another's source of visual blight. While not concerned over junk which is contained or behind buildings, trees or fences, the Team is concerned over the outward appearance of the lot(s).

Recommendation:

- Discourage the quantity of junk visible from public rights of way.

Correctional Community Rehabilitation Centers

Correctional community rehabilitation centers (CCRC), otherwise known as "halfway houses," are intended to be placed within communities, including residential areas, for the purpose of allowing prisoners nearing the end of their sentence to make the transition from higher security prison life into the community, or to allow misdemeanants, such as persons convicted of driving

while under the influence of alcohol to, perform community service, restitution work and serve their sentence within their community. CCRC's are intended to house people who are from the community in which the CCRC is located. CCRC's have the potential to be damaging to the property values, usefulness of adjacent properties, and are potentially harmful to the public health safety and welfare.

Recommendation:

- Correctional community rehabilitation centers should be conditionally permitted throughout the planning area.

Airstrips

There may be as many as nine airstrips scattered throughout the planning area. Only three airstrips have obtained an airspace determination from the Federal Aviation Authorities (FAA). Currently, the only regulation that applies to the establishment of these smaller airstrips, is that they must obtain an airspace determination. The airspace determination is an advisory determination from FAA regarding the safety of the proposed airstrip based solely on potential airspace conflicts with other air-traffic operations nearby. A negative airspace determination, a notice of objection, will not prevent the applicant from developing an airstrip since the determination is only advisory.

The Planning Team has expressed concern over the potential safety conflicts and increased noise resulting from these small uncontrolled airstrips.

Recommendation:

- Airstrips should be conditionally permitted throughout the Planning area.

Fairview Loop Road Subdivisions

There is very little roadside development along Fairview Loop Road. Some of the few agricultural areas within Knik-Fairview are located along this stretch of road. Most of the Fairview Loop area has good agricultural soils which are an uncommon commodity in Alaska. The minimal development alongside the road and the agricultural areas contribute to the rural rustic appeal of the Knik Fairview area.

It is expected that Fairview Loop Road will be an important traffic corridor as the area becomes more developed. By keeping the lot sizes adjacent to Fairview Loop Road large and minimizing the number of lots along the roadway, the access points and number of driveways will be limited, thus promoting safer driving conditions.

Recommendations:

- The rural appearance of this sub area should be preserved by encouraging compatible development along Fairview Loop Road.
- Larger lot sizes should be required adjacent to Fairview Loop Road to enable people to develop farther back from the road. A minimum 5 acre lot size with at

least 330 feet of road frontage should be required for those lots fronting Fairview Loop Road. Area-wide lot sizes of one full acre will be the rule on lots not fronting Fairview Loop Road.

Historical/Archeological Areas

The southern portion of the planning area has numerous historical and archeological sites pertaining to early white settlement in Knik, as well as native archeological sites. Development pressures in the area are starting to impact these sites, and in particular many of the native archeological sites, including burial grounds, are being disturbed.

The Comprehensive Plan area encompasses the following sites listed on the Alaska Heritage Resource Survey (AHRs) with the State:

- a) 5 Colony sites
- b) 5 Homesteads
- c) 24 Native sites
- d) 16 miscellaneous which include the Knik Pool Hall and the Fairview School.

Because of the possibility of these areas being scavenged by private collectors/archaeologists and tourists, the sites are not identified. Efforts should be made to preserve the sites.

Environmentally Sensitive Lands

Wetlands

Wetland systems throughout the Knik-Fairview area provide recreational opportunities for residents and visitors alike. Recreational activities include fishing, bird watching, photography and other outdoor activities. Fish Creek is a popular dipnetting site which is heavily impacted during open season. Wetland areas provide needed habitat for the various species of fish, waterfowl and wetland dependant mammals, such as otter, beaver and other riparian dependant wildlife.

While it is unlikely that Knik-Fairview will undergo the widespread loss of wetlands that has occurred in the lower 48, the wetlands are a significant asset to the community, and in need of protection.

Recommendations:

- Guide land use and development so that it is compatible with responsible management of wetlands.
- Maintain Fish Creek, Goose Creek and related wetland systems in public land buffers.

Coastal Zone

The planning area has almost 22 miles of coastline including portions of the Palmer Hay Flats State Game Refuge. The planning area's shoreline extends almost as far south as the Goose Bay State Game Refuge.

Recommendation:

- Guide land use and development so that it complies with the borough's Coastal Management Program. Water dependent uses and water related uses are primary for coastal areas.

Bluffs

Much of the shoreline is comprised of highly erosive bluffs as high as thirty feet. Currently very little development has occurred near these bluffs. There are no regulatory control of development in this region.

Recommendation:

- Identify eroding bluffs, erosion rates, unstable slopes, and research suitable development and management practices.

Establishment of Knik Sled Dog/Recreation District

The Knik-Fairview Planning area, the same region as the Knik-Fairview Community Council area, is somewhat unusual in the borough in that it includes two distinctly different populations in the same planning area and community council area. The northern section of the planning area is functionally a suburb of Wasilla and Anchorage. In contrast, the Knik area has historically been, and is still considered by many of its residents, to be its own community.

The Planning Team acknowledges the social and political differences of the two populations.

The socio-economic differences in the two areas include household income and commute patterns. Census data indicates that many more residents of the northern area commute out of the borough than in the southern area. Census information also indicates a fairly dramatic difference in the household income of the two areas. The southern planning area includes portions of two census blocks, the Knik and Pt. MacKenzie areas, which together have an average household income half that of the census blocks to the north. Other differences include a 10% older median age in the Knik census block than the average of the remaining planning area and a smaller household size. While this data indicates a difference in the populations, it does not adequately express the divergent identities of the people in the Knik region.

Development Recommendations

The Knik community faces less development pressure than the northern planning area.

Furthermore there is a more resourceful attitude amongst the many residents of the Knik area. Although difficult to quantify or substantiate, the planning team and planning staff perceive a difference in attitude toward land use regulations from residents in the south as opposed to those in the north. In general, the perception is that the Knik area residents would prefer fewer protective land use regulations than residents north of the Knik area. This difference has been subtly evident at the many public meetings throughout the planning process. Those individuals that were supportive of protective land use regulations most often were from the northern planning area.

Because the Knik area appears to be facing less development pressure and there appears to be less desire among residents in the Knik area for land use regulation, the Planning Team has recommended less restrictive land use regulations in the southern planning area than the northern planning area. Specifically, certain regulations proposed for the rest of the planning area should be excluded from the "Knik District."

Recommendations:

- The Knik District should have more permissive land use regulations in keeping with the desires of its residents and the more remote and rural location.
- Commercial businesses should not be restricted within the Knik District.
- Heavy and light industrial uses should be conditionally permitted within the Knik District.

Mushing Recommendations

One of the defining elements of the Knik community is the prevalence of dog mushing activity. The area around Knik has a long history and tradition of dog mushing. The white settlement of the Knik townsite was a freight hauling station to the goldfields of Nome. Dogsleds were used extensively during this period. More recently the use of dog sleds has been kept alive through recreational dog mushing.

Within a two mile radius of Knik there are more than 25 dog lots and an excess of 1,800 dogs. The area includes the Knik Museum and Dog Musers Hall of Fame, the Historic Iditarod Trail and several commercial tourist oriented mushing operations offering guided dogsled trips. Dog mushing is one of the few commercial industries within the Knik area.

Dog mushers have located within this area for several reasons:

- Proximity to abundance of trails suitable for dog mushing and,
- relatively sparse development (reduced land use conflicts with residential neighbors)
- historical use and acceptance of dog-mushing and dog lots,
- prevalence of other knowledgeable mushers and availability of experienced help.

Recommendation:

- Dog lots and dog mushing should be preserved as a legal use in the Knik District.

Although the area has a long history of mushing it is acknowledged that most current and future residents of the area are not likely to be mushers. A minimum of regulations need to exist within this district and the remaining planning area to minimize the impacts of dog lots to adjacent residents. These impacts are in descending order of importance/annoyance; noise, visual blight, odor, damage to water quality, environmental damage to soils and vegetation.

Recommendation:

- There should be a larger minimum lot size of two acres within the Mushing District to maintain a land base of suitably sized lots for dog mushing and to alleviate land use conflicts.

The previous recommendation would help to minimize land use conflicts between mushers and neighboring land owners. The minimum lot size will help keep the overall residential density low (reduce the potential for land use conflicts), allow mushers to locate their kennel away from their neighbor's lot line and allow non-mushing residents to site their homes away from lot lines and dog lots. Also, given the proposed minimal regulation for the Knik District, the larger lot size will also alleviate some of the conflicts that might otherwise occur in a denser population with no separation of commercial and residential land uses.

Recommendations:

- Those wishing to develop dog lots outside of the Knik District should be required to have a minimum size five acre lot.
- Dog lots will only be allowed as an accessory use to a principle residential use outside of the Knik District.
- Minimum setbacks and buffers should be required for all dog lots.
- Dog density should be regulated to prevent inhumane, overcrowded and environmentally damaging conditions. Within the Knik District the density should be no more than an average of 25 dogs per acre. For areas outside the Knik District the maximum density should be 10 dogs per acre.

The planning area north of the Knik District has more development and, on average, higher density development than the Knik area. The region is likely to continue developing in this manner largely due to the influence of Anchorage. Few dog lots exist in the northern portion of the planning area. The northern area has almost no public lands (other than the Palmer Hay Flats which mushers find unsuitable for their needs). The planning team recognizes that many of the mushers are scrupulously conscientious of their neighbors, however, others are unable to effectively minimize the negative odor, audible and visual impacts of a large number of dogs confined to a relatively small area. The planning team desires to maintain the residential qualities that have drawn its residents to the northern planning area and recommends that dog lots north of the Knik District be sited on lots no less than five acres in size. The larger lot size will mitigate some of the negative impacts that accompany some, but not all, dog lots. Furthermore, by allowing dog lots only as an accessory use to a principle residential use the landowner will have an inherent incentive to maintain the dog lot in a manner compatible with residential development.

The setbacks and buffers will prevent mushers from locating their dog lots as close as possible to their neighbor and provide some visual and audible relief to adjacent landowners. The dog density requirement is intended to alleviate some of these impacts to neighboring property owners and minimize environmental damage.

Another issue of importance to mushers and surrounding landowners alike is access to trails. Many mushers harness their dogs and leave their property via dogsled. Legal access to mushing trails is a necessary amenity if the mushers are to avoid trespassing. This is likely to become a bigger problem as the Knik areas population grows and the private lands which are currently being used for trails are developed. Reserving trail rights-of-ways during the subdivision process is critical to maintaining the traditional heritage of the Knik area as a dog mushing center.

Recommendations:

- Sufficient legal trails need to be established and trail rights of ways need to be preserved to support dog mushing and other recreational uses.
- Subdividers should be encouraged to develop lots backing upon trails and dedicate trail rights of ways where appropriate.

The availability of legal trails will help reduce the current trespass problems by giving mushers and recreational users adequate access to public lands through predominantly privately owned areas.

Public Lands

The majority of public lands within the planning area constitute the Palmer Hay Flats State Game Refuge (PHFSGR). Approximately 20 square miles of the planning area's 90 square miles consist of the PHFSGR. Another 10 square miles of both state and borough land exists in the southwestern portion of the planning area. However, almost no public lands exist within the developed portion of the planning area.¹

Palmer Hay Flats State Game Refuge

The Palmer Hay Flats provide important resting and staging areas for waterbirds during spring and fall migration. Since Ducks Unlimited and the Alaska Department of Fish and Game began a waterfowl enhancement program the area has become more important as a duck breeding area. The PHFSGR is one of the most heavily used waterfowl hunting sites in the state.

Moose are also prevalent in the Refuge. The Hay Flats provide both wintering and calving habitat. The 1986 PHFSGR Plan estimates that between 25 to 30 Moose calve in the refuge annually.

¹See Land Ownership Map pp 98

Recommendations:

- Manage the Palmer Hay Flats State Game Refuge area to protect, preserve, and enhance the natural habitat and fish and wildlife populations.
- Maintain and encourage a variety of recreational, educational, and scientific uses of the Palmer Hay Flats State Game Refuge.

Implementation of Land Use Plan

The Planning Team has developed land use recommendations based on their decision to adopt an enforceable zoning ordinance which will identify specific areas for commercial and industrial development, leaving the remaining areas largely residential. The land use recommendations included in the land use plan are drafted in such a way as to allow the most flexible zoning that will achieve the desired goals. It is the Planning Team's belief that the community's interest is best served by adopting land use regulations specifically guiding development in this way.

Zoning is not new to this area. Zoning in the form of land use regulations already exists in the planning area. Conditional permits are required for mobile home parks, community correctional rehabilitation centers and commercial junk yards. Setback requirements apply to all habitable structures. Furthermore, there are regulations for building within a floodplain, permitting requirements for alcoholic beverage uses and more restrictive regulations applicable to the Hay Flats Special Land Use District.

As has been stated previously, The Knik-Fairview Planning area is somewhat unique in the borough due to its homogeneity of land use. It is this situation that allows the community to protect the qualities that have drawn its residents to the community while creating only minimal regulatory impact on its residents, businesses and landowners.

The analysis to predict commercial/light industrial land needs (page 46) and heavy industrial land needs (pages 47 & 48) indicates a need for 372 acres of commercial/light industrial land and 116 acres of industrial land by the year 2015. The land use map which conceptually defines the approximate boundaries of the commercial/light industrial districts and industrial districts has allocated roughly 650 acres to commercial/light industrial land uses and 250 to industrial uses. While this may seem like an exceptionally small allocation of commercial and industrial land, it is far in excess of anticipated commercial and industrial development. There is actually a much greater excess since the Knik District is open to commercial/light industrial development. However, it is presumed that at least initially, the northern planning area will, and is, facing greater development pressure because of its closer proximity to Wasilla and Anchorage.

The Planning Team has also recommended that areas outside the commercial/light industrial districts allow the conditional permitting of commercial and light industrial land uses which are compatible with surrounding areas. This method of zoning is the most flexible zoning able to still provide for the preservation of the qualities making the area a desirable residential community.

In addition to the policy goals and guidelines contained within this plan, the assembly may, from time to time, adopt measures to further the goals and objectives of the plan. These measures may include nuisance and land use regulatory ordinances protecting the public's health, safety and welfare, maintaining the quality of life in the borough, and encouraging or discouraging specified uses and construction of structures. Nuisance or land use regulatory ordinances and permits the borough may adopt include those items referenced throughout this plan, but are not limited to them because the planning goals, community needs, and the regulations necessary to protect the public's health, safety, and welfare may change through time.

TRANSPORTATION PLAN

Goal

Provide a safe, efficient, and well-maintained transportation network that promotes safety for vehicular and pedestrian traffic, prevents congestion, and preserves the functions of roads.

Promote more direct access connecting the planning area to important transportation corridors outside of the planning area.

Protect the important historical and recreational trails within the planning area with adequate legal rights-of-way.

Road System

The Knik-Fairview Planning area is accessible via five routes: Knik-Goose Bay Road from the north, Fairview Loop from the northeast, Point MacKenzie Road from the southwest and Hollywood Boulevard, Johnson Road and Vine Road from the northwest. The main thoroughfare within the Knik-Fairview Planning area is Knik-Goose Bay Road. The two lane Knik-Goose Bay Road follows the original supply road from Knik northeast to Wasilla and southwest to Goose Bay.

Less than one-quarter of the roads in the planning area are paved. The Knik-Goose Bay Road, Fairview Loop Road and most roads within the Settler's Bay area on both sides of the Knik-Goose Bay Road are paved.

Roads within a community serve different functions. Some roads serve only as access to property and have limited through-traffic. These roads are referred to as local or residential roads. Other roads, known as collectors, collect the traffic from the local roads and feed it onto arterials. The arterials, serve to move traffic from one primary destination, such as a town or community, to another, carrying high volumes of traffic at relatively high speeds. The combination of all of these functional roads forms the roadway system of Knik-Fairview. It is important to identify the functions of roadways within a community and thus to plan the roadway system improvements accordingly.

Matanuska-Susitna Borough Comprehensive Transportation Plan

The Matanuska Susitna Borough has a Comprehensive Transportation Plan that was adopted in March 1984 which establishes the direction for planning of borough roads. This 1984 plan is currently being updated by the Borough Planning Department and the Transportation Advisory Board.

The directives in the 1984 plan include:

- Upgrading of the existing roads which lack adequate surfacing, drainage, and alignment is necessary to create a road network that will serve the borough residents.
- Initial emphasis should be placed on improving the arterial and collector system with secondary emphasis placed on improving the residential and resource roads.
- Safety is the key concern throughout the borough.
- The long range functional need is the development of a system of parallel roads and cross connectors to provide: safe and efficient movement of traffic, better access between communities, and access to natural resources and recreational areas which broaden the economic base.

Anticipated Regional Transportation Improvements

The recent improvement of the Glenn Highway to a four lane highway from Anchorage to the intersection with the George Parks Highway has spurred a significant amount of growth in the Knik-Fairview Planning area and the rest of the Matanuska-Susitna Valley. Future improvements along the George Parks Highway through the Wasilla area are expected to have the same affect on the Knik-Fairview and greater Wasilla areas.

George Parks Highway Improvements

The Alaska Department of Transportation and Public Facilities (ADOTPF), the City of Wasilla and the Matanuska-Susitna Borough have been involved in an extensive planning and public hearing process regarding the expansion of the Parks Highway to four lanes from the Glenn Highway through Wasilla to Lucas Road. The design options for the expansion include either a four lane controlled access highway or a five lane highway with a two-way left hand turn lane between Crusey Street and Hermon Road. Both options would include several separated grade intersections (overpasses) and frontage roads. The Parks Highway improvements the ADOTPF intends to construct that will affect the planning area are:

- Extension of the Palmer-Wasilla Highway to Glenwood Avenue/Knik-Goose Bay Road.
- Interchange at Seward Meridian and Parks Highway and extension of Seward Meridian to Old Matanuska Road.
- Interchange at Fairview Loop and Parks Highway

Palmer-Wasilla Highway Extension

Included in the Parks Highway improvements is the future extension of the Palmer-Wasilla Highway to Glenwood Avenue. This will allow people to travel from the intersection of Parks Highway/Palmer-Wasilla Highway along the extension to Glenwood Avenue and onto Knik-Goose Bay Road bypassing the congested area of the Parks Highway along Wasilla Lake and the Wasilla Mall. This will alleviate a significant amount of traffic which otherwise would be traveling farther north on the Parks Highway and turning left/south onto Knik-Goose Bay Road.

The intersection of the Parks Highway and Knik-Goose Bay Road has the dubious distinction of being the most congested intersection in the borough according to ADOTPF figures.

Recommendation:

- The Planning Team supports the extension/connection of the Palmer/Wasilla Highway to Glenwood Avenue.

Interchange at and Extension of Seward Meridian Road

The ADOTPF Parks Highway improvements includes creating an interchange at Seward Meridian Road and the Parks Highway. The design also calls for an extension of the Seward Meridian Road southward to the Old Matanuska Road thereby creating two methods for exiting the Parks Highway and funneling traffic onto Fairview Loop Road. Fairview Loop intersects with the Old Matanuska Road half a mile east of this new connection with the Seward Meridian.

Interchange at Fairview Loop Road and Parks Highway

The design improvements for the Parks Highway also include an interchange at Fairview Loop Road and Hyer Road/Gershmel Loop Road. Fairview and Gershmel Loop Road will be connected forming a highway frontage road connecting Gershmel Loop Road to Old Matanuska Road.

Wasilla Bypass

During the public hearings on the Parks Highway expansion there was renewed support for a Wasilla bypass. ADOTPF had, prior to this renewed interest, shelved the idea of a bypass. Following the recent public hearings at which the idea of a bypass re-emerged, an analyses of the bypass's feasibility was performed. The analyses, coordinated by the borough for ADOTPF, has determined the expansion of the Parks Highway to four lanes is needed immediately regardless of a bypass. Furthermore, the most recent Parks Highway, MP 37-44 Capacity Analysis Final Report concludes that after the proposed Parks Highway improvements there will not be sufficient need for a bypass before the end of this plan's 20 year projections.

However, ADOTPF officials have indicated that a bypass around Wasilla will eventually be necessary. The ADOTPF had researched location options for the bypass in 1981 and identified two routes south of the Parks Highway in the Fairview Loop Area.

Of interesting note is that commuters have begun using some alternative roads such as Fairview Loop to Old Matanuska Road, just outside of the planning area, as a bypass. The use of roads for higher intensity purposes than which they were designed can lead to unsafe situations where higher speed and higher volumes of traffic are moving through roads designed primarily as access to residential areas.

Recommendation:

- The Planning Team supports the concept of a Wasilla Bypass through the Planning area yet realizes that the siting of such a bypass will be a highly controversial issue and should involve extensive public participation in the planning process.

Vine Road Upgrade and Paving

The 1996 legislature has appropriated \$1,700,000 to upgrade and pave the Vine Road from the Parks Highway to Knik-Goose Bay Road. The portion of Vine Road from the Parks Highway to Hollywood Boulevard is borough maintained. The school district originally requested the extension as a way to reduce the busing distance from the Goose Bay Elementary School north to the Meadow Lakes area. The road improvement project also includes installation of a pedestrian/bike safety path near the school. The extension and improvements will upgrade Vine Road to a collector level road. The Planning Team is particularly concerned about the safety of the section of Vine Road south of Hollywood Boulevard to Knik-Goose Bay Road. This section of road has a relatively small road surface with significant drop offs on each side of the road. Furthermore, the road experiences severe "washboarding" to the extent that control is sometimes difficult at moderate speeds.

Recommendations:

- The portion of Vine Road south of Hollywood Boulevard should be redesigned to alleviate the significant safety hazard that exists as a result of its washboard surface and steep dropoffs alongside the road. The redesign should include guardrails along the portions of road that have a steep dropoff beyond the shoulder.
- The Planning Team supports the paving and improvement of Vine Road Extension.

Hollywood Boulevard Upgrade and Paving

The 1996 State legislature has appropriated \$1,300,000 to upgrade and pave Hollywood Boulevard. Members of the Planning Team have expressed concern over the condition of Hollywood Boulevard upon which is located Goose Bay Elementary School. Hollywood Boulevard is an important connector between the Planning area and the community of Big Lake.

Recommendation:

- The Planning Team supports the paving and improvement of Vine Road Extension and recommends that the potentially dangerous curves be redesigned.

Edlund Road Upgrade

The 1996 State legislature has also appropriated \$400,000 to upgrade Edlund Road which is only partially paved.

City of Wasilla Proposed Improvements

The City of Wasilla intends to connect Togiak and Thomas Street which will connect the middle portion of Fairview Loop Road to Glenwood Avenue. These combined extensions would reduce the travel distance from Cottonwood Creek Mall to the intersection of Fairview Loop and Thomas Street to 5.5 miles. Currently the travel distance is at least 7 miles. Depending on the route chosen the proposed improvements will reduce the travel distance by 1.5 miles. The Palmer-Wasilla Highway extension and Togiak St./Thomas St. connection will connect the inner Fairview Loop area much more closely with the core area of Wasilla and area traffic patterns would change accordingly. The connection may also promote more development of the inner Fairview Loop area by increasing its accessibility. The City of Wasilla has not yet appropriated any funds for the project.

Recommendation:

- The Planning Team supports the connection of Togiak and Thomas Streets but suggests that an adequately sized right-of-way and road surface be created to handle the significant increase in traffic.

Port MacKenzie

Although not a road improvement project, the development of a port facility at Point MacKenzie would have significant regional effects on transportation within the Planning area. The fate of the Port MacKenzie project is currently unclear, but given the right factors (e.g. a higher price of coal than the current market rate) the project could materialize. Knik-Goose Bay Road is identified as the proposed short term access to the Port. Point MacKenzie Road to Burma Road Realignment to South Big Lake Road is the proposed mid-term access route and Point MacKenzie Road west across the Little Susitna River and then north as the long-term road access route. Additionally, a railroad corridor is proposed to pass west of the planning area and west of Big Lake. The development of a port facility would likely increase truck traffic along Knik-Goose Bay Road at least for the short term, possibly longer.

Borough Transportation Improvement Program

Major road capital improvement projects, either road extensions, new roads or major realignments and/or upgrades are prioritized through the borough's Transportation Improvement Program, a sub-category of its Capital Improvement Program. The Capital Improvement Program identifies those projects which the borough believes to be necessary for the continued development of our infrastructure and economy. The borough requests project funding for road projects from the State Department of Transportation and Public Facilities who has final authorization over the projects.

Projects included in the Borough's Fiscal Years 1997-2002 Transportation Improvement Program that are within or affect the Knik-Fairview Planning area include:

- Parks Highway improvements including:
 - * Extension of the Palmer-Wasilla Highway to Glenwood Avenue/Knik-Goose Bay Road.
 - * Interchange at Seward Meridian and Parks Highway and extension of Seward Meridian to Old Matanuska Road.
 - * Interchange at Fairview Loop and Parks Highway
- Edlund Road upgrade and paving
- Vine Road upgrade and paving
- Hollywood Road upgrade and paving

1996 Matanuska-Susitna Borough Road Service Area Road Improvement Projects

The borough, as part of its routine upgrading and maintenance program, intends to install streetlights at the intersections of Fairview Loop at Harness Street, Dan Street, Snowshoe Parkway, and Valley Loop Road East. In 1995 the Fairview Loop intersections at Abby Boulevard, Well Site Road, Harness Street, Edlund Road, Suburban Drive and Lupine Lane were lit. Similarly, the summer of 1996 within Knik RSA, the Hollywood Boulevard intersections of Johnsons Road, Sylvan Lane, and Eidelweiss Drive and the Knik-Goose Bay Road intersections of Wellington Drive, Knik Knak Mud Shack Road and Compass Drive will be lighted. During the summer of 1995 the intersections of Knik-Goose Bay Road at Foothills Blvd, at Sunset Ave, at Cameo Drive, at Clapp Street, at Royal Lane and Horizon Drive were also lit.

The only paving scheduled to be done in either RSA the summer of 1996 are the approaches to several intersections along Fairview Loop Road including Dan Street, Valley Loop Road East and RiverDell Drive. Within the Knik RSA the intersections of Donovan Drive and Royal Lane; Gala Drive; North Shore Drive and Malemute Run at Knik-Goose Bay Road will be paved.

Most of the funding for upgrade and improvement of borough roads comes from funds in the Road Service Area accounts described below. Another source of funding available to the road service area is the Borough's Road Upgrade/Paving matching grant program. This borough-wide program has been funded by legislative grants over the last three years. The program has received approximately \$470,000 in fiscal year 1992, \$700,000 in fiscal year 1993 and \$500,000 in fiscal year 1994. This grant source was not funded for fiscal year 1995, but was funded for fiscal year 1996 at approximately \$590,000. Grant funds are allocated to the borough's road service areas based on their total mileage of certified roads. For Knik RSA and Fairview RSA combined, the funding ranged from \$90,000 to \$130,000 per year.

State Transportation Improvement Program

Similar to the borough's Transportation Improvement Program, the State Department of Transportation and Public Facilities has a State-Wide Transportation Improvement Program (STIP) which outlines the projects the state intends to fund in the coming years. The Transportation Improvement Program's projects are funded from a combination of revenue sources, including federal revenue distributed to the Alaska Department of Transportation and

Public Facilities, state gasoline tax revenues also administered by the state transportation department, and state general fund revenues.

The state program has a preliminary planning process, Transportation Needs and Priorities (also referred to as the Needs List), that prioritizes projects in a four-tier ranking system. Priority #1 projects are highest priority over lower ranked projects. Upon completion of a final Needs List the Statewide Transportation and Improvement Program (STIP) is prepared. The STIP is the financially constrained three year spending program. The top ranking projects within the Needs List become the eligible pool of projects for inclusion in the STIP.

The "Draft 1995 Transportation Needs and Priorities in Alaska" document includes the following prioritized projects that affect the Knik-Fairview Area.

- | | |
|--|--------------------|
| • Palmer/Wasilla Highway extension | priority ranking 1 |
| • Old Matanuska Road rehabilitation and paving | priority ranking 2 |
| • Seward Meridian Road upgrade and extension | priority ranking 2 |
| • Edlund Road Paving | priority ranking 3 |
| • Hollywood Road upgrade and paving | priority ranking 3 |
| • Knik-Goose Bay Road upgrading | priority ranking 3 |
| • Vine Road upgrade and paving | priority ranking 3 |
| • Edlund Road extension to Fern Street | priority ranking 4 |
| • Thomas Street extension to Togiak Street | priority ranking 4 |
| • Knik-Goose Bay Road/Parks Highway overpass | priority ranking 4 |

The state projects funding only three of the proposed projects affecting the Planning area within its projected Six Year Program of Projects:

- Fairview Loop to Gershmel/Hyer Road interchange
- Palmer/Wasilla Highway extension
- Seward Meridian interchange

The combination of the road improvements have one aspect in common, they will increase the accessibility of the Knik-Fairview Planning area and hence could increase the development and growth within the planning area above what it could be without the improvements.

Road Maintenance

The Alaska Department of Transportation and Public Facilities and the Matanuska-Susitna Borough provide for maintenance of Knik-Fairview's Roads.

State Roads:

- Knik-Goose Bay Road (paved)
- Fairview Loop Road (paved)
- Hollywood Road (gravel)
- Vine Road south of Hollywood Boulevard (gravel)
- Edlund Road (portions paved)
- Hayfield Road (gravel)
- Old Matanuska Road (gravel)

All other roads within the Knik-Fairview Planning area are either borough certified roads or private roads and driveways. The Matanuska-Susitna Borough maintains almost all of the estimated 170 miles of borough certified roads within the Planning area. The Knik-Fairview Planning area's roads are located primarily within the Knik Road Service Area (RSA) and Fairview RSA. Roads must be certified by the borough before they are eligible for maintenance. In order for a road to be certified it must first meet certain design and construction standards. In the past many of Knik-Fairview's roads were certified for maintenance without being constructed to an acceptable standard. These substandard roads have increased the cost of maintenance and upgrade for the road service area. Borough roads can be maintained either year-round or summer only.

Road Service Area Method of Funding Maintenance and Improvements on Borough Roads

The Planning Team has expressed concern over the Road Service Area (RSA) system of allocating routine road maintenance and improvement funds. The developed portion of the borough has been divided into 17 RSA's. Funds available for routine roadwork come from local taxes levied within the RSA and an allocation of state funds proportional to the number miles of borough maintained road within the RSA.

The borough's method of allocating funds for projects within RSA's consists of soliciting input from the Road Area Supervisors, whom are residents and representatives of the RSA. There are three road area supervisor positions per road service area, yet many of the supervisor positions are vacant. There are several reasons for the lack of road area supervisors but the primary one is a lack of interested applicants. During 1995 the Knik RSA had only one supervisor and two vacancies, the Fairview RSA had no road area supervisors. Without Road Area Supervisors, borough staff must allocate road maintenance without input from a community representative.

There are two sources of revenue for annual maintenance of borough owned roads: property taxes which are assessed to each road service area for road maintenance and repair, and state revenue sharing funds which are allocated per mile of borough certified road. Over the past fifteen years the state funding has been steadily declining from a rate of over \$2,500 per mile in 1981 to \$806 per mile in 1996. In the Knik Road Service Area, which has 139 miles of borough certified road, the state portion of funds constitutes nearly half of borough road maintenance funds. Within the Fairview Road Service Area, which has 40 miles of borough maintained road the state portion constitutes less than one third of the funds for road maintenance.

Certain patterns of land use create greater road maintenance costs for the individual homeowners. The sparsely developed subdivisions are much more costly to maintain per household than more densely developed subdivisions. Within the Knik-Fairview Planning area there is a pronounced difference in both property taxation for road maintenance and amount of road maintenance provided per mile of road. This is a result of the amount of taxable development relative to the amount of borough maintained roads. There are 1,061 single family residences within Knik RSA which has 139 miles of borough maintained road. This averages out to 7.6 single family residences per mile of borough maintained roads. Within Fairview RSA the average is 16.4 single family residences per mile.

Although it is overly simplified to compare only homeowners in the Knik RSA to homeowners in Fairview RSA since property taxes include all land and improvements, the single family homeowners pay the majority of property taxes within the Knik-Fairview Planning area, Knik RSA and Fairview RSA. The majority of the remaining tax base is composed of undeveloped land followed by developed land with improvements other than a single family residence. Also the average "density" of 7.6 and 16.4 single family residences per mile does not assume that there is an average of 7.6 or 16.4 single family residences along a mile of borough maintained road since many homes are located along state roads. It would be more accurately described as how many taxpaying homeowners are paying for maintenance of a mile of borough maintained road.

Within the sparsely developed Knik Road Service Area (RSA) the FY 1996 road service mil rate is 1.75 and receive \$2,236 worth of road maintenance per mile of road. In the more densely developed Fairview Road Service Area residents pay a mil rate of 1.00 and receive \$2,725 worth of road maintenance per mile.

Essentially, Fairview residents get more and pay less because of the higher densities. This remains true even after correcting for the difference in average values of single family residences in the two RSA's. For the Knik RSA residents to get the same level of road maintenance as Fairview RSA the mil rate would have to be 2.35. As state funding declines farther the mil rate in Knik RSA will have to rise more than the Fairview RSA mil rate to maintain the same level of maintenance.

If subdivision development occurs that is more sparsely developed than the average 7.6 single family residences per mile of newly created borough maintained road, in Knik RSA, or 16.4 single family residences per mile, in Fairview RSA, then either the roads will receive less maintenance or the mil rate will rise,(under the current funding procedure for borough road maintenance).

COMPARISON OF TAXES VERSUS ROAD MAINTENANCE FUNDING

Road Service Area	Miles of Borough Road	No. of Single Family Residences	Average * Single Family Residence	Road Service Area mil rate	RSA Taxes paid per SFR	State Revenue Sharing \$740/mile	Total Property Taxes	Total budget for RSA	Maintenance amount per mile
Knik	138.78	1,061	\$69,392	1.75	\$121	\$102,700	\$226,590	\$329,290	\$2,373
Fairview	39.55	657	\$98,637	1.00	\$98	\$29,270	\$84,955	\$114,225	\$2,888

* Average value includes both assessed value of home and assessed value of lot.

The level of funding within Fairview RSA and Knik RSA allow very few improvements. If funding for needed improvements is not available from the RSA's own account then at some point the project must become seriously enough needed that it becomes a borough priority for funding.

In contrast, Midway RSA, the most developed RSA within the borough has roughly the same amount of borough roads as Fairview RSA and a roughly equal mil rate (1.05). Midway RSA receives 45% more maintenance monies per mile than Fairview and 94% more than Knik RSA because of this increased "density". The extra monies allow Midway RSA to provide for routine improvements of their roads.

Recommendation:

- Identify and encourage development in areas where there are vacant lots and/or acreage with roads and/or utilities.

The difference in taxes and mil rates is probably not sufficient by itself to alter anyone's decision about where they would like to own a home or what type of neighborhood they would like to live in. However, it is worth noting that in areas with more sparsely populated subdivisions, homeowners are likely to either pay more taxes for road maintenance or receive less road maintenance or both. This could be considered part of the cost of living in a more rural environment.

Of interesting note is that the borough has been considering consolidating the 17 RSAs into fewer service areas. Proposals have been presented which consolidate the RSA's into one, three, or more service areas. No consolidation plan has been adopted by the borough assembly.

Traffic Safety

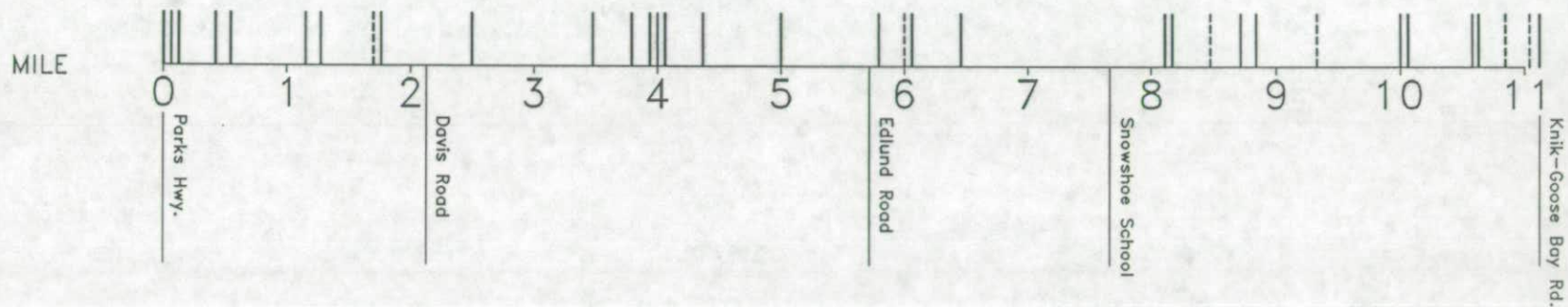
Annual Average Daily Traffic

The annual average daily traffic counts for state roads within the planning area are listed in the table on page 67. Overall traffic along the section of Knik-Goose Bay Road from the Parks Highway to Fairview Loop has increased approximately 28% from 1985 to 1994. Other streets for which traffic counts are available have maintained fairly consistent traffic volumes. The table excludes those measures which were taken using a different method giving inconsistent results.

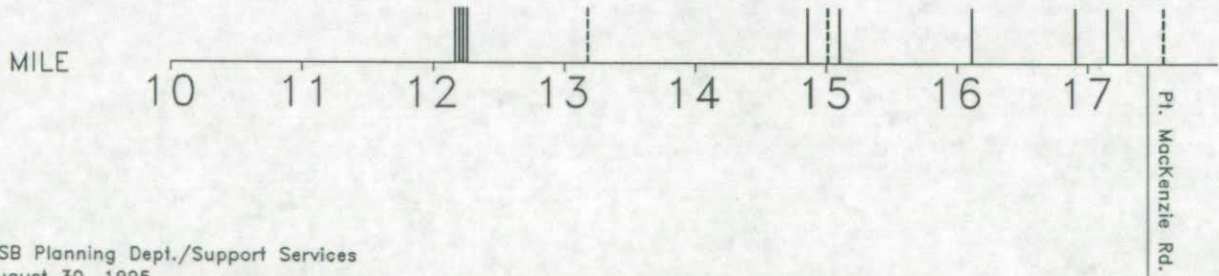
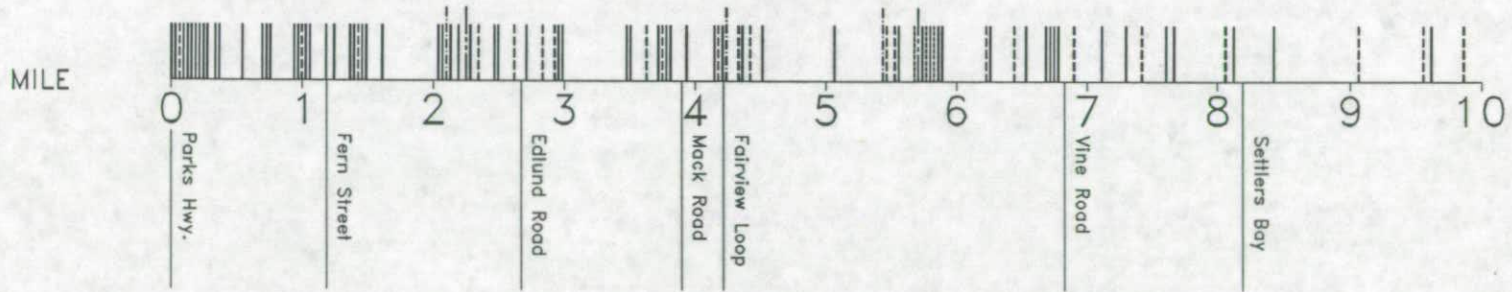
Traffic Accidents Within the Planning Area

The State Department of Transportation and Public Facilities (ADOTPF) keeps records of traffic accidents on state roads. Hollywood Road and Hayfield Road each had one accident during 1993 and 1994. The roads with the most accidents are Knik-Goose Bay Road and Fairview Loop Road. Traffic accident information for these two roads is summarized on the following table.

Fairview Loop Road Accidents 1993-1994



Knik-Goose Bay Road Accidents 1993-1994



- Fatalities
- - - Major Injury
- · · Minor Injury
- Non-Injury

MSB Planning Dept./Support Services
August 30, 1995

AVERAGE DAILY TRAFFIC FOR VARIOUS ROADS IN KNIK-FAIRVIEW PLANNING AREA

Figures in bold represent actual counts. Other numbers are interpolated or estimated by ADOTPF.

	1985 ADT	1986 ADT	1987 ADT	1988 ADT	1989 ADT	1990 ADT	1991 ADT	1992 ADT	1993 ADT	1994 ADT
Knik-Goose Bay Road Fern St. to Edlund Rd.	6525	6670	6186	6100	5204	5360	5560	6200	7228	8100
Edlund Rd. to Mack Rd.	5600	5770	5653	4806	4900	5040	5300	5998	6200	6900
Mack Rd. to Fairview Loop Rd.	4900	5050	4946	3194	3250	3380	5292	5900	6100	6846
Fairview Loop Rd. to Vine St.		3480	3412	2900	3317	3400	3400	3400	3765	4800
Vine St. to Settlers Bay Dr.		3100	3000	2860	2910	3000	2691	2700	2780	3620
Settlers Bay Dr. to Pt. MacKenzie Rd.				861	615	550	594	404	416	546
Fairview Loop Rd. Parks Hwy. to Davis Rd.	1700	1450	1390	1390	1390	1390	1390	1752	1750	1800
Davis Rd. to Edlund Rd.				1018	1030	1030	1226	1280	923	1000
Edlund Rd. to Snowshoe School	735	720	690	750	765	770	468	500	500	700
Snowshoe School to Knik-Goose Bay Rd.	1550	1500	1460	1383	1526	1530	1530	1444	1440	1500
Hollywood Boulevard Vine Rd. to landfill road		474	464	450	460	472	480	500	399	400
Vine Street Knik-Goose Bay Rd. to Hollywood Blvd.										940
Edlund Road Knik-Goose Bay Rd. to Fairview Loop Rd.							410	410	410	430

Street Classification System

A street classification system is used in transportation planning to describe and plan the function that roads are to perform within the road network. All roads provide two functions: **mobility**, or traffic movement, and **access** to adjacent property. One of the basic concepts of transportation planning is that generally, the greater amount of access, the less capable the road is to provide for mobility. It is important to maintain mobility in order to promote the transfer of goods and people across large areas. It is also important, and essential, to provide for basic access to an individual's property. Balancing the mobility/access equation is critical for a road to perform efficiently and effectively.

Within a transportation network it is desirable to have some roads favor through-traffic movements (mobility). In local neighborhoods it is desirable to discourage through traffic and encourage access to individual lots using lower traffic speeds. Traffic patterns sometimes emerge that conflict with the design of a road, as when residential streets become commonly used as short-cut or bypass and there is an increase in the volume and speed of traffic on an otherwise quiet and slow neighborhood street.

The objective of a functional classification system is to define what the overall purpose of a street or highway is intended to serve within the context of the total transportation system.

The level of service required to fulfill this function provides the basis for the design speed and geometric criteria for the roadway. Functional classifications are tied to design criteria that stipulate the right-of-way and roadway width, design speed, grade and turning radius, and number and distance of driveways, streets and/or access points.

The Matanuska-Susitna Borough uses road classifications which are defined in their Subdivision Construction Manual. Non-residential roads are classified as: Highways, Arterials, and Non-residential roads. Residential roads are classified as: Residential Collectors, Subcollectors, Streets, Frontage Access, Mountain Access, Pioneer Access, Single Lanes, and Alleys.

In the Subdivision Construction Manual non-residential roads are referenced to the American Association of State Highway and Transportation Officials (AASHTO) standards. These standards define highways as roadways that provide through-travel to destinations outside the area and normally feature partial or full access control. Travel speeds are 40 to 65 miles per hour. The Parks Highway is an example of a highway.

The arterial system interconnects with the highway system. Arterials handle moderate trip lengths at lower overall speeds. They provide cross-borough and intracity movement. Average running speeds range between 35 to 55 mile per hour. Access to the arterial system should be limited to collector roads. Generally arterials do not traverse neighborhoods. Right-of-way width is established at 100 feet plus slope easements.

Residential roads, as defined by the borough's manual, are either residential collectors, residential subcollectors, or residential streets. Residential streets are intended to carry the least amount of traffic at the lowest speeds. They provide access to abutting property and should be designed to serve only local traffic. Average daily traffic volumes should not exceed 200 vehicles per day. Minimum right-of-way width is 50 feet.

Residential subcollectors carry more traffic than residential streets. They provide access to abutting property but also move traffic from the residential streets to higher capacity streets. Average daily traffic volumes should not exceed 500 vehicles per day. Minimum right-of-way width is 60 feet.

Residential collectors carry the largest volumes of residential traffic at higher speeds. These streets carry traffic from one residential area to another or to other areas of the community. Residential collectors are unsuitable for providing direct access to abutting property, but when this restriction is not possible, any residential lots fronting on a collector should be at least 100 feet or greater. Minimum right-of-way width is 60 feet. Average daily traffic might range from 1000 to over 2000 vehicles per day. On-street parking is frequently prohibited on collectors.

The borough's Subdivision Construction Manual also provides for Pioneer and Mountain Access roads, when either topography or other circumstances dictate. Frontage roads and alleys are also allowed, where appropriate.

As part of the transportation planning process the planning team estimated the function the planning area roads would serve at the end of the 20 year planning period. The results are outlined in the table on the following page.

Recommendation:

- Widen and realign Fairview Loop and Knik-Goose Bay Road to increase the turning radius of the curves.

FUTURE CLASSIFICATIONS

Based upon the previous definitions, the Knik-Fairview Planning Team estimates the future functional classification of the roads to be as follows:

NAME	EXISTING CLASS	FUTURE FUNCTION
KNIK GOOSE BAY ROAD	ADOT: MAJ COLLECT	MAJ ARTERIAL
FAIRVIEW LOOP ROAD	ADOT: MINOR COLLECT	MIN ARTERIAL
HOLLYWOOD ROAD	ADOT: MINOR COLLECT	MIN ARTERIAL
VINE ROAD	ADOT: MINOR COLLECT	MIN ARTERIAL
EDLUND ROAD	ADOT: MINOR COLLECT	MAJ COLLECT
OLD MATANUSKA RD	ADOT: LOCAL	MAJ COLLECT
HAYFIELD ROAD	ADOT: LOCAL	MAJ COLLECT
PT MACKENZIE RD	MSB: MINOR ARTERIAL	MIN ARTERIAL
JOHNSON ROAD	MSB: RESIDENTIAL	MIN ARTERIAL
PALMER-WASILLA HWY EXT TO GLENWOOD	ADOT: NEW	MIN ARTERIAL
LEWIS LOOP	MSB: RESIDENTIAL	MAJ COLLECT
SETTLERS BAY ROAD	MSB: MINOR COLLECTOR	MAJ COLLECT
SUNSET, DAVIS, WELL SITE, LUPINE, CLAPP, FOOTHILL, BOGEL BLUFF, HALLIE, ROYAL LANE, HORIZON, CARMEL, KNIK KNACK MUD SHACK, ALIX	MSB: RESIDENTIAL	MAJ COLLECT

NAMES IN BOLD: STATE MAINTAINED ROADS

DEFINITIONS:

INTERSTATE: CORRIDOR MOVEMENT ACROSS STATE

ARTERIAL: CORRIDOR MOVEMENT ACROSS BOROUGH, LINK COLLECTORS

COLLECTORS: COLLECTS RESIDENTIAL TRAFFIC TO ARTERIALS

LOCAL: PROVIDES ACCESS TO LOTS

Trail System

An adequate infrastructure of trails is essential to the health and vitality of any community. Knik-Fairview, possibly more so than other areas, has specific needs for trails. The Knik area is a bastion of dogmushing and the Fairview area has a preponderance of equestrians. The planning area, like many regions within the borough, lacks an integrated trail system.

Currently, within the Knik-Fairview Area the only trail, other than those within road rights-of-way, that has a legal right-of-way along much of its length is the Iditarod Trail. The Iditarod Trail has been declared a national historic trail and is the site of the annual, internationally famous, Iditarod dogmushing race. There are numerous informal trails trespassing across private land and alongside roads throughout the planning area.

Development of legally established and protected trails is severely constrained by the lack of public lands or adequate rights-of-ways for trails. The planning area does have two separate enclaves of public land at opposite ends of the planning area: The Palmer Hay Flats State Game Refuge and the undeveloped relatively wet area of state and borough lands near the southwest portion of the planning area along the Iditarod Trail. The southern boundary of the planning area borders the Goose Bay State Game Refuge. The majority of the planning area is almost entirely private land.

Given the limited amount of public land within the greater portion of the Knik-Fairview Planning area, the most viable option for trails development within much of the area are pathways along roads within the existing road right-of-way. State administrative code 13 AAC 02.455 permits snowmobile or off-highway vehicle use on road right-of-way no closer than three feet from the nearest roadway edge. This same section of state code prohibits snowmobile or off-highway vehicle use of a sidewalk or location intended for pedestrian or other non-motorized traffic.

Knik-Goose Bay Road and Fairview Loop Road have informally created trails along their length. These trails are used mostly by off-road vehicles (primarily four wheelers and snowmachines) and mushers.

The Knik-Goose Bay Road is also a popular biking road because of the relatively low level of traffic, beautiful scenery, little development, and few intersections. A number of bicycling events and races are held on this road yearly. Yet despite its popularity the road has only minimal shoulder along most its length.

Recommendations:

- Separated paths or biking lanes should be created along Knik-Goose Bay Road and Fairview Loop Road.
- Separated paths should be constructed near schools providing safe access between the school site and more densely populated residential subdivisions.
- On roads with separated paths, motorized trail users should be encouraged to use the side of the road opposite the separated path.

Most recent local efforts concerning trail development and preservation within the Knik-Fairview Planning area has been in the southern portion. Dog mushing interests in the area, including groups such as the Iditarod Trailblazers, have been working to maintain and improve mushing trails. The Knik mushing community has settled in this region partly on the presumption of access to an adequate supply of suitable mushing trails.

The southern enclave of public lands is largely owned by the state and borough. Management of these lands is guided by the Willow Sub-Basin Area Plan which recommends developable land for disposal, and also recommends retention of existing mushing trails in public ownership. The Willow Sub-Basin Area Plan identifies several mushing trails in the area to be retained with a trail corridor width of 300 feet.

The planning team has worked in conjunction with mushers in the Knik area to identify the most important trails currently in existence and proposed or historical routes with high potential use and benefit. These trails are identified on the Knik-Fairview trails map.

Recommendations:

- The furtherance of trails should be encouraged in the Knik-Fairview Planning area.
- Trail users should obtain permission to use trails crossing private property.
- Trail easements reserving public access should be acquired through the subdivision process.
- The borough should seek to protect the use of the trails identified on the trails map.
- The platting process should include a review to determine the ability of existing commonly used trails to tie in with the proposed trail system, and encourage subdividers to do so.

By developing a legally established trails system some of the local conflicts resulting from trespass problems are likely to be alleviated.

Not all trail uses are compatible. While most trail users have not had any conflicts with other types of trail users, the trail surface for certain uses is incompatible with others. Repeated snowmachining and four-wheeling creates bumps in a more dramatic but similar way that automobiles create a washboard surface on a dirt road. Eventually, the trail becomes unusable by mushers, skiers and other non-motorized uses lacking any form of mechanical suspension.

Recommendations:

- The Borough Trails Committee should develop recommendations for managing trails to preserve sufficient trails in a manner compatible with mushing, skiing and other non-motorized uses.
- On roads with separated paths, motorized trail users should be encouraged to use the side of the road opposite the separated path.²

²See Trail Map pp 99

Air Transportation

There may be as many as nine airstrips scattered throughout the planning area. Only three airstrips have obtained an airspace determination from the Federal Aviation Authorities (FAA). Currently the only regulation that applies to the establishment of these smaller airstrips is that they must obtain an airspace determination. The airspace determination is an advisory determination from FAA regarding the safety of the proposed airstrip based solely on potential airspace conflicts with other air-traffic operations nearby. A negative airspace determination, a notice of objection, will not prevent the applicant from developing an airstrip since the determination is only advisory.

The Planning Team has expressed concern over the potential safety conflicts and increased noise resulting from these small uncontrolled airstrips.

Recommendation:

- Airstrips should be conditionally permitted throughout the Planning area.

PUBLIC FACILITIES/SERVICES

Goal

Ensure that public facilities and services provide for a high level of service in the areas of public health, safety and general welfare; education; cultural facilities; recreation; and utilities.

Very little public lands exist within the developed portion of the planning area. The majority of public lands within the planning area constitute the Palmer Hay Flats State Game Refuge, (PHFSGR) and Matanuska-Susitna Borough Hay Flats Recreation Area Special Land Use District. Approximately 20 square miles of the Planning area's 90 square miles consist of the PHFSGR. Another 10 square miles of both state and borough land exists in the southwestern portion of the planning area much of which is poorly drained land with poor development potential.

The Knik-Fairview area is a growing residential community and as such will have need for more public facilities including fire stations and schools.

Recommendations:

- Identify key public lands that should be reserved for important public purposes including access, fire stations, schools, solid waste transfer sites, recreation, etc.
- Prior to any future borough land disposals in the area, the borough should investigate the appropriateness of the land for public facility sites, and reserve the land if necessary for this purpose.

Overall, very little in the way of public facilities exist in the Knik-Fairview Planning area, Currently there exists a public safety building at mile 6.9 Knik-Goose Bay Road, the Knik Museum and two elementary schools.

Education

There are currently four schools which serve school age children in the planning area. Those schools are:

- Snowshoe Elementary School, located on Fairview Loop Road within the planning area
- Goose Bay Elementary School, located on Hollywood Boulevard near Vine street within the planning area
- Wasilla Middle School, located outside of the planning area
- Wasilla High School, located outside of the planning area

No new schools are projected to be built in the planning area in the near future, however there is an elementary school to be built somewhere in the Meadow Lakes area and a middle school to be built northeast of Wasilla Middle School. Both of these new schools will serve some of

the region now served by Goose Bay Elementary School and Wasilla Middle School thus reducing the enrollment at already established schools.

Recommendation:

- Encourage the construction of new school facilities and or expansion of existing facilities within the Knik-Fairview Planning area as needed.

Goose Bay Elementary School

The Goose Bay Elementary School is located on Hollywood Road, near the intersection with Vine Road. The school opened in 1992. During the 1992-1994 school term the school offered Kindergarten through Grade 5 instruction. Currently the school offers Kindergarten through Grade 6 instruction. The school offers regular instruction and four special education programs: half day pre-school, Grade 1 handicapped, Grade 2 handicapped, and middle grades (3-5) handicapped.

Besides the regular classrooms, there is a library, office, faculty lounge with kitchenette, a gym/cafeteria, janitorial room, and school kitchen. No cooking is done at the facility. The 50,000 square foot building is designed for 500 enrollment capacity. Current enrollment is 460 students (92% capacity) and there are 47 classified and certified employees.

The school building is located on a 40 acre site. It has on-site well and septic systems and is connected to natural gas. The building is in good condition with a remaining useful life of at least 20 years. According to the school principal, there is a need for additional playground equipment, especially with the addition of the higher grade. Estimated cost is \$15,000-\$20,000.

The school principal also noted the need to upgrade the roads accessing the school for school bus safety. Vine Road extension/upgrade/paving to the Parks Highway is needed, as is the upgrade and paving of Hollywood Road. The Planning Team is particularly concerned about the safety of the section of Vine Road south of Hollywood Boulevard to Knik-Goose Bay Road. This section of road has a relatively small road surface with significant drop offs on each side of the road. Furthermore, the road experiences severe "washboarding" to the extent that control is sometimes difficult at moderate speeds.

Recommendation:

- The portion of Vine Road south of Hollywood Boulevard should be redesigned to alleviate the significant safety hazard that exists as a result of its washboard surface and steep dropoffs alongside the road. The redesign should include guardrails along the portions of road that have a steep dropoff beyond the shoulder.

Members of the planning team also expressed concern over the condition of Hollywood Boulevard upon which is located Goose Bay Elementary School.

Recommendation:

- The condition of Hollywood Boulevard needs to be improved and the potentially dangerous curves need to be redesigned.

The 1996 state legislature appropriated \$1,300,000 for upgrade and paving of Hollywood Road and \$1,700,000 for the upgrade and paving of Vine Road. It is important that these upgrades include the above design recommendations. The Planning Team also desires that the upgrades include separated paths for Goose Bay Elementary schoolchildren.

GOOSE BAY ELEMENTARY SCHOOL
(Building Design Capacity 500)

YEAR	Enrollment
October 1990	0
October 1991	0
October 1992	340
October 1993	378
October 1994	458.5
October 1995	460

Goose Bay Elementary School Current Enrollment

Kindergarten	72
1st Grade	79
2nd Grade	65
3rd Grade	57
4th Grade	72
5th Grade	58
6th Grade	57

Snowshoe Elementary School

The Snowshoe Elementary School is located on Fairview Loop Road, southwest of Edlund Road and northeast of Harness Drive. The two-story school was constructed in 1979. Instruction is offered in Kindergarten through Grade 5. Besides the regular instruction, there are special programs in Special Education-Resource, Special Education-Self Contained Chapter 1, Indian Education, Migrant Education, Bilingual, Speech, Occupational and Physical Therapy, Music, and Physical Education.

Besides the regular classrooms, there is a computer lab, library, music room, gym, staff lounge, office, kitchen, and janitorial room. No cooking is done at the facility.

The 50,000 square foot building is designed for 500 enrollment capacity. Current enrollment is 386 (77% capacity) and there are 35.5 classified and certified employees.

The building is located on a 20 acre site. There is one portable on the site. The school building is in good condition with a remaining useful life of at least 20 years. The school has on-site water and septic systems and is connected to natural gas.

SNOWSHOE ELEMENTARY SCHOOL
(Building Design Capacity 500)

YEAR	Enrollment
October 1990	547
October 1991	548
October 1992	348 (first year Goose Bay Elementary was operational)
October 1993	364
October 1994	423
October 1995	386

Snowshoe Elementary School Current Enrollment

Kindergarten	31
1st Grade	57
2nd Grade	55
3rd Grade	54
4th Grade	66
5th Grade	66
6th Grade	57

Higher Education

Higher education for most of the students in the Knik-Fairview planning area is at the Wasilla Middle School and the Wasilla High School.

Wasilla Middle School

The Wasilla Middle School is located on Bogard Road north of the post office in Wasilla. The Wasilla Middle School has a design capacity of 800 students. Current capacity is 640 students (80%). The School District is proposing to construct a new middle school somewhere within the "core area" of the borough north of the Seward Meridian/Palmer Wasilla Highway intersection. Once the new school is completed it will draw some students from the same service area as are currently within Wasilla Middle School's service area hence reducing enrollment.

The school is built on a 22 acre site. At least one quarter of the site is taken up by the Brett Memorial Ice Arena and associated parking/access amenities. Also a wooded portion of the site along Cruse Street is marked by steep topography.

The School District recently completed an addition to the school to bring the enrollment capacity to 800 students.

WASILLA MIDDLE SCHOOL (Current Building Design Capacity 800)

YEAR	Enrollment
October 1990	583
October 1991	649
October 1992	646
October 1993	693
October 1994	570
October 1995	640

Wasilla Middle School Current Enrollment

6th Grade	150
7th Grade	245
8th Grade	245

Wasilla High School

The senior high school is located on a 61.9 acre site across Bogard Road from the Wasilla Middle School. The school was originally built in 1976. In 1978, a small engine shop was added, and the school was further enlarged in 1980 with the construction of a two-story classroom addition and the swimming pool. The facility has a remaining useful life of at least 20 years.

In addition to the school itself, the site includes parking areas, a playing field in front of the school, a field for football and track out back, a cross country running and ski trail and an outdoor hockey rink in the parking lot area. The school also uses the adjacent Fritzler ball fields.

WASILLA HIGH SCHOOL
(Building Design Capacity 1200)

Year	Enrollment
October 1990	933
October 1991	833
October 1992	789
October 1993	749
October 1994	779
October 1995	785

Wasilla High School Current Enrollment

9th Grade	259
10th Grade	208
11th Grade	176
12th Grade	142

Public Safety

Knik Public Safety Building

The Knik Public Safety building (Station 62) is one of five fire stations included in the Wasilla/Lakes Fire Service Area, FSA #130. The building is located on Knik-Goose Bay Road at Mile 6.9 on Lot 1, Block 3, Unit 1 of Settlers Bay Subdivision. The Knik Public Safety Building is the only public safety facility located in the planning area. The .92 acre property was acquired through donation from Settlers Bay Properties, Inc. in June 1983. The 1,280 square foot building was built that same year. In 1989, a temporary 960 square foot portable classroom unit was moved on the site. It was removed in 1991.

The public safety building is a single story, wood-frame facility. It consists of an equipment room with two apparatus bays. The building is in good condition and has a remaining useful life of more than twenty years. Immediately in front of the building is an approximately 4,000 square foot gravel parking area.

The public safety building has undergone recent improvements. A septic system and leach field were installed. The older building was remodeled to provide a classroom and meeting room and a restroom was added. Also, a new 1,440 square foot building was completed in 1995. This new building houses the fire fighting and emergency response apparatus.

The building is ideal for holding public meetings because of its location and design as a classroom/meeting room. A well designed facility for public meetings has been needed in the planning area. The building is centrally located within the planning area and easy to locate on a major road.

Recommendation:

- The Knik Public Safety Building should remain available for public meetings when not in conflict with its primary purpose as a fire/emergency station.

The Wasilla/Lakes Fire Service Area covers an area of 125.33 square miles, including the city of Wasilla. Fire service areas are established by the Matanuska-Susitna Borough to provide for fire protection. The Wasilla Fire Service Area was originally formed in 1966 and its boundaries were coincident with the city of Wasilla's corporate limits. The Wasilla Fire Service Area's boundaries were expanded in 1977, 1980, 1981, 1983, and 1984. The 1983 annexation was the largest expansion and encompassed the Knik area. The Wasilla and Lakes Fire Service Areas merged to form the Wasilla/Lakes Fire Service Area, #130 in June 1991.

Prior to the borough's assumption of non-areawide fire protection powers, fire fighting for the area was provided by an independent volunteer group which operated out of the Wasilla Public Safety Building. Today, fire service is provided by a mix of borough employees and volunteers. A Wasilla fire chief is based at the Cottonwood Public Safety Building. Two paid personnel, a maintenance mechanic and mechanic's helper operate out of the Wasilla Public Safety Building. Approximately 25 volunteer firemen operate out of the Wasilla Public Safety Building. Ten borough employees, including Emergency Medical Services (EMS), are based at the Cottonwood Public Safety Building.

Each volunteer fireman completes 350 to 400 hours of certified training per year through the state and through academic courses at the University of Alaska. The Matanuska-Susitna Borough pays for this training. In 1989 the borough paid for about 1,500 persons to attend firefighting related college courses.

Equipment at the public safety building includes:

<u>Apparatus</u>	<u>Year and Model</u>	<u>Pumping Capacity</u>	<u>Holding Capacity</u>
Engine	1985 Grumman	1,250 g.p.m.	750 gallons
Tanker	1985 Grumman	1,250 g.p.m.	2,000 gallons
CV-3	1983 Ford Pickup		
Support 61	1987 Chev. Crew 4X4		

The city of Wasilla has an Insurance Services Office (ISO) rating of 6, while the remainder of the fire service area has an ISO rating of 8.

There have been no fire fatalities in the Wasilla/Lakes Fire Service Area in the past nine years.

Wasilla/Lakes Fire Service Area
Fire Protection Incidents by Year

<u>Year</u>	<u>Structure</u>	<u>Vehicle</u>	<u>Other</u>	<u>Total</u>
1989	70	31	27	128
1990	55	22	34	111
1991	48	26	72	146

In 1993 there were 330 total incidents: 94 fire or explosions, 1 over pressure rupture, 114 rescue calls, 18 hazardous condition, standby, 3 service calls, 76 good intention calls, 18 false calls, and 6 other situations found.

Recently the Point MacKenzie Road area was recently annexed into this fire service area.

Cultural/Recreational Facilities

The Knik Museum

The building now housing the Knik Museum and Sled Dog Musers Hall of Fame was a pool hall during Knik's heyday and later was used as a roadhouse. It is one of the two remaining buildings in the original townsite of "Sunny Knik." The other is the near by Bjorn cabin, also restored. Both buildings are owned by the Matanuska-Susitna Borough and leased to the Knik-Wasilla-Willow Creek Historical Society.

The Sled Dog Musers Hall of Fame, on the second floor of the Knik Museum, houses a unique collection of mushers' portraits painted by artist, Evaline Rowsey, numerous photos of Iditarod Trail racers and their dogs on the trail, sleds and other equipment. The Knik Museum contains a large selection of furniture, dishes, clothing and other artifacts.

The Museum is only open in the summer months. The building lacks any heating source and the current driveway is too steep to be negotiated by tour buses. The parking area is also minimal with parking for approximately six vehicles and no parking for tour buses. The museum also does not meet the handicapped access requirements of the Federal ADA law.

Recommendation:

- The driveway and parking area should be redesigned to allow tour bus access and parking for the Knik Museum.
- The Knik Museum should be upgraded to meet Federal ADA Standards.

Fish Creek Facilities

One of the most heavily impacted and more environmentally sensitive areas within the planning area is Fish Creek where it crosses beneath the Knik-Goose Bay Road. The area is an extremely popular dipnetting location during summer months. The area lacks any facilities to minimize impacts on the natural environment such as restroom facilities. The stream bank is heavily trampled during the summer dipnetting times. Safety considerations include the lack of adequate parking.

Recommendation:

- Sufficient off street parking and restroom facilities should be provided at Fish Creek, at least seasonally, to meet the present demand and alleviate safety and environmental hazards.

Water and Sewer Services

It is unlikely that the City of Wasilla will extend water and sewer facilities to the Knik-Fairview Planning area any time within the 20 year projections of this plan or any time soon thereafter. Installation of community water and sewer systems will more likely be a smaller, developer engineered and installed system.

Several problems exist with extending the City of Wasilla sewer and/or water service into the Fairview area.

One significant problem is the current pattern of low density development which precludes the extension of services from being economically feasible. Public works officials in the City of Wasilla have indicated that a built up subdivision of 20,000 square foot lots or smaller is necessary to make any extension of services economically feasible. A subdivider must provide **both** community water **and** sewer to receive DEC approval for lots smaller than 20,000 square foot.

Recommendation:

- Only encourage higher densities, (than a one full acre minimum lot size), where soil conditions and topography are better suited for septic tank absorption fields or community water and sewer systems are provided.

Although the previous recommendation was originally promoted to protect groundwater it also helps increase the possibility of developing a public water and sewer system in the area, by developing subdivisions with lots as small as 7,200 square feet and developing some of the infrastructure needed for the public systems.

A common pattern in the development of rural, small town public water and sewer utilities is for them to evolve from smaller community water and sewer systems which enable the necessary densities to develop and have some of the necessary infrastructure installed.

Other problems exist in the development of a large public sewer system. The planning area closest to a City of Wasilla water or sewer extension is over a mile away. The areas between the planning area and the terminus of Wasilla's water and sewer system would have to develop sufficient densities prior to connection of these areas. Only a small portion of the City of Wasilla is connected to either city water or sewer, it is unlikely that the city would promote the extension of water and sewer service beyond their boundaries with such a large portion of their population still unserved.

A third problem is that the slope of the landscape is south towards the Knik Arm rather than north towards the City of Wasilla, requiring pump stations to be installed. If sufficient densities existed for the development of community sewer facilities in the Planning area it is likely that it would be cheaper to develop a new sewage lagoon to the south rather than pump the effluent north to the current city sewage lagoon.

The cumulative effect of these three problems is that city water and sewer are not likely to be extended to the planning area during the twenty year planning period.

Although, traditional extension of city utilities is unlikely, this does not prevent the development of community water and sewer systems. Currently there are several subdivisions in the planning area which rely on community water systems. The subdivisions which currently have community water service are Settlers Bay, Northern Lights Terrace, Victoria Estates, Bluff View Acres and Snowshoe West. The largest community water system is in the Settlers Bay subdivision. Two wells serve a total of 64 households. No subdivisions within the Knik/Fairview planning area have community sewer systems and few subdivisions within the borough have this feature.

APPENDIX

Matanuska-Susitna Borough Zoning Codes: Title 17

The Knik/Fairview area is subject to only those zoning regulations which apply to the borough at large except in several small subregions. Primarily these regulations encompass setback requirements, flood regulation and regulation of certain commercial uses and higher density residential uses.

Setback Regulations

The setback requirements are as follows:

- | | |
|--|---------|
| • distance from public right of way or access easement | 25 feet |
| • distance from side and rear lot lines | 10 feet |
| • distance from water body or water course | 75 feet |

Additionally no part of any subsurface sewage disposal system may be closer than one hundred feet from any body of water or water course.

Flood Regulations

The flood regulations require that developers or owners of structures within designated flood hazard areas obtain flood insurance and follow specific design criteria intended to minimize flood damage. Very little of the Knik/Fairview area is within designated flood hazard areas. Only the northern half of the planning area has been evaluated for flood hazard. Within the studied area only the areas immediately adjacent to Lucille Creek, Wasilla Creek and Cottonwood Creek are designated flood hazard areas.

Regulated Uses

Activities subject to additional land use regulations and permitting include:

- commercial auto salvage yards
- commercial junkyards
- mobile home parks
- establishments that sell liquor
- mobile home parks
- residential planned unit developments

Residential Land Use Districts

Two subdivisions within the Knik-Fairview planning area (Dawn Lake Estates and Jackfish Landing) have adopted the Residential Land Use District classification and supporting regulations. Residential Land Use District regulations allow only residential, accessory structure uses and

home occupations. Conditionally permitted uses also include:

- Churches and church related uses
- Hospitals, sanitariums, convalescent centers, nursing homes, resthomes
- Natural resource extraction
- Plant nurseries and green houses
- Public lands and institutional
- Substation electric utilities
- Neighborhood commercial use

Applications for designation as a Residential Land Use District require that at least 60% of the land owners within the area to be designated sign a petition favoring the application.

Matanuska-Susitna Borough Subdivision Regulations: Title 16

Lot size is regulated through Title 16 of the Matanuska-Susitna Borough Code and is dependant on the type of water and sewer service proposed for the subdivision. The borough's minimum lot size requirements are the same as the State's Department of Environmental Conservation (ADEC), and are as follows:

- 40,000 square feet minimum, including at least 20,000 square feet of contiguous area meeting DEC requirements for a septic tank soil absorption field for lots not serviced by an approved community water or sewer system.
- 20,000 square feet minimum for lots serviced by either an approved community water or sewer system.
- 7,200 square feet minimum for lots serviced by both an approved community water system and an approved community septic system.

The Department of Environmental Conservation determines through submitted soil logs and samples whether the lots meet the 20,000 square feet of contiguous area with required soil characteristics for installation of septic soil absorption field.

Environmental Protection, Matanuska-Susitna Borough Code (MSBC) Chapter 8.30

Clean Air, Authority and Standards

Matanuska Susitna Borough is within the South Central Clean Air Authority. MSBC Chapter 8.30, Clean Air Standards, apply standards to ambient air for suspended particulates, sulphur oxides, carbon monoxide, photochemical oxidants, nitrogen dioxides, reduced sulphur compounds.

Open burning is permissible unless prohibited by an air quality advisory. Open burning cannot include black smoke or odors. Burning of oily wastes, asphalts and tars is prohibited unless permitted by the Authority. Incinerators, tepee burners, and air curtain incinerators are regulated for particulate matter emissions. Industrial processes, fuel burning equipment and pulp mills are regulated as to limits on particulate matters and sulphur compounds.

Although the Matanuska-Susitna Borough does have regulations pertaining to emissions it lacks the staff, experience and monitoring equipment to be able to enforce and monitor these regulations. Hence the regulations are only likely to be enforced except possibly with the assistance and cooperation of the Department of Environmental Conservation.

Animal Control, MSB Title 24

All dogs within the borough over the age of six months are required to be registered and vaccinated against rabies. Title 24 defines a kennel as any premises containing more than five dogs over the age of six months. All kennels must be registered and kennel operators are required to provide the borough with current registration information for all dogs within the kennel. Kennels are required to be maintained and operated so as not to be an annoyance interfering with sleep, work or reasonable right to peace.

Title 24 also requires that animals be kept in a maintained in a sanitary area and that the animals themselves be humanely treated. Animals may not be injured or killed unless the act is committed in conformity with applicable federal state or borough law.

Most serious dog mushers adhere to these rules but the court interpretation of an annoyance has been conservative. in favor of the kennel owners, specifically in regards to noise.

MSB Coastal Management Plan

The Knik-Fairview comprehensive plan must be consistent with the Borough's Coastal Management Plan and the State of Alaska's Coastal Management Program. In addition to the Borough's Coastal Management Plan, adopted 1984, the State of Alaska has standards that have the force and effect of law. Title 6, Chapter 80 of the Alaska Administrative Code applies to coastal resource districts--of which the Matanuska Susitna Borough is designated-- and to state agencies. There are twelve land and water uses and activities in the coastal areas that have state minimum standards.

Within the Matanuska-Susitna Borough district all uses and activities that are dependent upon coastal access or that would affect coastal habitats and processes, coastal air, land and water quality, historical and recreational values are subject to Title 6 and the Matanuska-Susitna Borough Coastal Management Plan. These include all residential, commercial, and industrial developments requiring the application of Borough Code Title 15 (Planning), Title 16 (Subdivisions), and Title 17 (Zoning).

The coastal area is characterized by extensive tidal flats and low-level vegetated bluffs. There are no exposed high energy coasts, or barrier islands and lagoons. Rocky islands and sea cliffs are replaced by vegetated bluffs in the MSB district plan.

Coastal Development Standard

State Minimum Standard

In planning for and approving developments in coastal areas highest priority will be given to water-dependent uses; secondary priority to water-related; lowest priority to uses that are neither water-dependent nor water-related. Water dependent means a use which can be carried out only on, in, or adjacent to water areas because the use requires access to the water body. Water related means a use which is not directly dependent upon access but which provides goods or services that are directly associated with water-dependence and which if not located adjacent to the water would result in a public loss of quality in the goods or service.

Placement of structures and the discharge of fill or dredge material into coastal waters must comply with Title 33, Code of Federal Regulations.

Borough Standard

Uses which are subject to the program's rules are industrial and port development, commercial development, residential development including state land disposals, dredging and filling. Policies which are applied to these uses include the State minimum standards as listed above and the following:

- Dredging and filling will not be allowed in tide flats, wetlands, submerged land, water bodies important for migration and spawning or rearing of anadromous or resident fish unless no feasible alternative exists.
- Development must be sensitive to the ecosystem and minimize adverse impacts on the ecosystem.
- Development must preserve natural and cultural features. Public access to these shall be preserved and maintained, and where appropriate, increased.
- Physical conditions (soil characteristics, slopes, geological features, surface and subsurface drainage, watertables, floodplains, etc.) must be taken into consideration when planning development.
- Residential coastal development must include efforts to minimize its impact by consolidating development. Community open space will be identified and planned for.
- Subdivisions outside the road-served area must maintain existing fish and wildlife uses to the greatest extent possible.
- All subdivisions must provide feasible access (includes legal and physical), reasonable access to energy resources for individual heating purposes, reasonable access to suitable supply of water, environmental suitability for sewage and garbage, reasonable use and access to public lands adjoining state land disposals. The state is exempted from providing physical access in certain circumstances.
- Commercial, industrial, and port development must include: minimal disturbance to anadromous fish streams and alteration of shoreline, tide flats, and wetlands. Industrial users must minimize negative aesthetic impacts and enhance positive visual aspects and provide recreational opportunities for viewing positive aspects. Design criteria and performance standards will be required to maintain high aesthetic appeal. Preference will be given to uses which promote physical and visual access to the shoreline.

Geophysical Hazard Standard

State Minimum Standard

Development may not be approved in identified known geophysical hazard areas until siting, design, and instruction measures for minimizing property damage and protection against loss of life is provided.

Borough Standard

Developments in the following areas will not be approved until siting, design, and construction measures for minimizing property damage and protecting against loss of life have been provided: Knik/Matanuska River floodplains, Susitna River and Little Susitna River floodplains, Point MacKenzie vegetated bluffs and coastlines. Development will be precluded in rapidly eroding, slide prone, or geologically unstable shorelines. Any development proposed for these areas must be based upon geotechnical investigation attesting to the safety of the area or engineering practices that alleviate or mitigate the hazard. Surface modifications that would induce excessive erosion, undermine the support of nearby land or unnecessarily scar the land will be limited.

Recreation Standard

State Minimum Standard

Coastal districts must provide for recreational and tourist needs by designating areas for recreational use. Minimum criteria for areas are: they receive significant use or are a major tourist attraction, or has potential for high quality recreational use. Districts must also give high priority to maintaining public access to coastal waters.

Borough Standard

Within the Knik-Fairview planning area the following areas have been designated recreational areas: Palmer Hay Flats State Game Refuge, Goose Bay State Game Refuge, and Iditarod Trail. Besides public access to coastal waters, the borough will also give priority to maintaining and increasing public access to rivers, lakes, streams, and uplands for fishing, hunting, and scenic viewing. Priority will be given to multi-use trails. Areas having potential for high quality recreational use because of physical, biological, cultural, or historic features will be given priority.

Energy Facilities Standard

State Minimum Standard

Coastal districts must identify suitable sites for energy facilities based upon following standards:

- Minimize environmental and social effects while satisfying industrial requirements.

- Site compatible with existing and subsequent adjacent uses and community needs.
- Consolidate facilities, consider concurrent use of facilities.
- Cooperate with landowners, developers, federal agencies.
- Sufficient acreage to allow for expansion.
- Site where existing facilities are capable of satisfying industrial requirements.
- Select harbors with least exposure to reefs, shoals, ice, etc.
- Encourage use of vessel traffic control and collision avoidance systems.
- Site where development will require minimum site clearing, dredging, and construction in protective habitats.
- Site facilities to minimize probability of spills/contamination of fishing, spawning grounds, etc. Site to allow free passage of fish and wildlife. Site facilities in areas of least biological productivity. Site facilities where airborne emissions can be dispersed.
- Select sites designated for industrial purposes and where industrial traffic is minimized.
- Select sites where vessel movements will not overcrowd harbors or interfere with fishing operations.

Borough Standard

Facilities must be developed and operated to minimize impacts on fish and wildlife habitats, ensure fish passage, minimize alteration of stream flows. Developers will provide studies and plans in sufficient detail for planning purposes.

Transportation and Utilities Standard

State Minimum Standard

Siting, design, and construction of transportation and utility routes should be compatible with district plans. Transportation and utility routes and facilities must be sited inland, unless no alternative inland route is feasible.

Borough Standard

Transportation and utility design and construction will minimize alteration of wildlife habitat, watercourses, wetlands, aesthetic and recreational resources. Maintain natural drainages and viewshed protection. Maintain high aesthetic appeal and prevent unsightly incompatible development. Consolidate utility corridors.

Fish and Seafood Processing Standard

There are currently no commercial fish processing facilities within the MSB coastal area, however the borough retains the option to designate those coastal areas suitable for commercial fishing and seafood processing facilities.

State Minimum Standard

District will identify and designate areas suitable for location and development of commercial fishing and seafood processing.

Timber Harvesting and Processing Standard

State Minimum Standard

Adopts the Forest Resources and Practices Act, AS 41.17, its regulations and procedures as part of state coastal management program.

Borough Standard

Timber harvest activities will minimize adverse environmental impacts on fish and wildlife; minimize sedimentation, erosion, and interference with drainage; minimize conflicts with recreational uses. Aid preparation of land for agricultural use. Mitigation plans required for scenic viewshed protection, protect riverbank and shorelines from adverse visual impacts. Sufficiently large acres of land for viable, sustainable yield and long-term management will be provided for.

Mining and Mineral Processing Standard

State Minimum Standard

Mining and mineral processing must be compatible with adjacent uses, statewide and national needs, and district plans. Sand and gravel may only be extracted from coastal waters, intertidal areas, spits, to meet public need when no feasible upland alternative exists.

Borough Standard

Gravel extraction will be consolidated where feasible. Minimize degradation of fish and wildlife, air and water quality, and recreational values. Reclamation plans are required. Gravel extraction parcels subject to Ordinance 74-52 which states that borough land 40+ acres that are 40% Class II and III soils will be classified agriculture. Access to viable mining and mineral processing will be provided for.

Subsistence Standard

State Minimum Standard

Assure opportunities for subsistence usage of coastal areas and resources. Identify areas of subsistence use of coastal resources. Identify zones where subsistence use has priority over nonsubsistence uses. Before any potentially conflicting uses can occur in zones, a study of

adverse impacts must be done. Migratory fish and game resources must have compatible habitat management plans.

Agriculture Standard

Borough Standard

Agriculture will practice sound soil and water conservation principles which minimize adverse impacts on air, land and water quality, fish and wildlife habitats, and recreational values.

Coastal Habitats Standard

State Minimum Standard

Regulations apply to offshore areas, estuaries, wetlands and tideflats, rocky islands and sea cliffs, barrier islands and lagoons, exposed high energy coasts, rivers, streams, and lakes, important upland habitat. Habitats in these areas must be managed to enhance biological, physical, and chemical characteristics of the habitat to support living resources. Specific habitats will be managed according to specific standards in order to protect the natural systems, water quality, water flow, and wildlife habitats.

Borough Standard

Borough regulations apply to offshore areas and estuaries, wetlands and tideflats, vegetated bluffs, rivers, lakes and streams including all major anadromous drainages up to the 1000 foot elevation. Width of this extended area is the width of the water course and 200 feet each side. Developments must maintain a 75 foot setback from high water and sewerage disposal system must set back 100 feet from any water course.

Upland habitats will be managed to maintain productivity, natural drainage, vegetative cover, prevent erosion, provide for open space, scenic and recreational values. Activities in wetlands will maintain natural drainages and wetland productivity. Mitigation measures are required prior to developments along river, lakes and streams including replacing vegetation.

Air, Land And Water Quality Standard

State Minimum Standard

Statutes pertaining to regulations and procedures of the Alaska Department of Environmental Conservation are incorporated into state coastal management program.

Borough Standard

Land clearing, grading, filling, and alteration of drainages will be minimized. Revegetation is required within one year to deter erosion.

Historic, Prehistoric, and Archeological Standard

State Minimum Standard

Identify areas which are important to national, state and local history or prehistory.

Borough Standard

Developments required to meet Historic Preservation Survey (1981).

Matanuska-Susitna Borough Comprehensive Development Plan

While not commonly referred to because of its age, the recommendations of the 1971 Comprehensive Development Plan are still in effect and most recommendations are still sound policy decisions today.

The Matanuska-Susitna Borough Comprehensive Plan does not have recommendations specific to the Knik/Fairview region other than maps depicting the area to be developed for recreation and rural residential development.

The 1984 adopted Public Facilities Element of the Borough Comprehensive Development Plan makes specific findings and recommendations

Willow Sub-Basin Area Plan

The entire Knik-Fairview planning area is within the Willow Sub-Basin Area Plan. This plan was adopted by the Matanuska-Susitna Borough on February 24, 1982, by Resolution 82-17 and by the Commissioner of the Alaska Department of Natural Resources on Sept. 28, 1982. The Willow Sub-Basin Area Plan is a land use plan for State and borough lands located in the hydrologic drainage basin of the lower Susitna River, an area of approximately one million acres.

Once the plan was adopted by the state and borough, it became policy for the management of State and borough lands, including land disposal, classifications, timber sales, road building, mineral leasing, and all other actions on public lands. Changes can be made through amendments by the Alaska Legislature for state lands and by the Matanuska-Susitna Borough for borough lands.

The plan divides the million acre area into twenty-five management units and applies land use designations or land use recommendations to each unit indicating how the public lands are to be managed. Each management unit has a primary land use designation/recommendation and a secondary designation/ recommendation. Secondary designations are permitted when their occurrence will not adversely affect the objectives of the primary designations. The Knik/Fairview planning is within, or contiguous to, four management units: Goose Bay, Knik, Wasilla, and Palmer Hay Flats.

The two management units designated in the Willow Sub-Basin Area Plan that are within the Knik-Fairview planning area are the Knik and the Wasilla management units. These units are predominately private and borough owned lands. The Willow Sub-Basin Area Plan makes general recommendations, not specific, land use designations for the units. The Willow Sub-Basin Area Plan does not regulate private land; therefore the recommendations are intended to indicate recommended development patterns. Public lands will be managed to be consistent with the recommended land uses.

Knik Management Unit

The Knik Management Unit is a large unit that includes lands from the Knik Arm to beyond Stephan and Sevenmile Lakes and north to Lake Marion and Threemile Lake. The unit extends beyond the Knik-Fairview planning area.

The management intent for the Knik Management Unit is to:

- Maintain the existing low density residential settlement pattern.
- Small farms are compatible with the low density residential land pattern and should be encouraged on the good agricultural lands.
- Public lands between Goose Creek and Fish Creek (both anadromous fish streams) will be managed to provide long term low density buffers separating the higher intensity uses in Wasilla and Point MacKenzie. The seven state parcels near these streams will be retained in public ownership and managed for habitat, recreation, and watershed values.
- Fish Creek, Goose Creek, and the related wetland system should be maintained by public land buffers.
- Lands outside the Goose/Fish Creek buffer should be made available for low density residential use.
- The integrity of the Iditarod Trails should be maintained.
- Existing mushing trails should be maintained in public ownership.

The recommended primary land uses are settlement, recreation, and small farms. Joint primary uses means that none of the uses dominate in priority over the others. Secondary uses are fish and wildlife (stream buffers), and forestry (personal use).

The recreation sites the plan recommends are: Sevenmile Lake (contiguous to the planning area), Fish Creek, Threemile Lake, Lucy Lake/Cottonwood Creek, Girl Scout Camp, Knik Center, and Knik Lake Public Access.

The trails recommended in the plan are: Iditarod Trail, Big Lake to Knik Lake Loop Trail, Iditarod Trail Connector, and the Fish Creek Trail.

Wasilla Management Unit

The Wasilla Management Unit lies north of the Knik Management Unit. It includes Big Lake,

the City of Wasilla, the borough's core area to Trunk Road, and north to the Wasilla/Fishhook and Palmer/Fishhook intersection. The Knik-Fairview planning area is located in the south, southeast section of the unit.

The management intent of the unit is to:

- Encourage settlement consistent with the Sub-Basin plan and the City of Wasilla's Comprehensive Plan.
- Encourage continued use of the unit as a moose harvest area, especially the "Golden Triangle."
- Maintain the water quality and quantity of the anadromous fish streams.
- Maintain in public ownership all publicly owned recreation sites and trails.
- Where private land abuts the Little Susitna River the state will purchase land for public access. Where public land abuts the river, a publicly owned buffer will be retained.
- Encourage agriculture development and existing farms to remain in use.
- Public lands adjacent to the Parks Highway will be managed to be consistent with the recommendations in the "Scenic Resources Along the Parks Highway" report.

The recommended primary land uses include settlement, small farm agriculture, commercial agriculture, and recreation. Secondary land uses are forestry (personal use) and Parks Highway scenic areas.

The Threemile Lake recreation site recommended by the Willow Sub-Basin Area Plan is in the Wasilla Management Unit and also located within the Knik-Fairview planning area. Trails recommended in the plan that are within the Knik-Fairview planning area are the Big Lake to Knik Loop Trail and the Iditarod Trail.

The Willow Sub-Basin Area Plan addresses potential resource development in the entire sub-basin. The plan left open to mineral exploration and development the subsurface resources on state lands, except for those lands sold for residential and agriculture purposes. All Native corporation lands had transferred both the surface and subsurface rights, and these remain open. The only areas closed to coal prospecting are those areas recommended for recreation sites.

Within the Knik-Fairview planning area, the plan noted that most of the area has limited forest management potential, mostly suitable for personal use harvest, existing small lot private ownership, and various capability forest lands. There are two areas of moderate forest management potential, located west of Sevenmile Lake, and south of Goose Creek. These areas may be suitable for personal use and small scale commercial harvest.

The Sub-Basin Plan notes that the area around and south of the Knik-Goose Bay Road and between Goose and Fish Creeks are select key lowlands important for fish and wildlife. In the plan Goose Creek, Cottonwood Creek, and the Palmer Slough are noted as anadromous fish streams.

The Goose Bay and Palmer Hay Flats management units correspond to legislatively designated game refuges. The Willow Sub-Basin Area Plan does not have any additional land management guidelines for these units.

Goose Bay State Game Refuge

The Goose Bay State Game Refuge is not within the Knik/Fairview planning unit, but lies contiguous to its southwest boundary. The refuge is located just south of Point MacKenzie Road, the southern boundary of the Knik/Fairview planning area. Since the refuge is not within the planning area, it will only be mentioned as an indirect land use.

The Alaska Department of Fish and Game (ADF&G) is responsible for the planning and management of this refuge. At this time there is no adopted management plan for the refuge, nor does ADF&G have immediate plans to write a plan.

The refuge is established by Alaska Statute, Sec 16.20.030. According to the legislation, the purpose of state game refuges is to protect and preserve the natural habitat and game populations. In the Goose Bay Game Refuge only state land, tideland, submerged tideland, and land and water acquired by the state is considered part of the refuge. The state may acquire privately owned land but not by eminent domain. The Department of Natural Resources may adopt zoning regulations governing privately owned lands within the refuge, in accordance with the Administrative Procedures Act (AS 44.62), but has not done so at this time. Ingress and egress corridors to and from private property will be allowed through access corridors established by agreement with the private property owners, and the Department of Natural Resources, and Department of Fish and Game.

Palmer Hay Flats State Game Refuge

The Palmer Hay Flats State Game Refuge was established in 1975 and expanded in 1985. It was created to ensure the protection of natural habitat and game populations, especially waterfowl. The refuge provides an important resting and staging area during the spring and fall for migrating waterfowl. It also provides hunting, fishing, and viewing opportunities in one of the fastest growing areas in the state.

It is over 45 square miles in area, containing approximately 28,000 acres of state owned land. The refuge is managed by ADF&G in accordance with the Palmer Hay Flats State Game Refuge Management Plan. The plan affects state lands only. It does not regulate private, municipal, or federal lands.

The goals of the refuge are to:

1. Manage the refuge to protect, preserve, and enhance the natural habitat and fish and wildlife populations.

2. Maintain and encourage a variety of recreational, educational, and scientific uses of the refuge's fish and wildlife resources.

Applicable State Regulations are:

- 5 AAC 95.500 Adopts the Management Plan by reference. Requires a special area permit (5 AAC 95.420) for certain activities to be reviewed for consistency with Management Plan.
- 5 AAC 95.505 Restricts use of off-road vehicles, motorboats, and aircraft to certain times and locations.

Implementation of the Management Plan will be done by ADF&G through day-to-day ground management, the annual budgeting process, and through special area permits. A special area permit is required for any construction work occurring in the refuge including habitat altering activity.

Wasilla Comprehensive Plan and Land Use Regulations

Wasilla city limits comprises the northern boundary of the planning area. Currently, the city's policy regarding annexation is to only seek to annex those areas requesting annexation. The City of Wasilla's newly released (August 1995) public hearing draft Comprehensive Plan recommends the city not annex any portion of the Knik-Fairview planning area due to the lack of (commercial) development and lack of subdivided areas. Annexing oneself to the city does have certain benefits to the residents just outside of Wasilla city limits. The primary benefit being the provision of police services rather than relying on the state troopers which are based out of Palmer, a minimum of twenty minutes away. Another possible benefit of annexation is the hookup of city water and sewer services to the Knik-Fairview area. However, this is a highly unlikely possibility because of the low densities, distance from any current water and sewer line and elevation of the Knik-Fairview area below that of the present city system, precluding the lowest cost gravity flow system.

The southern portion of Wasilla adjacent to the Knik-Fairview Planning area is currently zoned intermediate with only one small area, North Country Estates Subdivision, zoned residential. The intermediate zoning designation allows residential development and conditionally permits subdivisions, mobile homes, garden-style public and institutional uses, commercial uses and light industrial uses.

pln/pmg/pln1114.kfp

CODE ORDINANCE

By: D.Moore
Introduced: 4/8/97
Public Hearing: 5/6/97
Amended: 5/6/97
Adopted: 5/6/97

MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 97-033 (AM)

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY AMENDING MSB 15.24.030 (B) BY ADOPTING THE KNIK-FAIRVIEW COMPREHENSIVE PLAN.

BE IT ENACTED:

Section 1. Classification. Sections 1, 2, and 7 of this ordinance are non-code. Sections 3, 4, 5 and 6 of this ordinance are of a general and permanent nature and shall become a part of the borough code.

Section 2. Amendment of draft plan. The Knik-Fairview Comprehensive Plan, Draft of October 1996, is amended as follows:

Amend title as follows: Knik-Fairview Comprehensive Plan, [DRAFT OCTOBER 1996] 1997.

Page 40, add new paragraph after fifth recommendation as follows: There has been considerable concern amongst some residents in the area surrounding the medical waste incinerator located near the corner of Alix Drive and Knik-Goose Bay Road. Several residents up to two miles distant from the incinerator have complained of respiratory problems resulting from the emissions emanating from this incinerator. The incinerator is

smaller than those which require permitting by the Department of Environmental Conservation.

Recommendations:

The borough should coordinate with the State of Alaska, Department of Environmental Conservation to assess the public health impacts of the existing medical waste incinerator near Alix Drive and Knik-Goose Bay Road.

Incinerators, asphalt batch plants, chemical processing facilities and other industrial and commercial uses associated with heavy point source emissions output shall have conditional permitting requirements in excess of other industrial and commercial uses to prevent public health hazards.

Page 44, amend and add as follows: [ESTABLISHMENT OF KNIK DISTRICT] ESTABLISHMENT OF KNIK SLED DOG/RECREATION DISTRICT.

Page 53, paragraph after first recommendation, amend and add as follows: [THE 1996 STATE LEGISLATURE HAS APPROPRIATED \$1,700,00 TO UPGRADE AND PAVE THE VINE ROAD EXTENSION FROM THE PARKS HIGHWAY TO HOLLYWOOD BOULEVARD. THIS PORTION OF VINE ROAD IS BOROUGH MAINTAINED.] The

1996 legislature has appropriated \$1,700,000 to upgrade and pave Vine Road from the Parks Highway to Knik-Goose Bay Road. The portion of Vine Road from the Parks Highway to Hollywood Boulevard is borough maintained.

Page 54, third paragraph, amend as follows: Point MacKenzie Road to Burma Road Realignment to South Big Lake Road is the proposed mid-term access route and Point MacKenzie Road [EAST] west across the Little Susitna River and then north as the long-term road access route. Additionally, a railroad corridor is proposed to pass [EAST] west of the planning area and [EAST] west of Big Lake.

Page 67, third recommendation, amend and add as follows: [SUBDIVIDERS SHOULD BE REQUIRED TO DEDICATE RIGHTS-OF-WAYS FOR THE TRAILS IDENTIFIED ON THE TRAILS MAP WHEN THE TRAIL CROSSES THEIR PROPERTY.] Trail easements reserving public access should be acquired through the subdivision process.

Page 77, after the first recommendation add new recommendation as follows: The Knik Museum should be upgraded to meet Federal ADA Standards.

Section 3. Amendment of paragraph. MSB 15.24.030(B)(1) is hereby amended to read as follows:

(1) Matanuska-Susitna Borough Comprehensive Development Plan, adopted 1970, amended 1997 (Res. 70-045 dated November 1970, as amended by Res. 70-55 dated December 1970, Res. 81-121 dated September 1981, Ord. 84-09 dated March 1984, Ord. 84-44 dated June 1984, Ord. 84-61 dated July 1984, Ord. 85-08 dated March 1985, Ord. 85-09 dated February 1985, Ord. 85-49 dated June 1985, Ord. 87-12 dated February 1987, Ord. 87-19 dated March 1987, Ord. 87-97 dated August 1987);

Section 4. Repeal of paragraph. MSB 15.24.030(B)(11) is hereby repealed in its entirety and recodified as MSB 15.24.030(D):

[11) UNTIL THE BOROUGH DEVELOPS ITS OWN LAND MANAGEMENT PLAN, BOROUGH LANDS ARE MANAGED UNDER THE SUSITNA AREA PLAN IN THIS AREA. THE BOROUGH ENGAGES IN LAND DISPOSALS IN ACCORDANCE WITH THE AUTHORITY CONTAINED IN A.S. TITLE 29 AND IN ACCORDANCE WITH THE PROCEDURES CONTAINED IN MSB TITLE 23.]

Section 5. Amendment of subsection. MSB 15.24.030(B) is hereby amended by adding a new subsection (11) to read as follows:


(11) Knik-Fairview Comprehensive Plan, adopted 1997.

Section 6. Adoption of subsection. MSB 15.24.030(D) is hereby adopted to read as follows:

(D) Until the borough develops its own land management plan, borough lands are managed under the Susitna Area Plan in this area. The borough engages in land disposals in accordance with the authority contained in A.S. Title 29 and in accordance with the procedures contained in MSB Title 23.

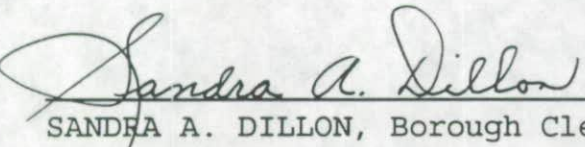
Section 7. Effective date. Ordinance Serial No. 97-033(AM) shall take affect upon adoption by the Matanuska-Susitna Borough Assembly.

ADOPTED by the Matanuska-Susitna Borough Assembly this 6th day of May, 1997.



BARBARA LACHER, Borough Mayor

ATTEST:



SANDRA A. DILLON, Borough Clerk

(SEAL)

KNIK-FAIRVIEW PLANNING AREA TRAIL MAP

- PLANNING AREA BOUNDARY
- ||||| SEPARATED PATHS
- PROPOSED TRAILS

MSB Planning Dept./Support Services
2/5/97

