

2011

Fairbanks North Star Borough

Comprehensive Economic Development Strategy

The preparation of this strategy was financed in part by funds received from Economic Development Administration and the State Department of Commerce, Community and Economic Development, Division of Economic Development.



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CHAPTER ONE: INTRODUCTION

This Comprehensive Economic Development Strategy (CEDS) represents the community’s economic development vision, and is adopted into the Fairbanks North Star Borough’s (FNSB) long term Regional Comprehensive Plan. The Goals, Objectives, Strategies, and Actions contained in the CEDS are the means to realize this vision. From agriculture and mining to technology and cold climate research, these strategies reflect the diversity of the Borough’s economy and community.

The Fairbanks North Star Borough Economic Development Commission

The FNSB Economic Development Commission is tasked with developing and maintaining the community’s CEDS. The FNSB Mayor serves as the commission’s chair and appoints six voting commission members, the FNSB Assembly Presiding Officer appoints the remaining two voting members.

Members of the 2010 FNSB Economic Development Commission:

<u>Chair:</u>	<u>Ethnicity</u>	<u>Sex</u>	<u>Representing</u>	<u>Term</u>
Mayor Luke Hopkins	White	M	FNSB Local Government	(11/12)

Appointed by the Mayor:

<u>Name:</u>	<u>Ethnicity</u>	<u>Sex</u>	<u>Representing</u>	<u>Term</u>
Mayor Jerry Cleworth	White	F	City of Fairbanks Small Business	(11/13)
Jeff Bizarro	White	M	Labor Education	(12/11)
Karen Clark	Alaska Native	F	Doyon Ltd. Finance Alaska Native for Profit	(12/13)
Buzz Otis	White	M	North Pole Economic Dev. Small Business	(12/12)
Paul Robinson	White	M	Robinson and Associates Small business, finance	(12/11)
Fred Schlutt	White	M	University of Alaska Economic Development	(12/12)

Appointed by the Presiding Officer:

<u>Name:</u>	<u>Ethnicity</u>	<u>Sex</u>	<u>Representing</u>	<u>Term</u>
Matt Want	White	M	FNSB Assembly/Business	(11/11)
Tim Beck	White	M	FNSB Assembly/Transportation	(11/11)

CEDS Development Process

In June of 1999, over 300 Fairbanks North Star Borough (Borough) residents attended an Economic Summit focused on developing an economic development vision for the FNSB; a vision that would serve as the foundation for the CEDS. Special care was taken to include all segments of the Borough community.

The summit participants developed most of the Goals, Objectives, and Strategies contained in the current CEDS. The seventeen members of the FNSB Economic Development Commission (EDC) refined and expanded these Goals, Objectives, and Strategies, incorporating them into the CEDS document. In 2001 this document was considered and recommended by the FNSB Planning Commission and January 10, 2002 was approved by the Fairbanks North Star Borough Assembly.

To ensure the CEDS' Goals, Objectives, and Strategies remained relevant, and to identify new opportunities for economic development, in 2004 the FNSB's Alaska Regional Development Organization (ARDOR) updated the 2001 CEDS. This process involved surveying local community and business leaders, community groups and economic development oriented organizations. Additional input was gathered from the Fairbanks' Interior Issues Council committees on Future Economy, Cost of Energy, Land Use Planning, Workforce Development and Health Care. This survey sought to capture and incorporate the community's vision for its economic development future into the 2005 CEDS.

In February 2005, the FNSB EDC reviewed and approved the proposed CEDS. This was followed by a public comment period. During this time, the FNSB ARDOR made a series of public presentations to Borough community, economic development and business groups. In total, over 100 members of the Borough community commented on the proposed CEDS.

Upon completion of the public comment process, the FNSB ARDOR incorporated the comments into the final draft of the CEDS, which was then presented to the FNSB Planning Commission at a public hearing. On May 3, 2005 the FNSB Planning Commission recommended that the FNSB Assembly adopt the proposed CEDS, as amended.

On June 16, 2005 the FNSB Assembly adopted the CEDS into Chapter Two of the FNSB Regional Comprehensive Plan. Following adoption of the CEDS, the FNSB ARDOR provided the 2005 CEDS to the Federal Economic Development Administration (EDA) for their review. The EDA approved the CEDS November 29, 2005.

In 2006, 2007, and 2008 the FNSB ARDOR conducted its annual review of the CEDS with the FNSB Economic Development Commission, Planning Commission, and Assembly. The FNSB Economic Development Commission recommended major additions and re-organizations. Minor changes were recommended by the Planning Commission and Assembly. In 2009 the Economic Development Commission reviewed the document and recommended no changes.

In 2010, the Economic Development Commission (EDC) received a planning grant from the Economic Development Administration. The Planning organization established a CEDS steering committee made up of:

<u>Name:</u>	<u>Ethnicity</u>	<u>Sex</u>	<u>Representing</u>	<u>Term</u>
Buzz Otis	White	M	North Pole Economic Dev. Small Business	

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Fred Schlutt	White	M	University of Alaska
Jim Dodson	White	M	Fairbanks Economic Development Corp; Small business
Deb Hickok	White	F	Fairbanks Convention & Visitor Bureau; Regional Workforce Investment Board;
Jack Wilbur	White	M	Design Alaska; Small Business, Chamber of Commerce;
Kathryn Dodge	White	F	Fairbanks North Star Borough; Economic Development; Regional Workforce Investment Board

The FNSB Planning Group worked with Alaska Partnership for Economic Development on a statewide economic development strategy based upon an industry cluster model. The Steering Committee decided that it would be wise to restructure the CEDS based upon the industry clusters in the Borough. We contracted with a local consulting group, Information Insights, and developed and followed a rigorous plan to update the CEDS. This included conducting and analyzing 22 key local stakeholder interviews, incorporating that information into online survey, which was completed 185 people. The CEDS steering committee also gathered information from ten local community and industry organizations. The results of these meetings and surveys were presented at a community open house for public comment. Finally, all of this input was consolidated and presented to 55 community leaders and industry stakeholders at an economic summit where attendees identified local industry clusters' top priorities. The group then identified the top three community priorities.

The priorities identified at the economic summit became the foundation for the CEDS. Strategies to implement these priorities were drawn from the 2009 CEDS, along with recommendations from the industry cluster teams at the summit, and feedback from a final on-line survey of economic summit participants, the CEDS Steering Committee and the Economic Development Commission. The final CEDS was presented to the City of North Pole and City of Fairbanks Councils in a work session. They were presented, available for public comment for 30 days, and approved by the following bodies on the following dates: November 4, 2010 the FNSB Economic Development Commission; February 15, 2011, the FNSB Planning Commission; FNSB Assembly April 14, 2011.

Integrating the CEDS into the Alaska State and other Economic Development programs.

The FSNB CEDS was restructured to facilitate industry cluster development; because the State and Nation have also moved to an industry cluster development process, this readily integrates into the Statewide and other Regional economic development strategies and processes.

The CEDS is regularly referred to by the Fairbanks Economic Development Corporation (FEDC), the Fairbanks North Star Borough Economic Development Commission, FNSB Planning Organization and other local community and economic development organizations as they develop their work plans and consider development projects. The CEDS is incorporated into the Fairbanks North Star Borough Regional Comprehensive Plan as an element of its economic development implementation strategy. The Planning Commission and Fairbanks North Star Borough Assembly refer to the CEDS for guidance in their respective community and economic development decision making processes. The State of Alaska considers the CEDS to be a statement of support for community and economic development projects being considered by community and economic development organizations within the Fairbanks North Star Borough.

CHAPTER TWO – BACKGROUND AND ANALYSIS OF FNSB ECONOMY

Introduction:

The Fairbanks North Star Borough is the second largest community in Alaska. It has a number of economic clusters, the local, state and national government; natural resource extraction; research university; construction; transportation; health services; social services; retail and providing regional services.

Location and Climate

Location

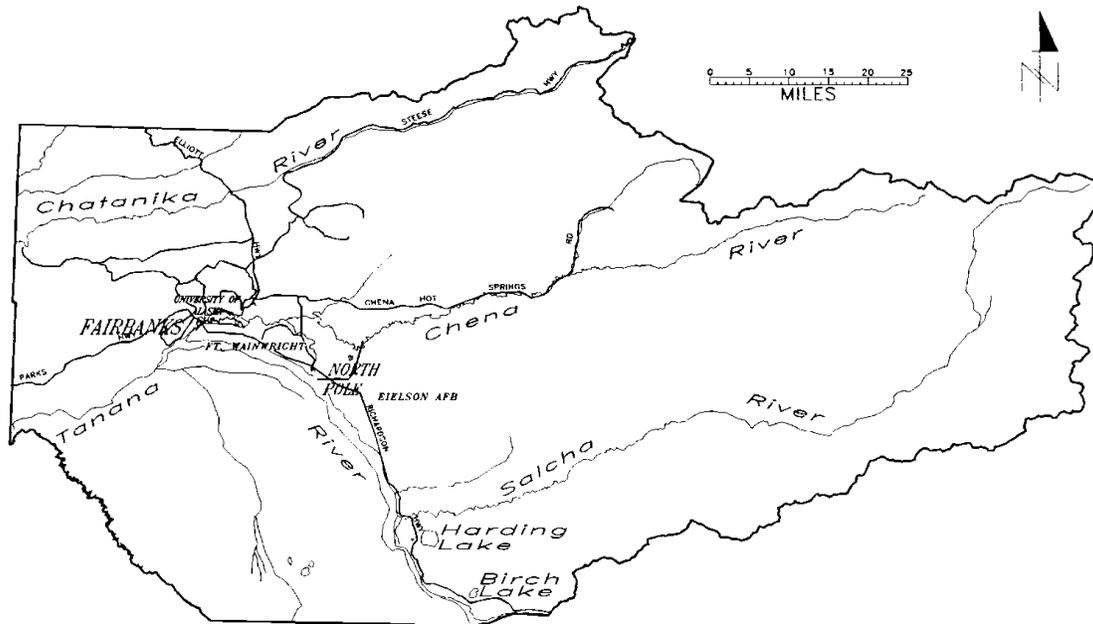
The Fairbanks North Star Borough (FNSB) is located in the center of Interior Alaska (Figure 1). Two cities reside within the FNSB, Fairbanks and North Pole, as well as the unincorporated communities of College, Ester, Fox, Harding-Birch Lakes, Moose Creek, Pleasant Valley, Salcha, and Two Rivers. The FNSB lies within the Tanana Valley, which stretches east to the Canadian border. The City of Fairbanks lies on the banks of the Chena River, which drains into the Tanana River immediately south of the city. The City of North Pole lies 14 miles southeast of Fairbanks between the Fort Wainwright Army Post and Eielson Air Force Base. The Chatanika, Chena, and Salcha River drainages define the area to the north, east and west of the urban centers.

The FNSB is Alaska's second most populated borough and residents commonly refer to it as the "Golden Heart of Alaska." Due to its central location, the FNSB is the transportation, trade and service center for the vast Interior and Northern regions of Alaska. The FNSB is the northern terminus of the Alaska Railroad with southern access to the ports of Seward, Anchorage, and Nenana. The Richardson, Parks, Steese and Elliot Highways connect the FNSB to Valdez, Prudhoe Bay, Anchorage, Canada and the Continental United States. The FNSB's location along transpolar air routes makes it logistically attractive for global air transportation and military operations.

Climate

The FNSB experiences seasonal temperature extremes similar to those of other communities in Interior Alaska. The Alaska Range to the south, keeps the wet, humid, coastal weather at bay. The Brooks Range to the north protects the Interior from harsh Arctic winds. Temperatures extremes of -80° F (-62° C) in the winter and 90° F (32° C) in the summer have been recorded in the Interior region. Typically, the FNSB experiences winter temperatures of -62° F or colder occur for about two weeks each winter, 96° F during summer days that are long and warm with up to 21 hours of sunlight and annual precipitation averages about 10.34 inches.

Figure 1: Fairbanks North Star Borough Map



SOURCE: FNSB Community Research Center.

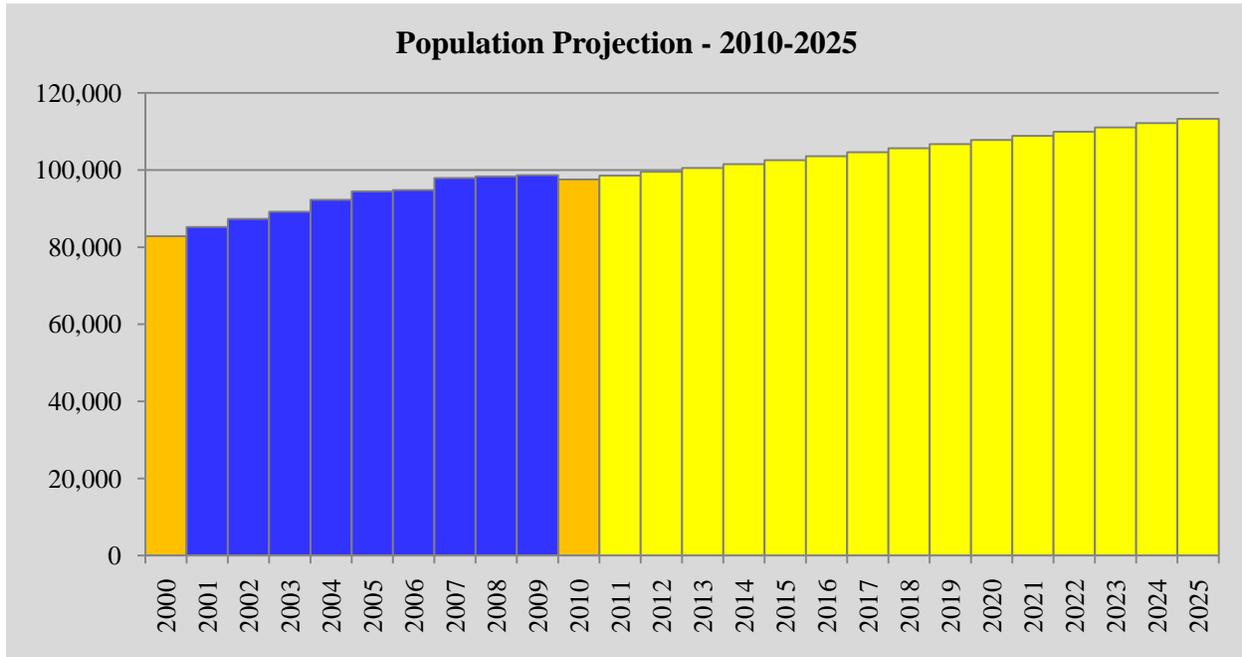
Population Trends and Characteristics

The Fairbanks North Star Borough contains the second largest metropolitan population in the State of Alaska, approximately 13.7% of the total state population according to the 2010 U.S. Census. Changes in the FNSB's population have typically followed the growth and decline of the regional economy. Rapid population growth between 1970 and 1980 was largely influenced by the construction of the 800-mile Trans Alaska Pipeline System and resulting economic expansion (Figure 1).

Population growth in the FNSB has been steady throughout the decennial, rising from an official population of 82,840 in 2000 to the latest U.S. Census 2010 population of 97,581. This represents a 17.8% increase over 10 years, an average of 1.8% per year. The FNSB population growth is predicted to remain positive into the future.

Using a simple linear regression on the adjusted census data from the years 2000-2010 population estimates can be projected out to 2025 (Figure 2).

Figure 2: Population Projections



SOURCE: FNSB Community Research Center (gold color indicates US Census 2000 and 2010 population).

Racial and Ethnic Composition

While the FNSB has a predominantly Caucasian/White population the two fastest growing segments are people of Hispanic* and Pacific Islander descent. The sizeable increase in the Alaskan Native and/or American Indian segment of the population follows a statewide trend of Alaskan Native people migrating from rural locations to urban centers. According to the U.S. Census Bureau the FNSB’s Hispanic population grew nearly 64.3% between 2000 and 2010, and represents approximately 5.8% of the borough’s population (Figure 3, and Figure 4).¹ Between 2000 and 2010, the Alaska Native and/or American Indian (Not Hispanic) population in the FNSB has increased by 20.4% and represents approximately 7.0% of the borough’s 2010 total population.² The relative size of the Alaska Native population within the total FNSB population is below the statewide average of 14.8%.

The Caucasian/White (Not Hispanic) population has grown about 16.7% between 2000 and 2010 and represents approximately 77% of the FNSB 2010 population. Despite the low growth rate the relative representation of this population segment among the total population is greater than the statewide average of 66.7%.³

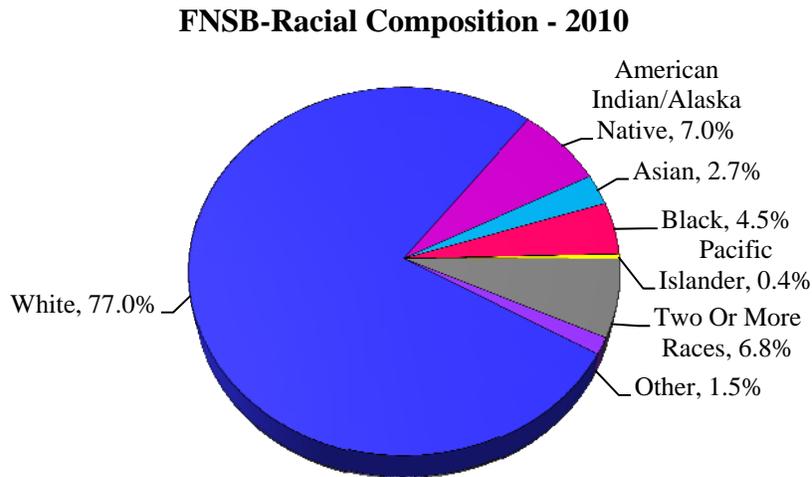
Between 2000 and 2010 the African American (Not Hispanic) population has decreased 8.7% and represents 4.5% of the FNSB population. Despite the decline the relative representation of

* The U.S. Census Bureau defines “Hispanic” as an ethnicity. There are also two minimum categories for ethnicity: Hispanic or Latino and Not Hispanic or Latino. Hispanics and Latinos may be of any race.

this population segment among the total FNSB population remains above the statewide average of 3.3%.⁴

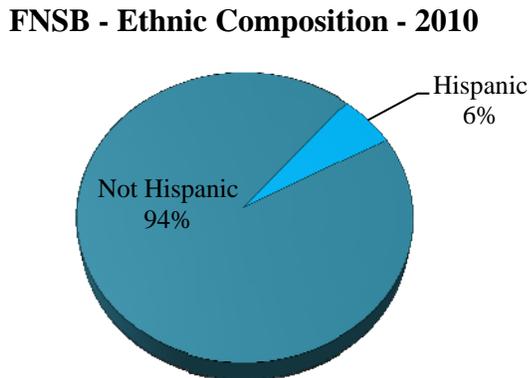
The Asian (Not Hispanic) population has grown 50.6% between 2000 and 2010 and now represents approximately 2.7% of the total FNSB population. The relative representation of this population segment among the total FNSB population remains below the statewide average of 5.4%.

Figure 3: Racial Composition



SOURCE: U.S. Census 2010 data.

Figure 4: Ethnic Composition

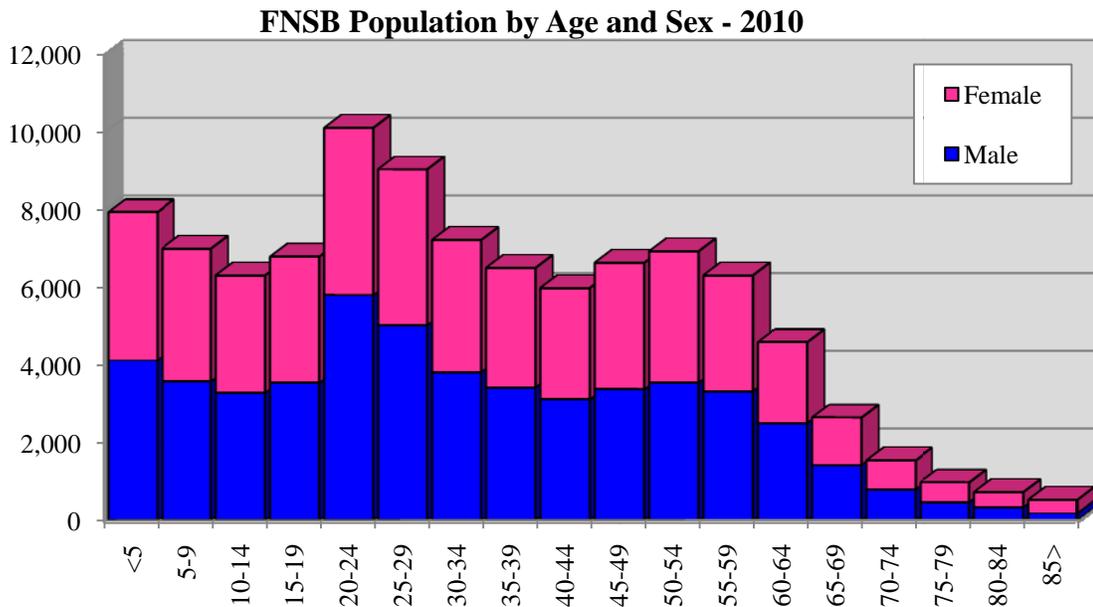


SOURCE: U.S. Census 2010 data.

Age and Sex

In 2010, the median age in the FNSB had increased to 31 years.⁵ In the median age compared to the statewide and national median ages of 33.8 and 36.8 years respectively.⁶ Factors influencing this trend of increasing median age are increasing life expectancy, birth and death rates, migration and the presence of military and university populations.⁷

Figure 5: Age & Sex



SOURCE: U.S. Census 2010 data.

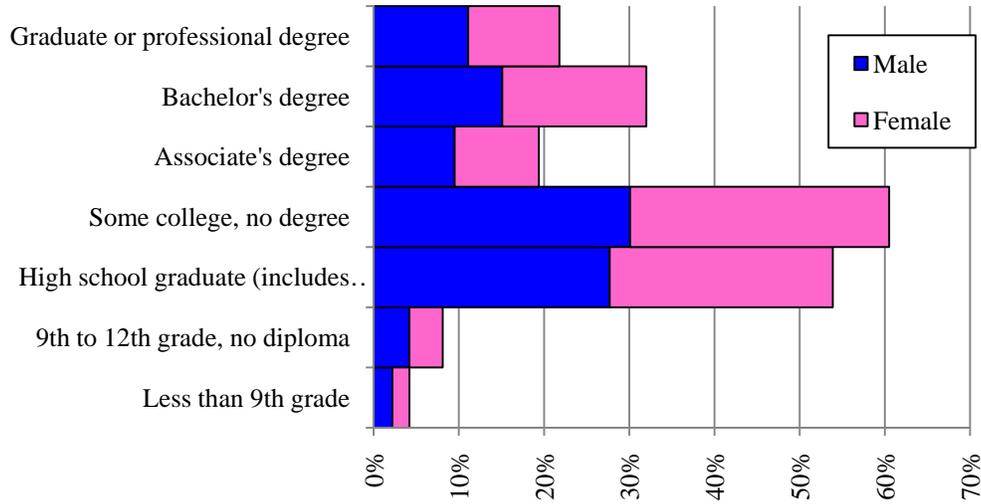
In 2010, FNSB’s population is made up of 52.8% males and 47.2% females, the State reflects 52.0% male and 48.0% female (Figure 5).⁸ These sex compositions are projected to align with the national average of 49.3% male and 50.7% female as the Alaskan population continues to grow.⁹

Educational Attainment

The percentage of the FNSB’s population over age 25 that has a high school diploma or GED increased from 92% in 2000 to 93.6% in 2009 and remains above the state average of 90.7%, as well as the national average of 84.6%.¹⁰ Between 2000 and 2009 the percentage of the FNSB’s population over the age of 25 holding a Bachelor’s degree or higher decreased 0.7 percentage points to 26.3%.

Figure 6: Educational Attainment

**FNSB Educational Attainment Levels
for Population 25 years and over**



SOURCE: U.S. Census Bureau, 2005-2009 American Community Survey 5-Year Estimates.

This is still comparable with the state average of 26.5% and the national average of 27.5% during the 2009 reporting period (Figure 6).

Labor Force, Employment and Income

The FNSB has a growing labor force that added 11,500 workers from 1990-2010.¹¹ The FNSB has experienced 19 years of consecutive employment growth, and that trend is expected to continue through 2012.¹² Growth of the FNSB workforce follows a statewide trend of an expanding labor force. Between 2000 and 2010 annual unemployment rates in the Fairbanks Metropolitan Statistical Area (MSA)[†] gradually declined from 8.4% in 1990 and 7.1% in 2010.¹³ As of December 2010 the unemployment in the Fairbanks MSA was 7.1% and continues to remain below statewide unemployment rates.¹⁴

According to preliminary estimates by the Alaska Department of Labor the Services Providing[‡] sector of the economy continues to be the largest employment sector in the FNSB, accounting for nearly 89% of the borough's employment in 2010.¹⁵

The per capita personal income in the Fairbanks MSA has grown from \$28,424 to \$38,969 between 2000 and 2008.¹⁶

[†] The Fairbanks Metropolitan Statistical Area is the most heavily populated and contiguous by roadway within the FNSB.

[‡] Excludes self-employed workers, fishermen, domestic workers, unpaid family workers and nonprofit volunteers.

Labor Force

Between 2000[§] and 2010, the FNSB labor force grew 13.7% (Figure 6).¹⁷ This rate corresponds with the statewide labor force growth rate of 13.3% during the same period.¹⁸ The US Census Bureau reports that as of 2010 26.5% of the FNSB’s residents age 16 and over were not in the labor force. This is comparable with the state average of 28.2%.¹⁹

Figure 6: Unemployment



SOURCE: Alaska Department of Labor (thru December 2010).

Employment

Between 1990 and 2000, the Services Providing sector of the FNSB economy grew by 22.4%, comparable to the statewide sector growth rate of 23.4%.²⁰ Between 2001 and 2010, the Services Providing sector of the FNSB economy grew by 10.3%, comparable to the statewide sector growth rate of 11.6%.²¹ The Services Providing sector includes the industry employment categories of Trade, Transportation and Utilities, Financial services, Professional and Business services, Educational and Health services, and Leisure and Hospitality services. Due to changes in industry classification and grouping in 2001, direct comparison between industry employment categories for these two respective time periods is not possible.²²

Between 2001 and 2010, FNSB employment in the Education and Health Services industry grew by 44.1%, which is slightly lower than the statewide education and health services industry growth rate of 47.3% during the same time period.²³ During this same period, FNSB

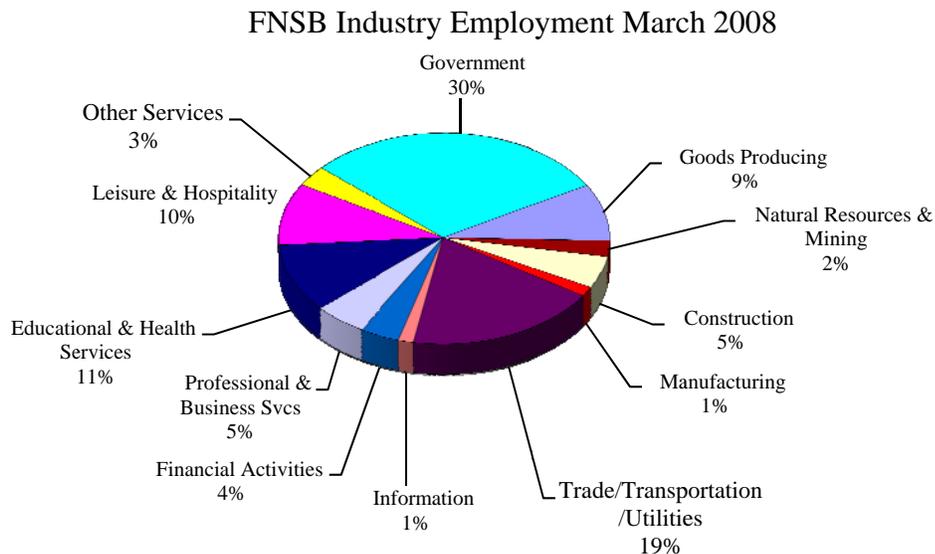
[§] A change in the way the labor force statistics are calculated for boroughs and census areas makes data prior to 2000 not comparable with data from 2000 forward. (see NAICS codes replace old SICS codes).

employment in the Retail Trades, a component of the Trades/Transportation/Utilities industry, grew 15.4%, well above the statewide retail trade industry growth rate of 6.3% percent. FNSB Employment in the Leisure/Hospitality industry grew by 10.8% between 2001 and 2010, comparable to statewide leisure and hospitality growth of 11.3% during the same period.²⁴ Employment in Transportation/Warehousing/Utilities declined by 3.8% in the FNSB from 2001 to 2010, while statewide employment levels in this category grew a 2.4% during this period (Figure 7).

The Goods Producing sector of the FNSB economy grew by 46.7% between 1990²⁵ and 2000,²⁶ contrasting with a statewide decline of 2.3%. Between 2001 and 2010, the FNSB Goods Producing sector grew by 25.7%, compared to a statewide growth rate of 15.4%.²⁷ The Goods Producing sector also includes the industry employment categories of Mining and Logging, Construction, and Manufacturing. Due to changes in industry classification and grouping in 2001, direct comparison between industry employment categories for these two respective time periods is not possible.²⁸

Between 2001 and 2010, FNSB employment in construction industry grew by 35%, which exceeds the statewide construction industry growth of 7.4%. During this same period, FNSB employment in the Manufacturing industry grew by 9.1%, above the statewide industry growth of 8.5%. FNSB employment in the Mining and Logging industry grew by 15.8% from 2001 to 2010 compared to a statewide growth in Mining and Logging employment of 33.6% during the same period.

Figure 7: Industry Employment

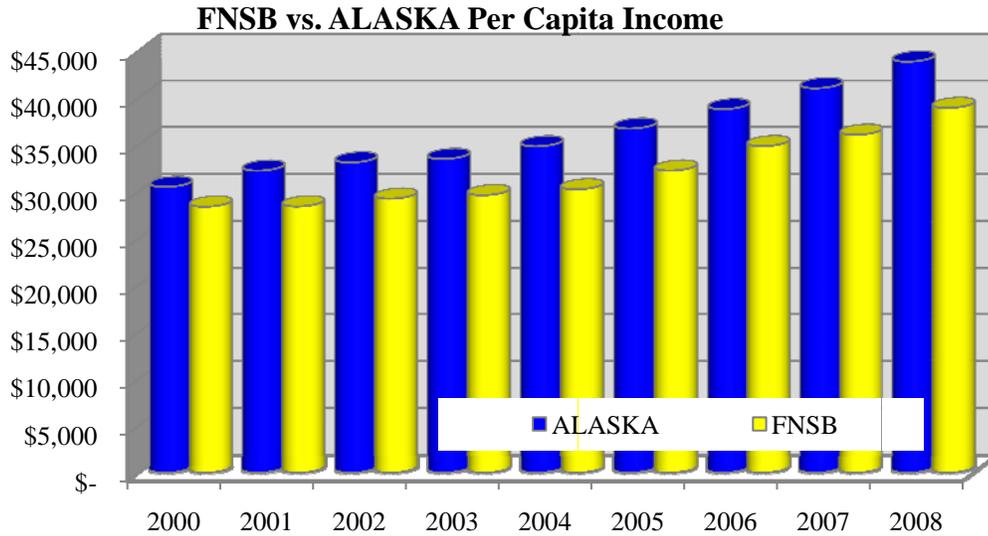


SOURCE: Alaska Department of Labor: Industry Employment Estimates 2008.

Income

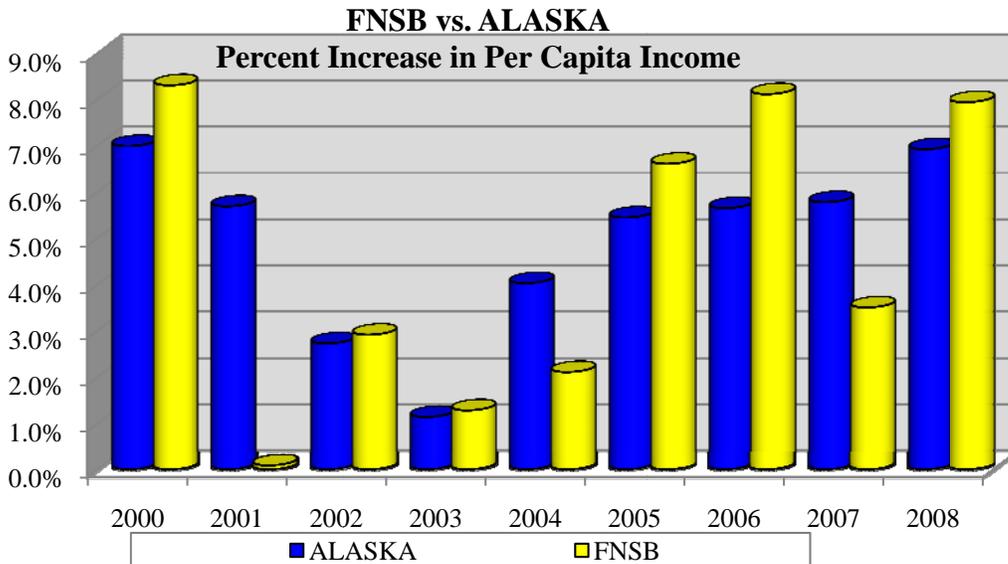
Between 2000 and 2008, per capita personal income in the FNSB increased by 37.1%, or at an annual average rate of 4.5%²⁹. During this same period, statewide per capita personal income grew by 43.9%, or at an annual average rate of 4.9%³⁰ (Figures 8 & 9).

Figure 8: Per Capita Income



SOURCE: Bureau of Economic Analysis.

Figure 9: Increase in Per Capita Income



SOURCE: Bureau of Economic Analysis.

Poverty

In 2000, the poverty rate in the FNSB was 8.9% which is down to 7.9% in 2009.³¹ This follows a statewide trend that saw the overall poverty rate in Alaska increase from 10.9% to 9.1% over the same time period.³²

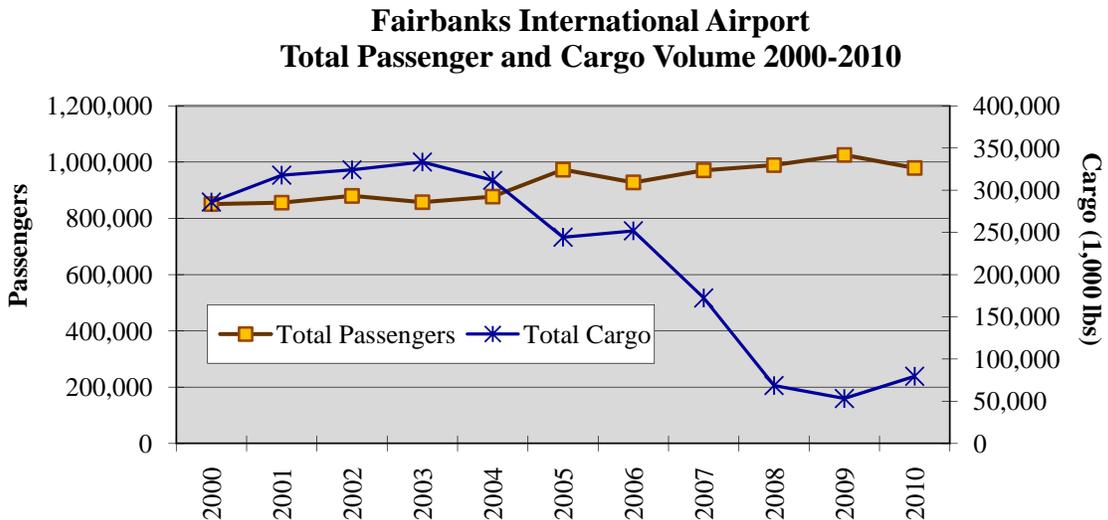
Infrastructure Profile

Air Transportation

Air transportation is central to the Alaskan economy. Due to the limited reach and seasonal nature of other transportation, air transportation is integral, and has a much larger economic impact on the state of Alaska than most other states in the Union. International and domestic air cargo and passenger service are the main components of air transportation’s role in the FNSB’s economy. The availability of competitively priced jet fuel from local refineries, and delay-free operations and strategic global position, Fairbanks International Airport (FAI) serves a refueling stop for international air cargo flights. FAI serves as a hub for many communities in Interior and Northern Alaska that rely upon air freight and commuter services. Air transportation provides these rural and remote communities with regular access to health and dental care as well as mail delivery.

Fairbanks International Airport reports that total passenger volume increased 15.1% between 2000 and 2010 to 979,029 passengers (Figure 10).³³ During this same period total cargo volume declined 72.2% to approximately 79.6 million pounds. Fuel flowage declined 69.3% from 48.2 million gallons in 2000 to 14.8 million gallons in 2010.

Figure 10: Airport Passengers & Cargo Volumes



SOURCE: Fairbanks International Airport.

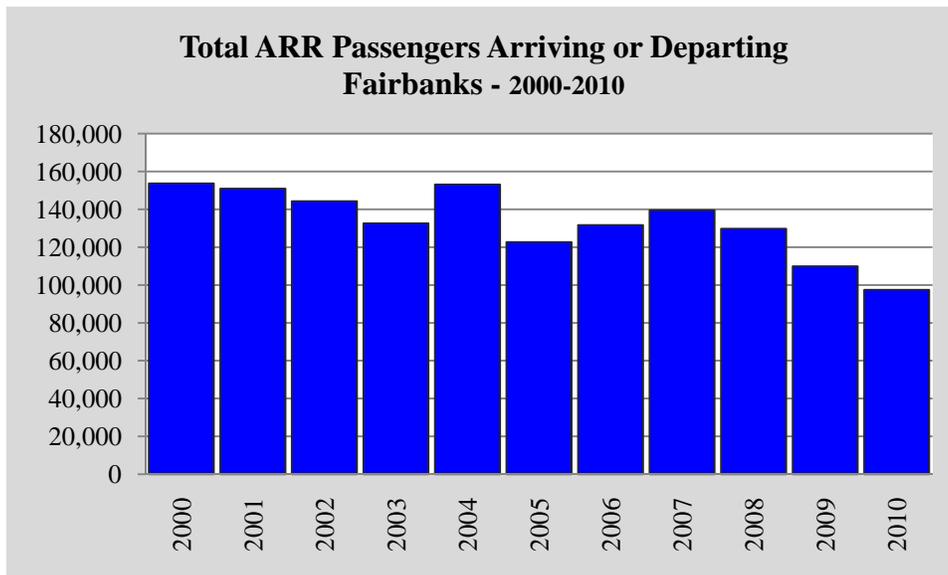
Alaska Railroad Corporation

The Alaska Railroad Corporation (ARR) was acquired from the Federal government on January 5, 1985 and is an independently managed corporation owned by the State of Alaska. The regional railroads' mainline extends 470 miles from the all-season, deep-water port of Seward to its northern terminus in Fairbanks. From Fairbanks the railroad extends 28 miles east of Fairbanks to the oil refineries in North Pole and Eielson Air Force Base.

ARR provides both passenger and freight service to the FNSB. Passenger service is primarily a summer operation serving the visitor industry. Coal is transported from the Usibelli Coal Mine, in Healy, Alaska to power generation plants in Fairbanks, Fort Wainwright Army Base and Eielson Air Force Base. ARR transports jet fuel from North Pole refineries to Anchorage International Airport.

Total ARR passenger volume through Fairbanks remained relatively constant between 2000 and 2010 (Figure 11).³⁴ The total volume of passengers arriving in Fairbanks decreased nearly 40.3% from the decade high in 2000 to 2010. During this same period total volume of passengers departing Fairbanks also decreased by 33.1%.

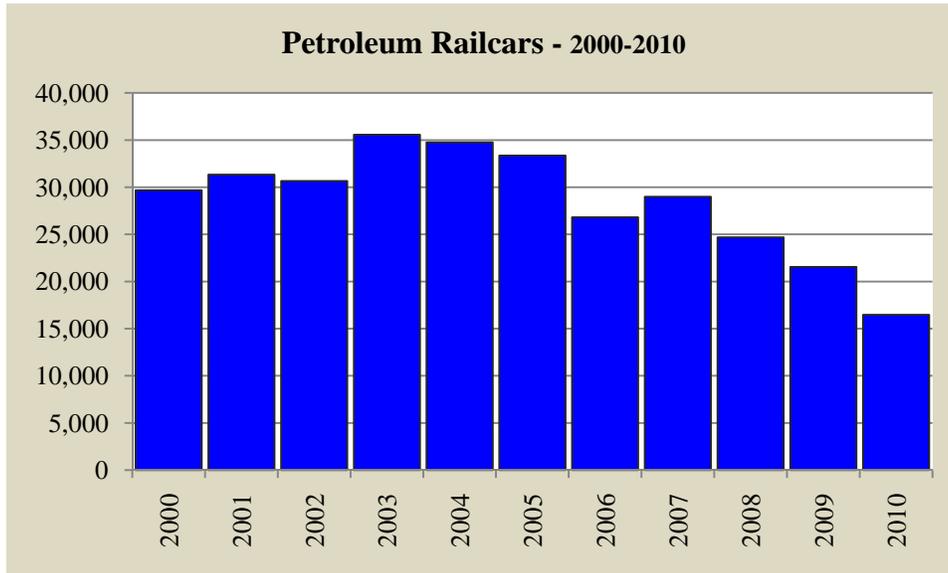
Figure 11: Alaska Rail Road Passenger Volume



SOURCE: Alaska Railroad Corporation.

Finally, the total volume of petroleum railcars departing refineries in Fairbanks declined 44.5% between 2000 and 2010 (Figure 12).

Figure 12: Petroleum Railcars

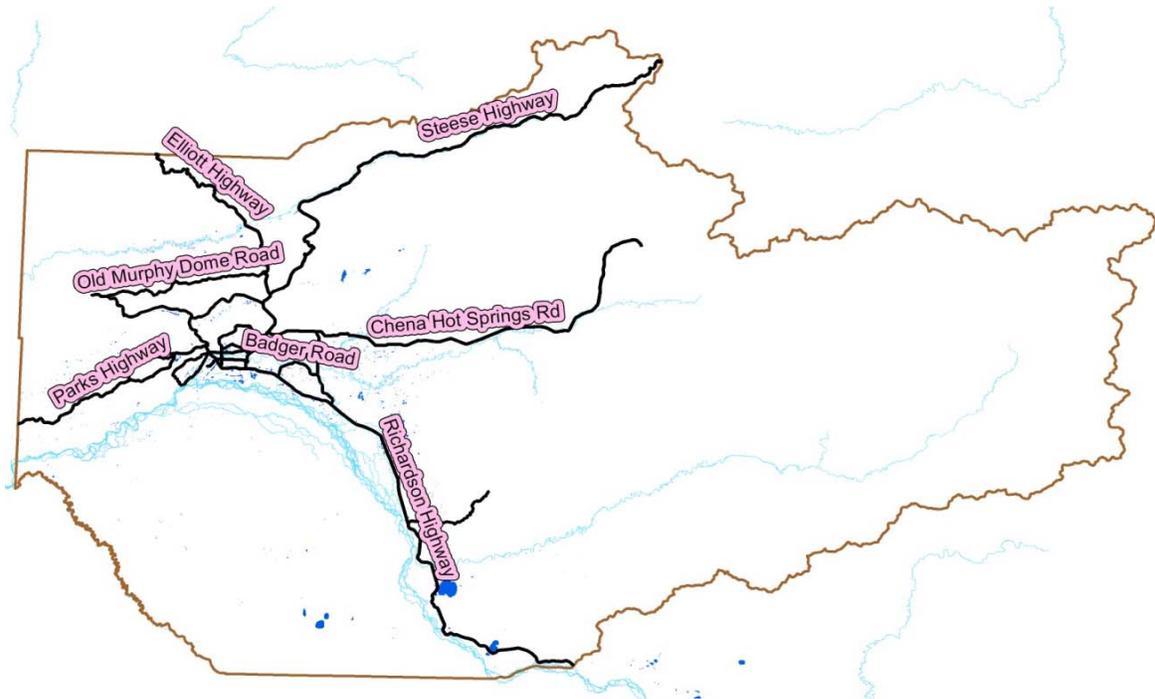


SOURCE: Alaska Railroad Corporation.

Highway, Road and Trail Systems

The Alaska Highway connects Fairbanks to Canada and the Continental U.S. (Figure 13). The Alaska Highway terminates at Delta Junction where it meets the Richardson Highway, which continues on to Fairbanks. The Richardson Highway, a historic trail used during the gold rush, connects Fairbanks with Valdez. The Parks Highway extends 300 miles south from Fairbanks to Wasilla where it connects with the Glenn Highway to Anchorage and Glennallen. The George Parks Highway was constructed in the late 1960s to shorten road travel time between Fairbanks and Anchorage. It also provides access to Denali National Park, and Mount McKinley or Denali (Koyukon Athabaskan for "The High One") the highest mountain peak in North America and the United States, with a summit elevation of 20,320 feet (6,194 m) above sea level, the State's top tourist attraction. The Steese Highway leads north to Circle and the Yukon River. North of Fairbanks, the Chena Hot Springs Road branches east from the Steese Highway. The junction of the Elliott and Steese Highways is at Fox, north of Fairbanks. The Elliott Highway extends west to Livengood, Minto and Manley Hot Springs. The Dalton Highway begins just north of Livengood and continues north to the Prudhoe Bay oil fields. During the winter months, ice roads and winter trails traveled by truck, snow machine and dog sled connect rural communities inaccessible by road or highway.

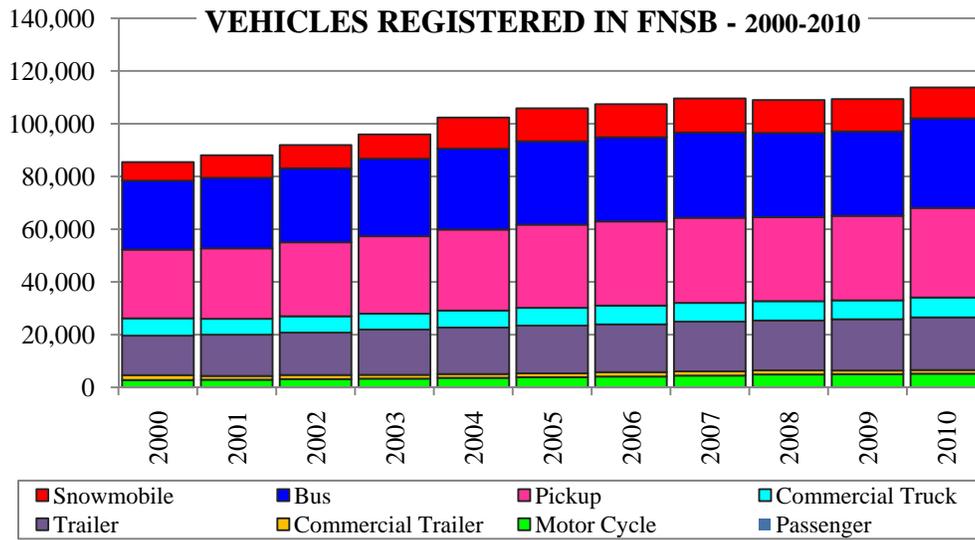
Figure 13: FNSB Major Roads



SOURCE: FNSB Community Research Center.

State and Borough road and trail networks have been receiving an increasing amount of use. According to the Alaska Division of Motor Vehicles there were 144,478 motor vehicles registered in the FNSB in 2010 (Figure 14).³⁵ This represents a 29.9% increase from 2000. The number of passenger vehicles registered in the FNSB increased 24.7% during this period. The number of pickups registered increased nearly 30.1% to 33,941 from 2000 to 2010. The number of motorcycles and snow machines registered in the FNSB increased 84.8% and 65.7% respectively during this period.

Figure 14: Vehicles Registration



SOURCE: Alaska Department of Motor Vehicles.

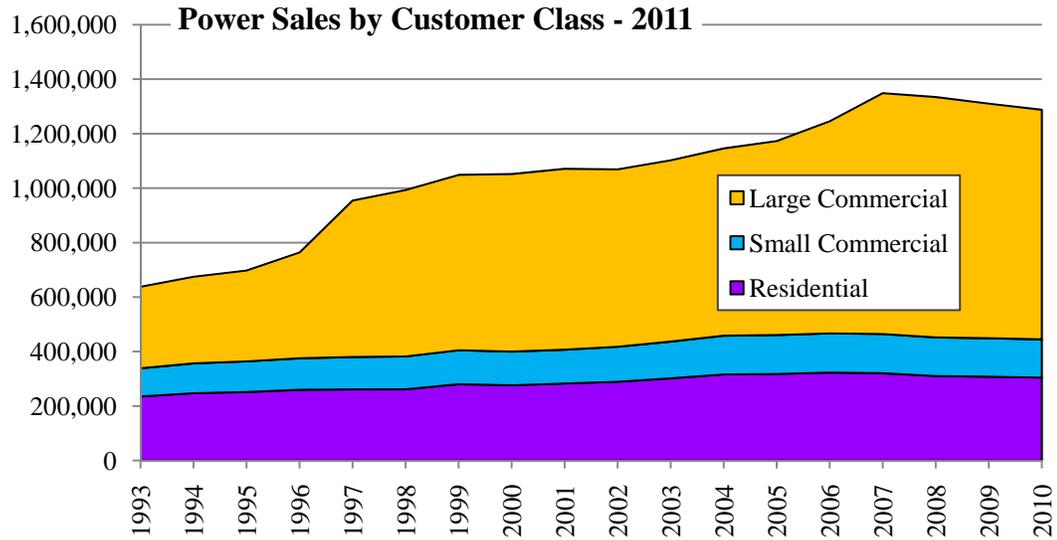
Electric Utilities

Incorporated in 1946 in Fairbanks, Alaska, Golden Valley Electric Association (GVEA) distributes power to service locations in Fairbanks, Delta, Nenana, Healy and Cantwell over 3,099 miles of transmission and distribution lines and 35 substations. Golden Valley’s fuel mix is changing. In addition to their diverse fuel supply of coal, oil, natural gas and hydroelectric power, GVEA is adding more renewable power. Launched in 2005, the Sustainable Natural Alternative Power program - SNAP - now has 39 local renewable energy producers. Over the last decade, kilowatt-hour purchases more than doubled as the number of large commercial customers increased.

GVEA reports in its 2011 Load Forecast that residential class sales have grown at a compounded average annual rate of 1.4% since 1990.³⁶ Small commercial class sales have grown at a compounded average annual rate of 1.8%. Large commercial class sales have grown at a compounded average annual rate of 3.2% during this period (Figure 15).

The University of Alaska Fairbanks, Fort Wainwright Army Base, and Eielson Air Force Base have their own electrical generating facilities. All electrical providers are linked to an inertie system that can provide back-up power in the event of a power outage or other emergency. Some of these providers also sell surplus power to one another on a common power grid that links Anchorage and Fairbanks.

Figure 15: Power Consumption



SOURCE: GVEA 2011 Load Forecast.

Telecommunications

The FNSB serves as a hub for telecommunications services to Interior and Northern Regions of Alaska. Fairbanks is connected to Alaska’s fiber optic cable system that runs from Prudhoe Bay to Anchorage. Alaska is connected to the Continental U.S. by four fiber optic cables.

Three competing companies provide interstate and intrastate long distance for the Interior. These three firms also provide wireless network service. Internet access has four competing providers.

Alaskans and residents of the Interior and Northern regions especially, rely extensively upon wireless networks and satellite-based telecommunications services. Given the geographic isolation of many of these communities, many services provided in the FNSB, such as post-secondary educational courses, are extended to outlying communities via these networks.

Water Treatment and Distribution

The water distribution system in the FNSB consists of systems operated by Golden Heart Utilities (GHU), College Utilities Corporation (CUC), Fort Wainwright, Valley Water, the University of Alaska Fairbanks, and the City of North Pole. GHU has 150 miles of water mains, 17 pumping stations, 1500 fire hydrants servicing 30,000 residents and over 1,100 businesses. CUC distributes over 300 million gallons of water annually through 74 miles of water main, serving over 10,000 residents and 225 businesses. In addition to the 74 miles of main, CUC operates 9 pumping stations and 538 fire hydrants. Water treatment is provided to GHU and CUC from GHU’s Water Treatment plant. Each year the plant produces and distributes over 1.2 billion gallons of water. Fort Wainwright, Valley Water, the University of Alaska Fairbanks, and the City of North Pole have their own water systems.

Wastewater Treatment and Collections

Wastewater treatment is provided by the City of North Pole and Golden Heart Utilities (GHU). GHU operates the Regional treatment facility processing 1.7 billion gallons of wastewater. GHU has 60 lift station and 115 miles of wastewater collections mains, while CUC has 31 lift stations and 51 miles of wastewater collections main.

Much of the FNSB's population is not serviced by water or wastewater utilities. Many Borough residents rely upon private wells, septic systems or water delivery services to their homes.

Solid Waste

The FNSB operates landfills for solid waste disposal. The Borough has solid waste transfer sites for residents living where there is no public trash collection service. These facilities accept a broad range of refuse including waste oil, batteries and have cells for disposal of asbestos. The City of Fairbanks provides residential trash collection service. Private trash collection is also available in the North Pole area at the curbside. Fort Wainwright Army Base and Eielson AFB have their own landfills for solid waste disposal.

The FNSB Department of Public Works Solid Waste division reports that 111,784 tons of material was received by the FNSB landfill in fiscal year 2010 (FY10).³⁷ This represents a 7.54% increase from the FY09 total. The FNSB Solid Waste division also operates a recycling program, which processed 24,883 gallons of waste oil, 159 tons of batteries, and 9,540 gallons of antifreeze in FY10.³⁸ The Eielson Air Force Base Pelletizer was lost to a fire in 2007 and FNSB has not tracked paper since that time. Recycling options have grown in the FNSB since the 1990s. The borough Solid Waste webpage shares links to the Interior Alaska Green Star's business directory of recyclers.

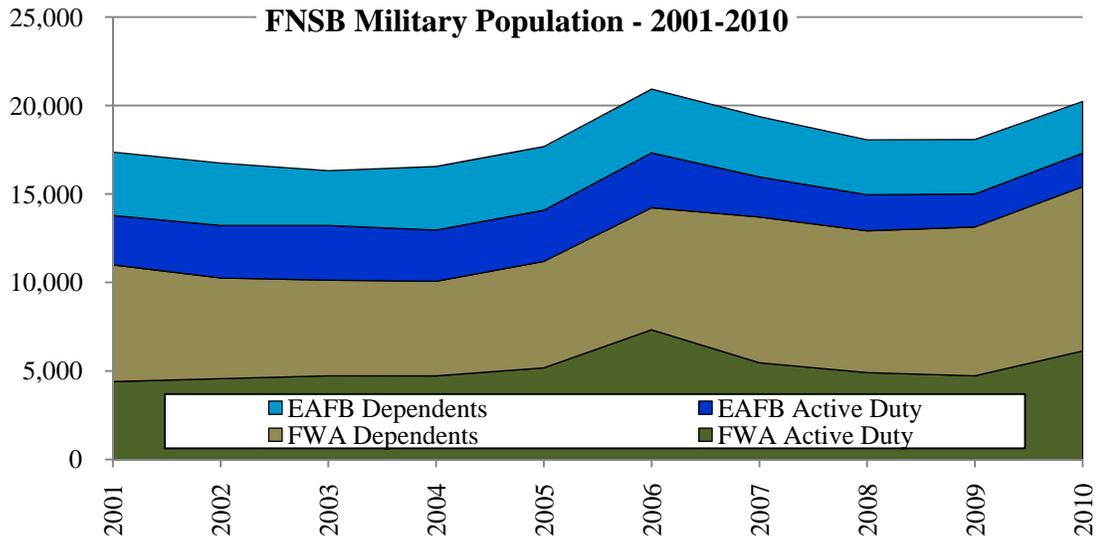
Military, University, Research and Technology

Military

Two military bases are located within the Fairbanks North Star Borough. Fort Wainwright Army Base and Eielson Air Force Base (AFB) provide mission support, joint operations training, arctic operations training, and cold climate testing services for the US Army and Air Force missions in Alaska and abroad. Additionally, 100 miles southeast of the FNSB, along the Richardson highway lays Fort Greely, which houses and provides mission support for the ground-based missile defense capabilities.

Fort Wainwright Army Base borders the City of Fairbanks to the east and is home to the 172nd Stryker Brigade Combat Team which is comprised of the 1st Battalion 17th Infantry, 2nd Battalion 1st Infantry, 4th Battalion 11th Field Artillery, 4th Squadron 14 Cavalry, 172nd Brigade Support Battalion, 52nd AT Company, 562nd Engineer Company, 21st Signal Company, and the 572nd MI Company. Other US Army Alaska units stationed at Fort Wainwright Army Base include the 1st Battalion 52nd Aviation, 4th Battalion 123rd Aviation, 203rd Personnel Services Battalion, 507th Signal Company, Northern Warfare Training Center, and the 9th Army Band.³⁹ Fort Wainwright Army Base is also the host to a number of mission support tenant units, including the 3rd Air Support Operations Squadron and MEDDAC/DENTAC units.

Figure 16: Military Population



SOURCE: FNSB Community Research, 4th Quarter yearly data.

Eielson AFB borders the City of North Pole to the east and is home to the 354th Fighter Wing. The 354th Fighter Wing is comprised of the 354th Operations Group, the 354th Maintenance Group, the 354th Mission Support Group, and the 354th Medical Group. Eielson AFB is also host to the Alaska Air National Guard’s 168th Aerial Refueling Wing and the 353rd Combat Training Squadron.⁴⁰

Fort Greely Army Base borders the community of Delta Junction to the south and is home to U.S. Army Space and Missile Defense Command units, Missile Defense Agency – Ground Based Midcourse Defense units, and provides training and support services for Alaska National Guard.

University

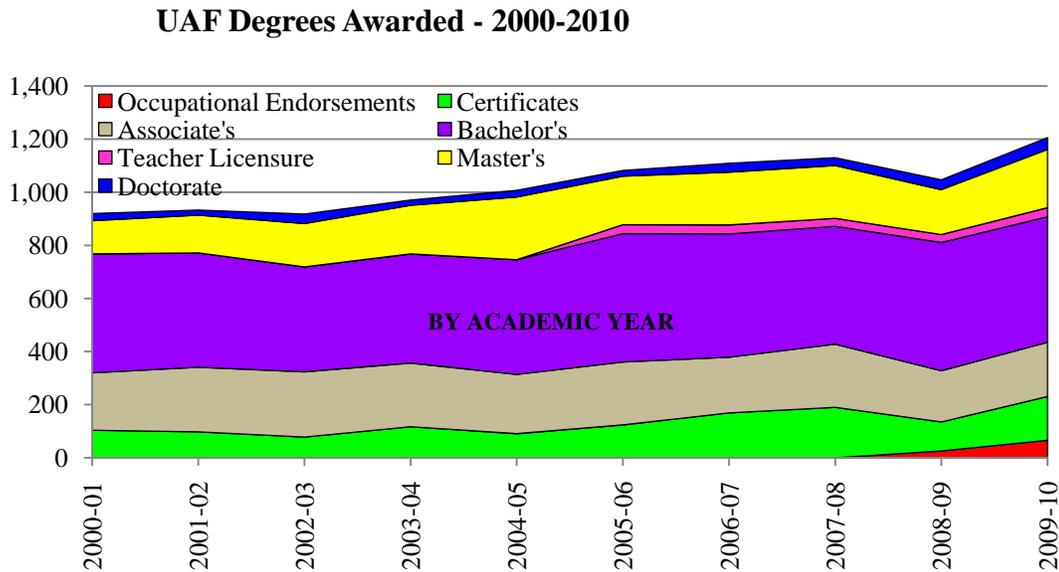
The University of Alaska Fairbanks (UAF) was founded in 1917 as the Alaska Agricultural College and School of Mines, and is a Land, Sea, and Space Grant institution. UAF is home to a seven major research units. These units include the Agricultural and Forestry Experiment Station, Arctic Region Supercomputing Center, the Geophysical Institute, the Institute of Marine Science, the Institute of Arctic Biology, the Institute of Northern Engineering, and the International Arctic Research Center. The Alaska Native Language Center and the University of Alaska Museum of the North are also located on UAF’s campus. UAF’s Geophysical Institute operates the Poker Flat Research Range, the only university-owned scientific rocket launching facility in the nation.⁴¹

Eight academic schools and colleges are housed within UAF. These include the College of Engineering and Mines, the College of Liberal Arts, the College of Natural Science and Mathematics, the College of Rural and Community Development, the School of Education, the School of Fisheries and Ocean Sciences, the School of Management, and the School of Natural

Resources and Agricultural Sciences. UAF offers 168 degrees and 33 certificates in 127 disciplines, and is the only doctoral degree granting institution in Alaska.

Between the close of the 2000-2001 and 2009-2010 academic years, the total number of degrees awarded annually by UAF has increased nearly 13% to 1,075 (Figure 17). Certificate degrees increased appreciably in this time period at 59% to 165 awarded. The total number of Associate and Bachelor degrees awarded decreased 6% to 204 and down 2% to 473 respectively during this period. The total number of Master's and Ph.D. degrees awarded during in this timeframe increased 75% and 67% to 219 and 45 respectively.

Figure 17: University of Alaska Fairbanks Degrees Awarded

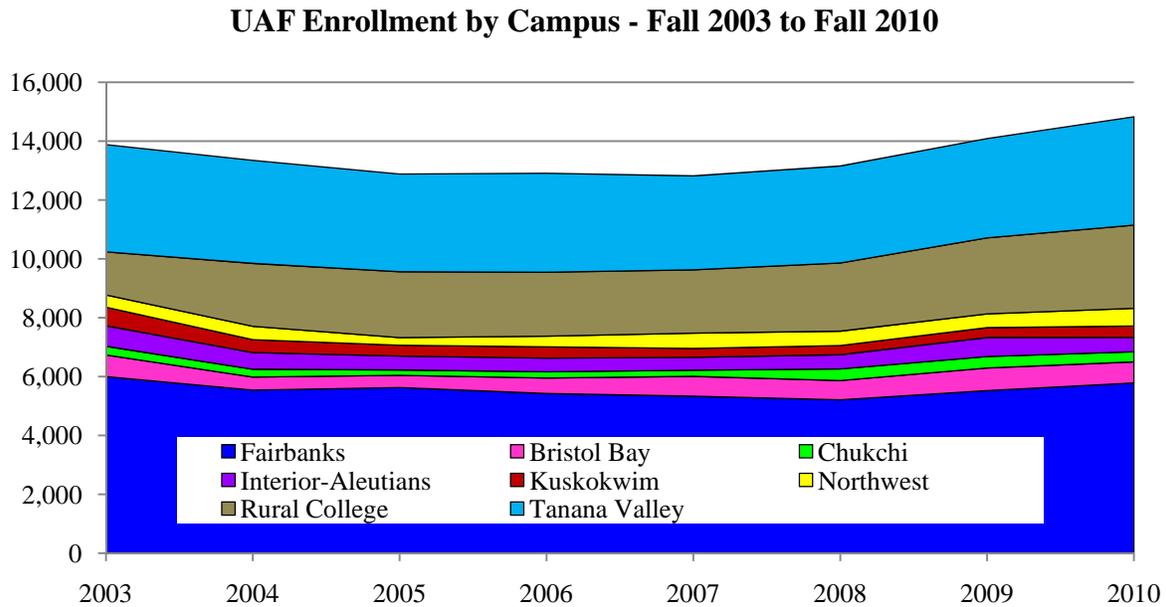


SOURCE: FNSB Community Research Center.

UAF encompasses eight campuses in rural and urban locations throughout the state. These campuses include Dillingham's Bristol Bay campus, Kotzebue's Chukchi Campus, Bethel's Kuskokwim Campus, Nome's Northwest Campus, Fairbanks Campus, the Interior-Aleutians Campus, and the Center for Distance Learning, as well as the UAF Community & Technical College in Fairbanks.

Between the fall semesters of 2004 and 2010, total enrollment in the UAF System has increased 7.9% to 9,855 students (Figure 18). During this same period enrollment at UAF's main campus in Fairbanks also increased 4.4% to 5,504 students.

Figure 18: University of Alaska Enrollment



SOURCE: University of Alaska Statewide System of Higher Education (UA in Review 2008).

Research and Technology

In 2010, University of Alaska, Fairbanks, established an Office of Intellectual Property and Commercialization to help commercialize research generated within the university.⁴² This includes research on arctic squirrels, blueberries, minerals and satellite mapping. There is a local group of investors that regularly meets with University researchers to learn about their products and investment opportunities.

The Cold Climate Housing Research Center (CCHRC) is a private non-profit corporation created by the home building community to facilitate the development, use, and testing of sustainable, durable, healthy, and cost-effective building technologies for people living in the Circumpolar North. In September 2006, Cold Climate Housing Research Center (CCHRC) finished construction of a cold weather research test facility and demonstration project on a 2.5 acre parcel within the 30 acre parcel UAF has identified for a research park. The Sustainable Northern Communities project was initiated in 2008 to address the needs for sustainable rural housing in northern climates. The project investigates, develops and incorporates many sustainable solutions that will benefit northern communities by demonstrating a culturally designed, affordable, replicable and simply constructed home that uses very little water or energy. The research will be housed in a new addition, currently in design. CCHRC is partnering with university researchers, industry experts and entrepreneurs to develop, test, and certify arctic and energy efficient construction techniques, materials, and products.⁴³

Agriculture and Forestry

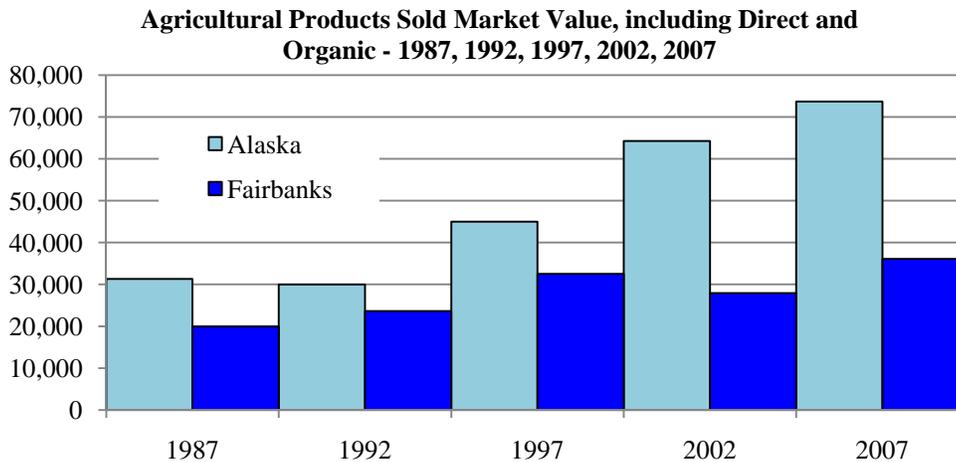
Agriculture

In the last decade, the Tanana Valley has produced 31.8% of Alaska’s agricultural products. Local farmers harvested 54.7% of the total Alaskan acreage farmed, and in the 2000s accounted for 31.8% of the average total crop production including approximately 10.3% of the State’s vegetable production. Greenhouse operations are prominent, producing both plants and vegetables. Grass, hay, barley, oats, vegetables (lettuce, carrots, cabbage and other vegetables), and potatoes are customary crops, and livestock includes beef, pork, mutton, milk and wool.

The number of farms in the FNSB area, including the Tanana Valley, increased 13.4% between 2002 and 2007.⁴⁴ During this same period, the number of farms statewide increased 12.6%. Land in farms by acre located within the FNSB increased 0.7 percent in this period. Statewide, land in farms declined 2.1 percent.

Market value of FNSB agricultural products sold increased by 29.2%. During this same period, the statewide market value of agricultural products sold increased 14.7%. Average market value of production per farm in the FNSB increased 33.9% compared with a 23.6% increase statewide (Figure 19).^{**}

Figure 19: Agricultural Products



SOURCE: U.S. Department of Agriculture, Census of Agriculture.

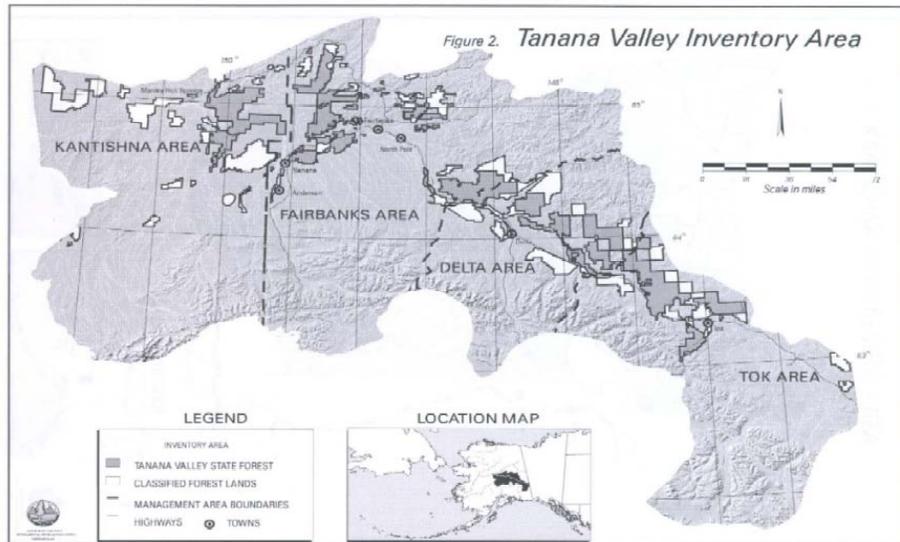
Forestry

The Tanana Valley State Forest covers approximately 1.8 million acres (Figure 20) and extends about 450 miles east from the City of Tanana at the confluence of the Tanana and Yukon rivers

^{**} The Census of Agriculture is done every five years.

to the Canadian border. Approximately 578,000 acres of this forest are within the FNSB's boundaries.

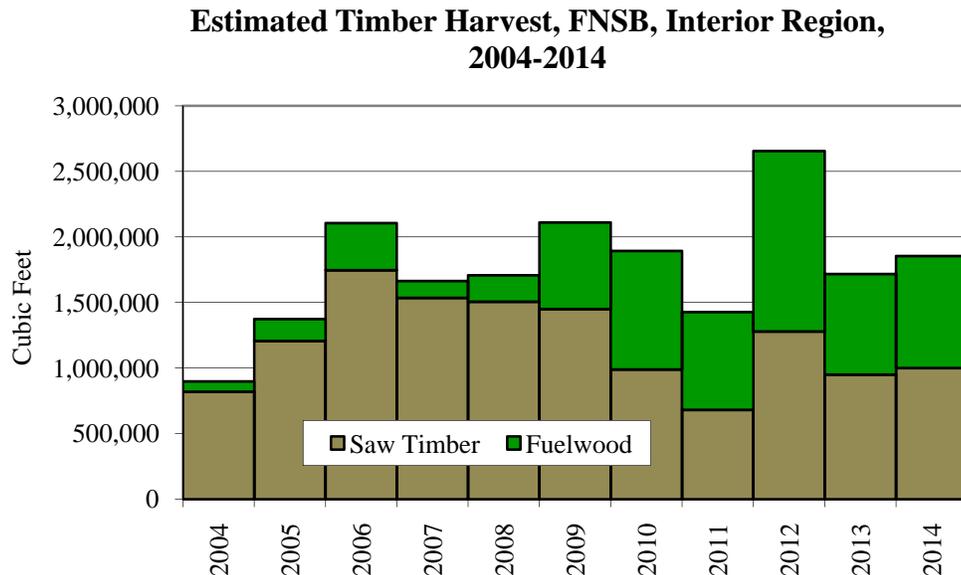
Figure 20: Forestry Inventory



SOURCE: Alaska Department of Natural Resources.

The FNSB is an important market for wood products, consuming an annual average of seven million board feet of graded dimensional lumber. Local mills supply a fraction of this product and typically produce rough, ungraded lumber such as house logs. Local secondary processors produce wooden bowls, chop sticks, paneling, and flooring.

Figure 21: Projected Timber Harvest



SOURCE: Alaska Department of Natural Resources, Division of Forestry.

The Alaska Department of Natural Resources Division of Forestry projects timber harvests in Fairbanks Region in an effort to assure a sustained yield of renewable forest resources and the integrated use of forest land. The current schedule will total approximately 600,000 to 1.2 million cubic feet of saw timber from 2010 and 2014 (Figure 21).⁴⁵ During this same period 700,000 to 1.3 million cubic feet of wood fiber will be harvested.

Mineral, Oil and Gas Development

Mineral Development

The FNSB serves as a staging area for much of the State’s mineral exploration and development. Three of the state’s largest mining operations (Usibelli, Fort Knox and Pogo) lie within 150 miles of the FNSB. The potential improvement of the Interior’s transportation systems will greatly increase the ability to develop these mineral resources and access more remote resources. As Interior Alaska’s mineral deposits are discovered and developed, the FNSB will provide labor expertise, construction equipment, and support services for these operations.

Refined gold production in the Eastern Interior Region of Alaska, including the FNSB, increased 8% between 2007 and 2009 to approximately 671,323 ounces from 621,783 ounces.⁴⁶ During this same period the statewide total for refined gold production increased 7.4% to 780,657 ounces from 726,933 ounces.

In 1997, Alaskan gold production by hard rock mines exceeded production of placer mines for the first time in over fifty years. Fort Knox Gold Mine is approximately 25 miles northwest of Fairbanks. The Fort Knox Mine is owned and operated by Fairbanks Gold Mining, Inc., a wholly owned subsidiary of Kinross Gold Corporation, and produces about 330,000 ounces of

gold per year. The Pogo Mine, operated by Teck Pogo Inc., is located 115 miles east of Fairbanks began operating in early 2006 and produced approximately 113,000 ounces of gold that year. The Pogo project is expected to produce in the region of 900,000 ounces of gold annually for approximately 12 years.⁴⁷

Usibelli Coal Mine (UCM) is headquartered in Fairbanks while the mine office is in the Denali Borough. Usibelli has a long history of serving the energy needs of the Fairbanks area. Usibelli has been in production for more than sixty years and is Alaska's only operating coal mine. Since 1943, UCM's annual mine production has grown from 10,000 tons to an average of 1.5 million tons of coal. About half of this annual production is transported by Alaska Railroad Corporation to the Seward Coal Terminal at the Port of Seward for export.

Mining continues to contribute significantly to Alaska's economy. This industry, which dates back to the late 19th century, remains profitable and viable. About five percent, or \$1.5 billion, of the state's gross economic product is directly attributable to Mineral development and mining activities.

Increased global mineral demand and resulting high minerals prices, have led to expanded exploration and development statewide, particularly in the mineral rich Eastern Interior / Fairbanks District. Statewide exploration expenditures for 2009 are estimated at \$180 million. Much of this exploration and development activity is occurring in close proximity to the Fairbanks District.⁴⁸

The Alaska State Department of Labor reports that the 2009 FNSB average monthly employment in the mining was 1,068 with average monthly wages of \$7,624.⁴⁹

Oil & Gas Development

The FNSB serves as an important staging area for oil and gas exploration, development, and production in Alaska's Northern and Interior Regions. The FNSB is the midpoint of the 800 mile Trans Alaska Pipeline System (TAPS) that runs from Prudhoe Bay south to Valdez. Since pipeline startup in 1977, Alyeska - TAPS' operator - has successfully transported more than 16 billion barrels of oil and natural gas liquid (NGL) representing 25% of the US domestic production. TAPS supplies two refineries located in the FNSB with Alaska North Slope (ANS) crude oil.

Flint Hills Resources' North Pole Refinery near Fairbanks has a crude oil processing capacity of about 220,000 barrels per day. It processes North Slope crude oil and supplies gasoline, jet fuel, heating oil, diesel, gasoil and asphalt to Alaska markets. About 60 percent of the refinery's production is destined for the aviation market. Flint Hills Refinery provides all the gasoline in the FNSB (all grades: regular, mid-grade and premium).

The company also owns and operates products terminals in Fairbanks and Anchorage that store and distribute asphalt, fuel oils, diesel, jet fuel and gasoline refined at the North Pole Refinery. The Anchorage Terminal receives products from the North Pole Refinery via Alaska Railroad tank cars, annually offloading about 22,000 rail cars. That product is then distributed locally and to locations along Alaska's coastline. The Anchorage terminal facility can store more than 700,000 barrels.⁵⁰

The Petro Star North Pole Refinery is a wholly owned subsidiary of Arctic Slope Regional Corporation and hold bragging rights to being the only Alaskan-owned refining and fuel marketing operation in the state. Petro Star is a 17,000-barrel-per-day facility, producing kerosene, heating oil, lubricants, plus diesel and jet fuels for residential, commercial, industrial and military customers.⁵¹ Petro Star supplies about two-thirds of the heating oil consumed in the FNSB.

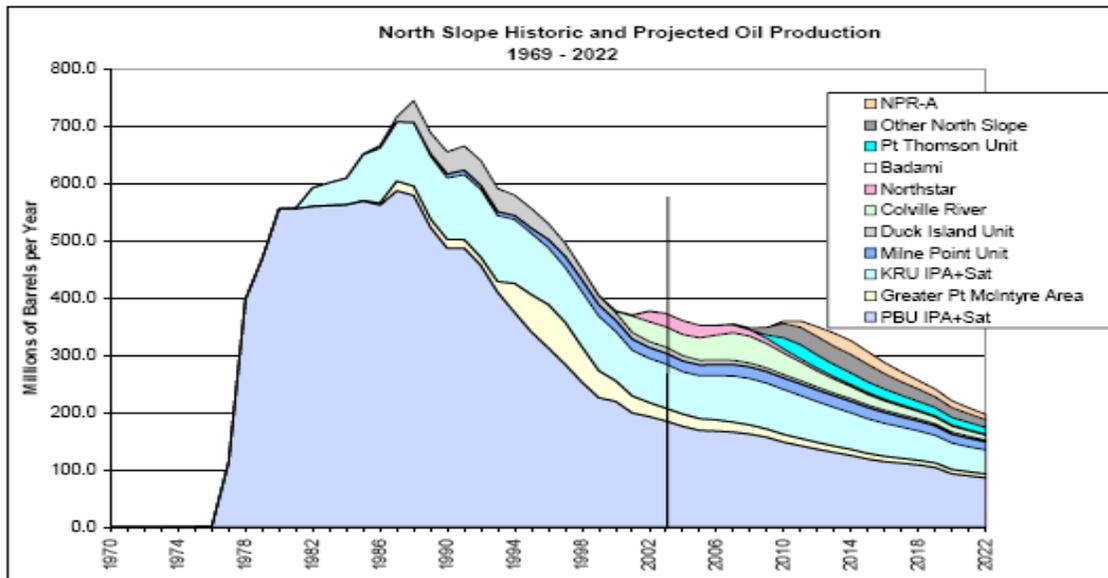
ANS crude is taken from the TAPS and refined into jet fuel, gasoline, heating oil and other refined products. These petroleum products supply regional demand and are shipped via rail to Anchorage and international locations.⁵² The Alyeska Pipeline Service Company, headquartered in Anchorage, maintains, upgrades, and monitors the TAPS, operates a pump station, and a maintenance / spill response base in the FNSB.⁵³

Oil and gas deposits comparable to those of Cook Inlet, have been identified in the Yukon Flats region. The USGS reports that this region, 200 miles from Fairbanks, contains 5.5 trillion cubic feet of natural gas and 173 million barrels of oil. Development and production of these resources are pending resolution of land and environmental concerns.

Exploration of several oil and natural gas deposits in the Interior region are currently underway. A consortium of energy, oil and gas, and ANCSA Regional Native corporations are currently exploring a 500,000 acre site in the Nenana Basin with estimated deposits in excess of three trillion cubic feet of recoverable natural gas. In addition to development of oil and gas reserves in the Interior, other promising prospects for oil and gas development exist in Alaska's North Slope.

Production from North Slope oils fields peaked in 1988 at 2.2 million barrels per day in 1998.⁵⁴ Currently, ANS production remains steady at just below one million barrels per day. The declines in production rates from the large Prudhoe and Kaparuk fields have been redressed through development of satellite fields and advances in drilling technology.⁵⁵ Exploration efforts are forecast to result in the addition of about 2.9 billion barrels of economically recoverable oil and 12 trillion cubic feet of economically recoverable gas. Oil exploration is expected to target primarily oil resources in the Central Arctic on state lands and adjacent state waters, NPRA, and the Beaufort Sea OCS. Gas exploration is expected to begin in earnest when a gas pipeline is assured and will initially target the Central Arctic foothills area, south of the current oil producing area. The expected oil and gas reserve additions are widely distributed in all the geographic areas.⁵⁶ The Alaska State Division of Oil and Gas forecasts North Slope oil production will remain at its current level of 350 million barrels per year until 2010 (Figure 22).⁵⁷ Sustained exploration and drilling activity is expected to continue as oil development begins in the National Petroleum Reserve-Alaska (NPR-A). Exploration and development of petroleum resources in the Arctic National Wildlife Reserve (ANWR) are pending Congressional approval.

Figure 22: Oil Production



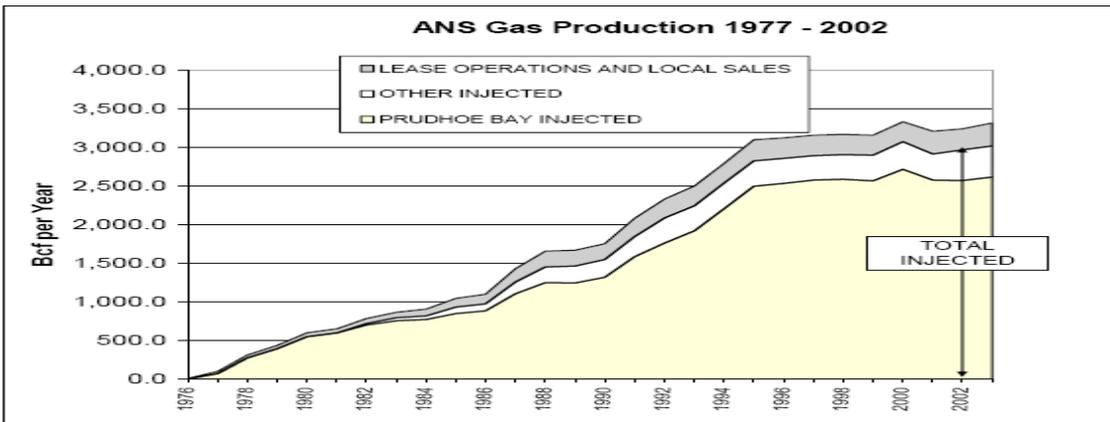
SOURCE: Alaska Department of Natural Resources.

With continued decline in production of oil from the large fields on the North Slope, interest in developing and marketing the state’s natural gas reserves continues to grow. There are currently 35 trillion cubic feet (tcf) of known reserves of natural gas in the Prudhoe Bay and Point Thompson area with much of current production being re-injected into the ground to maximize the recovery of oil from existing fields. Some gas is used by oil producer lease operations or sold locally (see Figure 23). The federal government estimates that more than 240 tcf of technically recoverable natural gas is present beneath onshore and offshore areas of Alaska’s Arctic in undiscovered conventional reservoirs. These estimates do not include unconventional reservoirs such as shale gas and natural gas hydrates, which likely contain hundreds of additional tcf of gas.

Construction of a large-diameter pipeline to transport these natural gas reserves to market is estimated to cost more than \$20 billion. Sustained high demand for natural gas will continue to provide economic incentive for pipeline construction. Currently several proposals exist for construction and routing of a natural gas pipeline to supply both domestic and international markets.⁵⁸

The Alaska Department of Labor reports that Pipeline transportation employment was between 25 and 49 in 2010. And Manufacturing of petroleum and coal was between 100 and 249 in 2010. Total mining employment was 1,117 in 2010.⁵⁹

Figure 23: ANS Gas Production



SOURCE: Alaska Department of Natural Resources.

Visitor Industry

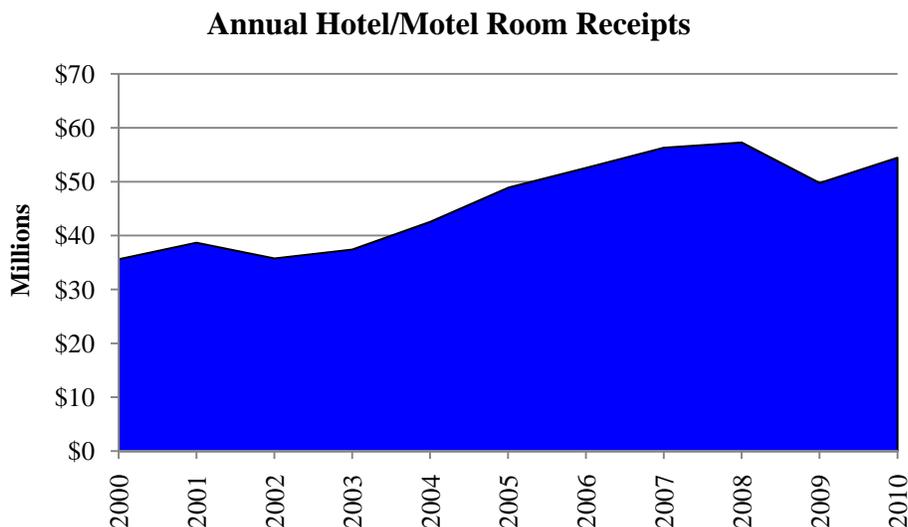
Fairbanks is a gateway for travelers from Asia, Europe, and the continental United States. The proximity of Denali National Park has made Fairbanks a popular overnight destination for many cruise and tour companies Alaskan. These tours typically include a combination of travel options to Fairbanks including air, rail, and motor coach transportation. Additionally, Fairbanks is popular gateway for tours into Alaska's Northern Region. Visitors to Fairbanks can take a tour of a rural Alaskan community and experience firsthand the region's rich cultural heritage and tradition.

While the majority of visitors arrive during the summer months, Fairbanks is succeeding in developing itself as a popular destination for winter tourism. Winter tourism in Fairbanks has benefited from the proximity of world-class cross-country skiing, snowmobiling, dog-mushing, winter festivals and numerous hot springs. The World Ice Art Championships, held annually in March, draw artists and visitors from around the globe. Additionally, Fairbanks is one of the premier locations in Alaska for visitors viewing the Northern Lights.

The role of the visitor industry in the FNSB's economy continues to grow as a tourist and business destination. Since 2005, gross revenue collected by hotel and motel operators has increased 11.4% to \$54,452,325 in 2010 (Figure 24).⁶⁰

Additionally, the total number of visitors to the FNSB during the summer months has increased 30% in 2006 to approximately 390,000.⁶¹ During this same period, visitors arriving in Fairbanks via cruise related tour packages increased 23% to approximately 161,000 people while non-cruise visitation increased 5%. A new survey will be performed in 2011 with results reported in 2012.

Figure 24: Hotel/Motel Revenues



SOURCE: FNSB Community Research Center.

Alaska Native Corporations

Alaska Native Corporations play an important role in the FNSB economy. These corporations own, operate, and manage various development projects and businesses in the FNSB and statewide. Additionally, several Alaska Native Regional Corporations operate corporate subsidiaries in the FNSB. These Native Corporations include Ahtna Inc., Arctic Slope Regional Corporation, Bristol Bay Native Corporation, Calista Corporation, Chugach Alaska Corporation, Cook Inlet Region Inc., and NANA Regional Corporation. Regional and Village corporations serve their shareholders through dividends, workforce training, employment opportunities, charitable contributions, and social and cultural leadership.

Doyon Limited (Doyon), an Interior Regional Native Corporation, is headquartered in Fairbanks⁶² and is regularly listed as one of the state's top 49 Alaskan owned and operated businesses. Doyon is the largest private landowner in Alaska with 12.5 million acres of land in Interior Alaska and has over 18,000 shareholders. Under the provisions of the Alaska Native Claims Settlement Act (ANCSA) Doyon will receive approximately 12.5 million acres across Interior Alaska. To date Doyon has received title to nearly 10 million acres, primarily around the 34 villages within the region. Management of Doyon lands is focused on protection of traditional shareholder uses, and responsible economic development of natural resources.

Doyon operates several businesses and foundations in Fairbanks which include: *Doyon Oil Field Services*: drilling operations, security, remote camp services, engineering and consulting, and pipeline construction; *Government Services*: security, logistics, project services, communications, program management, and technical services; *Tourism*: Kantishna Roadhouse and Wilderness, Denali River Cabins, Doyon/ARAMARK; and *Subsidiaries*: Cherokee General Corporation, D.C. Metro, Doyon Facilities, Doyon Universal Services (DUS), and Doyon Utilities.

Over the past 25 years Doyon has entered into a number of exploration ventures to determine mineral development potential on Doyon lands. In addition to precious and base metals exploration, Doyon's natural resources program includes sand, gravel and quarry rock sales. Doyon is also involved in development of oil, gas and coal resources, as well as forestry.

Tanana Chiefs Conference (TCC) is the Interior's Regional Alaska's Native non-profit organization and provides political, social, healthcare and business development services for the 42 Interior Villages. TCC is headquartered in Fairbanks and works to meet the health and social service challenges for more than 10,000 Alaska Natives spread across a region of 235,000 square miles in Interior Alaska. TCC operates the Chief Andrew Isaac Health Center, Dental and Eye Center, plus Diabetes and Rural Health outreach. TCC administers home care and community health nursing services. In 2011, a new TCC Health Center broke ground for construction with projected completion in 2014. Additionally, TCC operates a business development center that provides technical assistance and loans to Interior Region's entrepreneurs.

Chapter Four - Cluster Analysis

Background and Theory

The purpose of this analysis is to identify the most competitive industries in the Fairbanks North Star Borough (FNSB), identify their inputs and then offer suggestions on how to improve the linkages between these industries in order to enhance the productivity and thus enhance the strongest industries within the region.

In addition to identifying the most competitive sectors within the FNSB we will also identify the least competitive and discuss the feasibility of making them more competitive on a national level.

Identification

In order to rank the local industrial sectors in terms of national competitiveness data collected by the Minnesota IMPLAN Group, Inc (MIG, Inc) was used, along with an identification methodology known as Location Quotient (LQ). LQ works by comparing the percentage of workers employed in a given sector to the percentage of workers in that sector nationally. Industries in which the local percentage of employment is 25% greater than the national percentage, $LQ > 1.25$, we classify as being strong.

Prior to applying the LQ method local and national data from the IMPLAN group was aggregated based on the North American Industry Classification System (NAICS) 2 digit level. NAICS is the standard industrial classification system used by business and government to classify and measure economic activity in North America. (See Table 1).

Table 1: LQ

LOCATION QUOTIENT

Table 1

NAICS	Industry	Local Employment %	National Employment %	Location Quotient
21	Mining	2.80%	0.50%	5.551
92	Government & non NAICs	35.90%	13.11%	2.739
22	Utilities	0.74%	0.33%	2.22
48-49	Transportation & Warehousing	5.21%	3.79%	1.374
72	Accommodation & Food Services	7.40%	6.75%	1.097
44-45	Retail Trade	10.81%	10.71%	1.009
23	Construction	6.18%	6.38%	0.969
71	Arts- Entertainment & Recreation	1.80%	2.02%	0.891
62	Health & Social Services	8.61%	9.97%	0.863
53	Real Estate & Rental	3.21%	3.97%	0.807
81	Other Services	3.90%	5.55%	0.703
51	Information	1.21%	2.00%	0.605
56	Administrative & Waste Services	3.14%	6.14%	0.512
54	Professional- Scientific & Tech Services	3.02%	6.77%	0.446
61	Educational Services	0.85%	2.06%	0.415
42	Wholesale Trade	1.39%	3.68%	0.377
11	Ag, Forestry, Fish & Hunting	0.80%	2.19%	0.365
52	Finance & Insurance	1.62%	4.69%	0.346
31-33	Manufacturing	1.28%	8.31%	0.154
55	Management of Companies	0.13%	1.07%	0.118

Table 1 show that four industries, Mining, Government, Utilities and Transportation sectors meet the LQ criteria for being competitive. Unfortunately LQ alone is not enough classify competitive industry, any identification must also be based on sound economic theory and principle.

Using basic economic theory and common sense both Government and Utilities can be eliminated from consideration. While it is true that some utilities sell their services and products outside of the FNSB the bulk of their business is local. Any export is thought to be a small relative to total output. Much the same is true of Government. While government is overly represented, in terms of employment, in the FNSB it is not a sector that a stable and thriving economy can or should be based on. Local government is funded largely from local tax dollars thus it in and of itself usually cannot be grown with have a negative impact. State and federal government employment often has positive impact on local economies but local municipalities have very little influence over them. As Fairbanks is a regional hub for state and federal government, some of this is “exported.” However, this is always at risk. For reasons such as these it is best to leave the Government sector out of this discussion. This leaves Mining and Transportation as two areas to focus on.

Not only do we want to focus on improving sectors where the FNSB is already strong but analyze relatively weak sectors with hopes of improving them. On the lower end of the spectrum we have Finance, Manufacturing and Management of companies. Finance and Management of

companies tend to be secondary industries that thrive on other sectors. Thus that leaves Mining and Transportation at the upper end and Manufacturing at the lower end to be analyzed.

Now that our targets sectors have been identified we can examine the inputs to those industries and segment them into clusters. The first cluster will consist of the Mining industry and the industries that supply their major inputs.

Table 2: Mining

MINING
Table 2

Industry	Inputs	Local Inputs	RPC	Input %
Mining	51.340	40.930	0.797	32.25%
Manufacturing	42.700	33.320	0.780	26.82%
Real Estate & Rental	19.510	13.080	0.670	12.25%
Management of Companies	11.590	1.200	0.104	7.28%
Professional- Scientific & Tech Services	10.190	5.110	0.501	6.40%
Transportation & Warehousing	5.130	3.980	0.776	3.22%
Finance & Insurance	4.490	1.750	0.390	2.82%
Wholesale Trade	4.030	1.260	0.313	2.53%
Arts- Entertainment & Recreation	3.810	3.020	0.793	2.39%
Utilities	3.170	3.090	0.975	1.99%
Administrative & Waste Services	1.000	0.500	0.500	0.63%
Information	0.610	0.320	0.525	0.38%
Retail Trade	0.570	0.480	0.842	0.36%
Government & non NAICs	0.420	0.410	0.976	0.26%
Other Services	0.380	0.290	0.763	0.24%
Accommodation & Food Services	0.150	0.130	0.867	0.09%
Educational Services	0.090	0.030	0.333	0.06%
Construction	0.020	0.020	1.000	0.01%
Ag, Forestry, Fish & Hunting	0.010	0.000	0.000	0.01%

Table 2 lists the input industries for the Mining sector. The input column lists the dollar value of the inputs the Mining industry draws from that particular sector. The local inputs column is the dollar value of the inputs that are purchased locally. The RPC is the percentage of the given input that is purchased locally.⁶³ The input percent is the ratio of the given industries input to the total inputs require but the local sector under consideration.

In the case of Mining over 70% of its total required inputs are provided by three sectors: Mining, Manufacturing and Real Estate. Thus we can segment those three sectors into a cluster.

Table 3: Transportation

TRANSPORTATION
Table 3

Industry	Inputs	Local Inputs	RPC	Input %
Manufacturing	79.840	62.300	0.780	35.95%
Transportation & Warehousing	50.380	39.030	0.775	22.68%
Professional- scientific & tech services	17.480	8.760	0.501	7.87%
Administrative & waste services	15.170	7.590	0.501	6.83%
Finance & insurance	12.960	5.060	0.390	5.83%
Real estate & rental	12.920	8.660	0.671	5.82%
Wholesale Trade	8.760	2.750	0.313	3.94%
Information	5.450	2.860	0.525	2.45%
Accommodation & food services	3.590	3.080	0.859	1.62%
Management of companies	3.080	0.320	0.104	1.39%
Other services	2.980	2.280	0.765	1.34%
Government & non NAICs	2.510	2.430	0.969	1.13%
Retail trade	2.380	2.010	0.845	1.07%
Utilities	1.600	1.560	0.975	0.72%
Mining	1.370	1.090	0.797	0.62%
Construction	1.130	1.130	1.000	0.51%
Educational services	0.300	0.120	0.388	0.14%
Arts- entertainment & recreation	0.120	0.090	0.792	0.05%
Health & social services	0.100	0.080	0.822	0.05%
Ag, Forestry, Fish & Hunting	0.000	0.000	0.111	0.00%

Table 3 shows that top four inputs industries for Transportation account for nearly 75% of the sector total inputs thus they can be classified into a cluster.

Table 4: Manufacturing

MANUFACTURING
Table 4

Industry	Inputs	Local Inputs	RPC	Input %
Manufacturing	711.770	555.410	0.780	53.48%
Mining	127.480	101.640	0.797	9.58%
Wholesale Trade	107.410	33.650	0.313	8.07%
Professional- Scientific & Tech Services	84.040	42.130	0.501	6.31%
Transportation & Warehousing	52.640	40.770	0.775	3.96%
Management of Companies	51.850	5.390	0.104	3.90%
Ag, Forestry, Fish & Hunting	47.360	5.270	0.111	3.56%
Finance & Insurance	29.420	11.480	0.390	2.21%
Real Estate & Rental	26.730	17.920	0.671	2.01%
Utilities	20.890	20.370	0.975	1.57%
Information	19.730	10.360	0.525	1.48%
Administrative & Waste Services	12.530	6.270	0.501	0.94%
Other Services	12.180	9.320	0.765	0.92%
Accommodation & food services	10.340	8.880	0.859	0.78%
Government & non NAICs	6.640	6.430	0.969	0.50%
Construction	3.630	3.630	1.000	0.27%
Retail Trade	3.270	2.760	0.845	0.25%
Arts- Entertainment & Recreation	1.690	1.330	0.792	0.13%
Educational Services	1.290	0.500	0.388	0.10%

Once again the top three input industries account for more that 70% of given sectors inputs, thus they can be classified together as a local cluster.

Analysis

Now that the target clusters have been identified they can be examined more closely. The theory of cluster analysis states that once targeted clusters have been identified the information can be used to strengthen the links between intra-clusters industries. One possible way intra-cluster linkages can be improved is through the formation of local “cluster forums” in which representatives from stake holder industries can meet with an eye towards coordinating future business ventures thereby increasing the overall productivity of all those involved. These secondary effect forums often lead to an increase in the RPC for the exporting industries thus increasing the gross borough product (GBP) in the process.

CHAPTER THREE – GOALS & OBJECTIVES

VISION

To improve the Fairbanks North Star Borough residents' quality of life and standard of living by developing goals, establishing Objectives and implementing strategies that sustain, enhance or increase economic and social opportunities for local residents.

TOP THREE PRIORITIES, OBJECTIVES AND STRATEGIES

COMMUNITY PRIORITY #1: Lower and stabilize FNSB energy costs by expanding the energy portfolio with a focus on local resources.

OBJECTIVE: Bring affordable, sustainable natural gas to the Fairbanks North Star Borough.

- *Actively support construction of a natural gas pipeline through the Interior, with particular emphasis on assuring maximum benefit to Alaska's communities and location of construction, operation, and regulatory headquarters in Fairbanks.*
 - Advocate for consideration of take-off ports at the Yukon River, Fairbanks, Delta and other Interior and Northern locations that support economic development in the Interior and Northern regions.
 - Advocate for responsible development of petrochemical industry in the Borough.
 - Support the development of a natural gas pipeline that would reduce the cost of energy for transportation, space heating and electric power in Interior Alaska.

OBJECTIVE: develop local woody bio-mass industry to provide energy in the Borough.

- *Develop infrastructure to support local woody bio-mass industry.*
 - Develop process to gather and use woody bio-mass from clearing fire breaks, section lines, power lines, etc. in locally manufactured products.
 - Work with local, state and federal regulators to obtain 10 year leases to harvest timber.
- *Develop cooperative marketing program to market woody bio-mass products locally and regionally.*
- *Educate people about how to use woody bio-mass for fuels, dry wood, etc.*
- *Research feasibility of developing woody bio-mass to liquids plant.*

OBJECTIVE: use locally produced coal derived energy in the Fairbanks North Star Borough.

- *Support construction of a coal to gas liquids plant.*

OBJECTIVE: Support geothermal energy production in and around the Interior region.

OBJECTIVE: Find ways to recover and use waste heat to heat buildings and greenhouses in the Fairbanks North Star Borough.

OBJECTIVE: Support University of Alaska Fairbanks research to find new ways to provide affordable clean energy in the Fairbanks North Star Borough and surrounding regions.

- *Support gas, coal and woody bio-mass to liquids research at University of Alaska, Fairbanks.*
- *Support research and development into renewable and new alternative energy technology.*

COMMUNITY PRIORITY #2: Anchor the missions of Fort Wainwright, Eielson Air Force Base, Fort Greeley, and Clear Air Force Stations and encourage increased utilization of the existing facilities.

OBJECTIVE: Actively support the missions of Fort Wainwright, Eielson Air Force Base, Fort Greeley and Clear Air Force Station and retention of these military activities.

- *Support deployment of the National Missile Defense System at Fort Greeley with support facilities at Eielson Air Force Base, and Fort Wainwright.*
- *Work with military leadership in preparing civilian and military communities for and during deployment.*
- *Support study of land trades for possible expansion of Fort Wainwright.*

OBJECTIVE: Support and promote the growth of military installations in Interior Alaska.

- *Actively support needed infrastructure development for Ft. Wainwright and Eielson to meet training and personnel mission needs.*
- *Actively support military and civilian activities that would increase training exercises in the Interior.*
- *Actively support increased military cold weather, personnel, equipment, and weapons research in the Interior.*
- *Pursue continued development of the nation's largest geographically diverse joint military training area, the Joint Pacific Alaska Range Complex (JPARC).*
- *Work with community to solve PM_{2.5} issues to ensure operational utility of each base.*

COMMUNITY PRIORITY #3: Develop regional cooperative marketing program to create a larger market for goods and services produced in the Borough.

OBJECTIVE: Create and market Borough products, service, expertise and industries as a regional brand for broad community use.

- *Educate buyers about locally produced products and services.*
- *Educate interested parties about areas of expertise: arctic engineering and research, mining, tourism, regional hub, arctic produce, etc.*

OBJECTIVE: Research market for locally produced products and services.

- *Research quality, quantity, and product characteristics of locally available products or services.*

OBJECTIVE: Partner with local business support organizations to develop sustainable funding and staff support for development and maintenance of a cooperative marketing program.

- *Support development of a clearing house where local producers can easily sell their product.*

INDUSTRY CLUSTER DEVELOPMENT PRIORITIES

AGRICULTURE & FORESTRY INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: Affordable available capital for start-ups.

OBJECTIVE: Identify and develop sources of public and private capital for the development and expansion of agricultural and forestry businesses in the Borough.

- *Work to modify laws and regulations to allow agriculture land to be acquired as fee simple title for the purposes of financing.*

INDUSTRY PRIORITY #2: Support land use policies that encourage agricultural forestry production.

OBJECTIVE: Research appropriate federal, state and local planning approaches to encourage development of agriculture and forestry markets in the Borough.

- *Research impact of existing federal, state and local regulations.*
- *Develop and implement strategies to change these regulations that act as barriers to development.*
- *Encourage the involvement of the commercial farming and forestry community in all major infrastructure projects within the borough, to ensure that consideration is given to the needs of commercial agriculture infrastructure.*

INDUSTRY PRIORITY #3/COMMUNITY PRIORITY #3: Develop regional cooperative marketing program to create a larger market for goods and services produced in the Borough.

OBJECTIVE: Create and market Borough products, services, expertise and industries as a regional brand for broad community use.

- *Educate buyers about locally produced products and services.*
- *Educate interested parties about areas of expertise: arctic engineering and research, mining, tourism, regional hub, arctic produce, etc.*

OBJECTIVE: Research market for locally produced products and services.

- *Research quality, quantity, and product characteristics of locally available products or services.*

OBJECTIVE: Partner with local business support organizations to develop sustainable funding and staff support for development and maintenance of a cooperative marketing program.

- *Support development of a clearing house where local producers can easily sell their product.*

COLD CLIMATE / ARCTIC RESEARCH INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: Recognize and build capacity through human and physical partnerships (private, university, state, and international).

OBJECTIVE: Support public and private research organizations that utilize the Interior Alaskan environment for research and product development.

- Support development of cold climate research & test facilities.
- Support public and private research organizations that utilize the Interior Alaska environment for research and product development.
- Promote establishment of a technology accelerator to aid and assist technology transfer.
- Develop a research park and other commercialization infrastructure to attract private industry investors to the region.

INDUSTRY PRIORITY #2: Promote research capacity nationally and internationally.

OBJECTIVE: Ensure cold climate and arctic research expertise is included in cooperative marketing efforts.

- *Identify and promote logistical, environmental and other advantages of the FNSB to attract technology-related industries.*

OBJECTIVE: Promote and expand Arctic Regional Super Computer as part of technology cluster development.

INDUSTRY PRIORITY #3: Deliver tangible, focused results - create businesses, jobs – lower cost of living, improved quality of life.

OBJECTIVE: Support organizations, businesses, individuals and governing bodies that promote the growth of technology and research in Interior Alaska.

- Improve both air and water quality in the borough by advancing and supporting development and implementation of all technologies that are beneficial for our climate and locale.
- Support development of highly effective technology transfer at UAF.
- Promote commercialization of research and intellectual property from UAF or other Alaskan research institutions.

ENERGY INDUSTRY CLUSTER

INDUSTRY PRIORITY #1/COMMUNITY PRIORITY #1: Lower and stabilize FNSB energy costs by expanding the energy portfolio with a focus on local resources.

OBJECTIVE: Bring affordable, sustainable natural gas to the Fairbanks North Star Borough.

- *Actively support construction of a natural gas pipeline through the Interior, with particular emphasis on assuring maximum benefit to Alaska's communities and location of construction, operation, and regulatory headquarters in Fairbanks.*
- Advocate for consideration of take-off ports at the Yukon River, Fairbanks, Delta and other Interior and Northern locations that support economic development in the Interior and Northern regions.
- Advocate for responsible development of petrochemical industry in the Borough.
- Support the development of a natural gas pipeline that would reduce the cost of energy for transportation, space heating and electric power in Interior Alaska.

OBJECTIVE: develop local woody bio-mass industry to provide energy in the Borough.

- *Develop infrastructure to support local woody-bio-mass industry.*
- Develop process to gather and use woody bio-mass from clearing fire breaks, section lines, power lines, etc. in locally manufactured products.
- Work with local, state and federal regulators to obtain 10 year leases to harvest timber.
- *Develop cooperative marketing program to market woody bio-mass products locally and regionally.*
- *Educate people about how to use woody bio-mass for fuels, dry wood, etc.*
- *Research feasibility of developing woody bio-mass to liquids plant.*

OBJECTIVE: use locally produced coal derived energy in the Fairbanks North Star Borough.

- *Support construction of a coal to gas liquids plant.*

OBJECTIVE: Support geothermal energy production in and around the Interior region.

OBJECTIVE: Find ways to recover and use waste heat to heat buildings and greenhouses in the Fairbanks North Star Borough.

OBJECTIVE: Support University of Alaska Fairbanks research to find new ways to provide affordable clean energy in the Fairbanks North Star Borough and surrounding regions.

- *Support gas, coal and woody bio-mass to liquids research at UAF.*
- *Support research and development into renewable and new alternative energy technology.*

INDUSTRY PRIORITY #2: Develop industries around existing local resources, value added processing of woody bio-mass, gas-to-liquids, and natural gas.

OBJECTIVE: Develop local woody bio-mass industry.

- *Market locally produced wood products.*
- *Educate people about how to use woody bio-mass for fuels, dry wood, etc.*

- *Make productive use of the woody bio-mass from fire breaks. Section lines, power lines (waste wood use fire and disease killed).*

OBJECTIVE: Develop industry providing natural gas as vehicular energy source in the Fairbanks North Star Borough.

OBJECTIVE: Develop coal and natural gas byproducts.

- *Support gas, coal and woody bio-mass to liquids plant.*

INDUSTRY PRIORITY #3: Position Interior as an energy research and development hub for Arctic research.

OBJECTIVE: Become Center of Excellence for arctic energy research and development.

- *Turn alternative energy research being performed by UAF, CCHRC, ACEP, INE, etc. into reality.*
 - Support Cold Climate Housing Research in developing affordable construction and retrofit solutions to interior and northern building and heating challenges.
 - Support UAF technology transfer efforts.
 - Support Alaska Center for Energy and Power.
 - Support development of small scale energy systems.
- *Continue to research use of coal and woody bio-mass to liquids technology as long term supply for liquid fuels.*

MILITARY INDUSTRY CLUSTER

INDUSTRY PRIORITY #1 / COMMUNITY PRIORITY #2: Anchor the missions of the Fort Wainwright, Eielson Air Force Base, Fort Greeley, and Clear Air Force Station and encourage increased utilization of existing facilities.

OBJECTIVE: Actively support the missions of Fort Wainwright, Eielson Air Force Base, Fort Greeley and Clear Air Force Station and retention of these military activities.

- *Support deployment of the National Missile Defense System at Fort Greeley with support facilities at Eielson Air Force Base, and Fort Wainwright.*
- *Work with military leadership in preparing civilian and military communities in preparation for, and during, deployment.*
- *Support study of land trades for possible expansion of Fort Wainwright.*
- *Support implementation of Alaska Military Force Advocacy and Structure Team (AMFAST).*
- *Work with community to solve PM_{2.5} issues to ensure operational utility of each base.*

OBJECTIVE: Military Development – Support and promote the growth of military installations in Interior Alaska.

- *Actively support needed infrastructure development for Ft. Wainwright and Eielson to meet training and personnel mission needs.*
- *Actively support military and civilian activities that would increase training exercises in the Interior.*
- *Actively support increased military cold weather, personnel, equipment, and weapons research in the Interior.*
- *Pursue continued development of the nation's largest geographically diverse joint military training area, the Joint Pacific Alaska Range Complex (JPARC).*

INDUSTRY PRIORITY #2: Pursue continued development of the nation's largest geographically diverse joint military training area, the Joint Pacific Alaska Range Complex (JPARC).

OBJECTIVE: Support Road/Rail access south from the programmed bridge project alongside the JPARC range complex on the west side of the Tanana river, eventually to link up on the east side again with the active range areas currently in use just outside of Delta Junction.

INDUSTRY PRIORITY #3: Support the transition to an active association air tanker mission for 168th Air National Guard Wing.

OBJECTIVE: Lobby to get early beddown of the next new Air Force tanker at Eielson and do the 168th wing conversion to an associate unit as part of the beddown much like it was done for the C-5 at Elmendorf.

MINING INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: Bring affordable energy to the FNSB and surrounding areas.

OBJECTIVE: Develop and market solutions to bring affordable energy to rural Alaska.

- *Pursue coal/gas to liquids plant in FNSB.*
- *Continue to research use of coal and woody bio-mass to liquids technology as long term supply for liquid fuels.*

INDUSTRY PRIORITY #2: Support current and new mining activity.

OBJECTIVE: Support further expansion and development of Alaska's mineral industries.

- *Include FNSB as Alaska's mining center in cooperative regional marketing efforts.*
- *Actively support mineral mapping and development in Interior and Northern Alaska.*
 - *Actively support continued development of the Pogo, Ft. Knox, Livengood, and Usibelli mines.*
 - *Support further expansion and development of Alaska's mineral industries.*

- Demand continuing airborne and field geological and geophysical surveys of Livengood, Circle, Richardson, and Fairbanks.
- Support interpretation and consolidation of Interior and Northern mining data.

INDUSTRY PRIORITY #3: Center of Excellence for mining training and research.

OBJECTIVE: Fairbanks is the research hub for arctic mining.

- *Support research that extends the life of existing mines.*
- *Support research that allows affordable development of Interior mines.*
- *Support continuing research to determine if development of each mine is environmentally responsible.*

OIL & GAS INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: FNSB is liquid fuels distribution center for interior, northern, and coastal communities.

OBJECTIVE: Encourage retention, expansion and development of local processing capabilities for value-added products.

- *Support the continued operation of local refineries.*
- *Support Flint Hills in discussions with State to reduce tariff.*
- *Encourage research and implementation of lower cost conversion and fuel alternatives for communities and villages throughout the interior.*

OBJECTIVE: Use natural gas to develop value-added products.

- *Pursue gas to liquids plant in FNSB.*
- *Develop arctic LNG hub systems to deliver LNG to outlying areas.*
- *Sell and service portable gas to liquids plants in remote communities.*
- *Host inventors' workshop that educates residents on how create value added products using natural gas.*
- *Focus on specialty manufacturing like: cut flowers, veggies.*
- *Develop, implement and encourage rapid deployment of natural gas and propane distribution system.*
 - *Develop service district like funding mechanisms for conversion of neighborhoods to natural gas.*

INDUSTRY PRIORITY #2: Become Center of Excellence for Arctic Oil and Gas research and development.

OBJECTIVE: Strengthen and expand Petroleum Development Lab at University of Alaska, Fairbanks.

- *Develop Center for Excellence for Methane Hydrate heavy oil extraction expertise.*
- *Host international conferences that bring international industry and academia together.*
- *Develop coal bed methane technology for rural Alaska.*
- *Encourage entrepreneurship and inventions using natural gas, propane, and renewable energy.*

- *Develop light oil enhanced oil recovery technology.*

INDUSTRY PRIORITY #3: Ensure continued healthy oil and gas production in Alaska.

OBJECTIVE: Actively support oil and gas development in Interior and Northern Alaska.

- *Encourage increased production from the Alaska North Slope.*
- *Support opening the 1002 area of Alaska National Wildlife Reserve.*
- *Support development of Northern Petroleum Reserve Alaska.*
- *Support development of all interior Alaska oil and gas basins.*
- *Advocate for economic climate that encourages use of enhanced oil recovery and methane hydrate on the North Slope.*
- *Support Outer Continental Shelf oil and gas development.*
- *Encourage recovery of 35 billion barrels of delineated heavy oil from West Sac and other heavy oil basins.*
- *Encourage cooperation between state and major stakeholders in developing commercially viable extraction of heavy oil.*
- *Advocate for extension of rail to Livengood and Canada.*

REGIONAL HUB INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: Support the development of rural economies by strengthening the “spokes.”

OBJECTIVE: Help interior and northern neighbors develop strong economies.

- *Help interior and northern communities fund and implement affordable sources of energy in their communities.*
- *Work with community-based urban/rural coalitions to foster Fairbanks and rural synergies to develop tourism product and promotion.*
- *Support FNSB as vocational and career center for Interior and Northern Communities.*

INDUSTRY PRIORITY #2: Make Borough an attractive hub to rural communities.

OBJECTIVE: Borough as the Northern and Interior marketplace.

- *Develop social and business relationships with Interior and Northern region communities.*
 - *Include Regional Hub/Certified Bush Friendly in cooperative marketing strategies.*
 - *Educate local businesses about marketing and shipping to Interior and Northern region communities.*

INDUSTRY PRIORITY #3: Make the connection – transportation, information, communication, information & training.

OBJECTIVE: Borough as a regional social, economic, health, and education center.

- *Promote and improve Borough as the regional strategic, social, educational, economic, and health care hub.*
 - Encourage Fairbanks businesses to consider rural customers as an important economic opportunity and to participate in rural marketing and trade missions to targeted locations.
 - Encourage air carriers to use the Fairbanks International Airport as hub for cargo and passenger service to Interior, Northern and Western Alaska.
 - Develop social and business relationships with Interior and Northern region communities.
 - Develop Fairbanks as the Interior's health care hub.
 - Support meetings and conventions that position Fairbanks as a hub for the region and a leader in the state.

VISITOR INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: Support destination marketing positioning Fairbanks NSB as hub of Interior and Arctic travel.

OBJECTIVE: Support the integration of a community brandprint strategy that conveys the key characteristics of light, energy and warmth.

- *Support a coordinated community brand strategy.*
- *Ensure light, energy, warmth included in cooperative marketing efforts.*
- *Ensure Fairbanks as a destination and gateway to the North are included in cooperative marketing efforts.*

INDUSTRY PRIORITY #2: Support improved access through passenger air service.

OBJECTIVE: Develop improved air access to the FNSB.

- *Support improved and alternative domestic air passenger service through Frontier and other airlines that bring competitive air service into the Fairbanks market.*
- *Sustain and grow current international air service via Condor and Japan Airlines.*
- *Explore additional domestic and international air service to Fairbanks.*

INDUSTRY PRIORITY #3: Support infrastructure development of year-round travel.

OBJECTIVE: Support efforts to fully investigate the feasibility of a convention center and/or performing arts center in *Fairbanks*.

- *Provide infrastructure and in-kind support that encourages economic development through meetings and conventions.*

OBJECTIVE: Support sustainable winter tourism.

OBJECTIVE: Improve accessibility to national parks connected to Fairbanks by air or highway.

OBJECTIVE: Develop scenic byway programs for North Richardson, North Parks/Parks, and Dalton Highways.

ECONOMIC FOUNDATIONS

ACCESS TO CAPITAL

OBJECTIVE: Promote community access to venture capital.

- *Identify and develop sources of public and private capital for the development and expansion of businesses in the FNSB.*
- *Market information about available sources of capital to local businesses.*

BUSINESS CLIMATE

OBJECTIVE: Develop community of entrepreneurs.

- *Educate local businesses about business opportunities and how to develop them.*
- *Encourage and support research to improve business opportunities in the FNSB.*

OBJECTIVE: Strengthen and develop friendly business environment.

- *Develop and utilize economic incentive tools.*

HUMAN RESOURCES

OBJECTIVE: Develop and retain educated local workforce.

- *Support programs that will train educators, teachers and instructors to ensure the quality of the educational system and preserve all cultural heritages.*
- *Encourage excellence in K-12 and post-secondary educational systems producing results that exceed state and national averages.*
- *Support the expansion and enhancement of the University of Alaska Fairbanks (UAF) and Community and Technical College (CTC), encouraging funding at levels that allow growth, promote excellence, increasing maintenance funding, the addition of new programs, and both programmatic and institutional accreditation.*
 - Support funding for adequate building construction and deferred maintenance at all University of Alaska Fairbanks campuses in the Borough.
 - Support funding for Life Science Innovation and Learning Facility and UAF Energy and Engineering Facility.
- *Retain those we educate.*
 - Develop incentive program to keep our kids in Alaska.
 - Develop incentive program to get our kids to come back after they leave.

OBJECTIVE: Provide job skills development opportunities.

- *Promote vocational, technical, and career training opportunities within the FNSB that prepare residents to compete in the global marketplace.*
 - Support construction and operation of a Pipeline Training Facility in Fairbanks.

- Develop vocational, technical etc. training for military contractor.
- *Promote School-to-Work and School-to-Apprenticeship programs, and support steps that strengthen apprenticeship programs that prepare our workforce for jobs of the future.*

PHYSICAL INFRASTRUCTURE

OBJECTIVE: Expand current railroad and market Fairbanks as natural hub.

- *Support the design, funding and construction of projects that improve functionality and enhance the role of FNSB as a hub for the Alaska Railroad. Encourage routes between Fairbanks, Ft. Greely, and other economic locations.*

OBJECTIVE: Sustainability of current infrastructure, capital dollars vs. maintenance.

- *Support the design, construction and maintenance of trail, road, rail and air transportation systems that improves access to the region.*
 - Support the funding and completion of the Statewide Transportation Improvement Program (STIP) projects that improve transportation in and around the Borough.
 - Support the Fairbanks Metropolitan Area Transportation System (FMATS) / Metropolitan Planning Organization (MPO) and the Transportation Improvement Program (TIP).
 - Support development and maintenance of interconnected, mass transit, para-transit, and coordinated transportation systems.

OBJECTIVE: Prioritize development of transportation to continuously build on prior activities (projects) that complement each other rather than compete.

- *Encourage further development of transportation routes and energy and communication systems that improve the ability of FNSB businesses to market and distribute goods, services and passengers to markets in Canada and the continental US.*
- *Support the continued development of transportation, communication and energy infrastructure that strengthen FNSB as Alaska's economic hub.*
- *Support the development, maintenance and improvement of core public and private transportation infrastructure.*
- *Support the design, construction and maintenance of core road, rail and air transportation systems that improves access to the region.*
 - Support the design, funding and construction of projects that improve functionality and enhance the role of Borough as a hub for the Alaska Railroad. Specifically encourage routes between Fairbanks, Ft. Greely, and other economic locations.

QUALITY OF LIFE

OBJECTIVE: Support quality in health care, education, public safety, beautification, government and culture that would improve the individual and community quality of life in the FNSB.

Become recognized as the arts and culture center of Alaska by developing a healthy, diverse, multicultural, and economically successful arts community.

- Promote the development and maintenance of community and cultural centers and themes that enhance the Borough's sense of place.
- *Support development and ongoing maintenance of beautification efforts in the FNSB.*
- *Support the development and construction of year-round recreational facilities and opportunities consistent with and to capitalize upon local climatic conditions.*
- *Develop the FNSB as a year round sport and recreation destination center, including sled dog sports, alpine and cross country skiing, snow machining, ice carving, mountain biking, hiking, rock climbing and other recreational opportunities.*

TECHNOLOGY

OBJECTIVE: Promote FNSB as a desirable location for high technology operations that utilize Borough's intellectual resources, skills and workforce.

- *Identify and promote logistical, environmental and other advantages of the FNSB to attract technology-related industries.*

Chapter Four - Cluster Analysis

Background The purpose of this analysis to identify the most competitive industries in the Fairbanks North Star Borough (FNSB), identify their inputs and then offer suggestions on how to improve the linkages between these industries in order to enhance the productivity and thus enhance the strongest industries within the region. In 2009, the Alaska Partnership for Economic Development received funding from the Denali Commission to develop a statewide Comprehensive Economic Development Strategy. They contracted with IHS Global Insights, Economic Competitiveness Group, and McDowell Group to conduct a baseline analysis of Alaska’s economy, including its clusters, at the state and regional level. This work was the foundation for the industry clusters included in this planning process.

Industry clusters reveal themselves through employment concentration. Where an industry and its related support industries exceed the national average for that “cluster” of related industries by 1.5 to 2%, it is considered to be a cluster. This is called the “employment concentration ratio” or “ECR.” Industries in the FNSB that have a high ECR are mining, military and tourism. Clusters sometimes have a high potential, but low ECR, these too benefit from a cluster development process. Examples of these in the FNSB are Woody Forest products, Logistics and International Trade, and Advanced Business Products. The Woody Forest Product group’s strength in the FNSB is logging with a 2.6 ECR the Advanced Business Products group’s areas of strength in the FNSB are the Architectural, Engineering, & Related Services (1.75 ECR), and Facilities Support Services (2.38 ECR).

Alaska’s Regional Structure

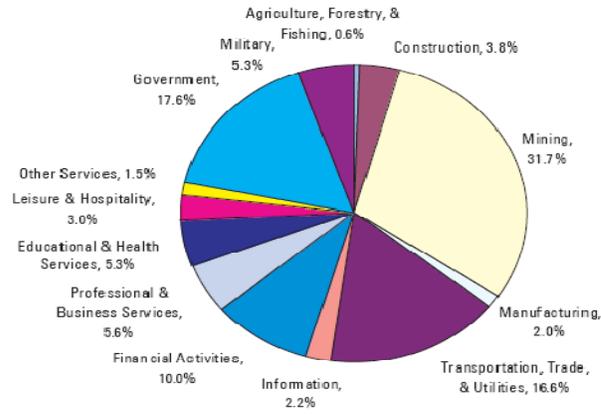
The state of Alaska is comprised of seven regions defined as aggregations of boroughs and census areas that are logically considered as economic units by virtue of their geographic proximity, industrial structure, and infrastructure requirements. The table below provides estimates of the value of economic activity in each region.

	2008 Level (Million 2001 \$)	Share of State (%)	2008 Estimated Growth (%)	2009 Forecast Growth (%)
Southeast	2,984	10	-5.2	-3.6
Anchorage/Mat-Su	16,969	54	-1.8	-3.4
Gulf Coast	2,277	7	-2.3	-2.5
Fairbanks	4,094	13	-3.8	-3.2
Interior Western	998	3	-4.8	-3.1
Southwest	1,075	3	-4.7	-3.6
Northern	2,916	9	5.3	-1.8
Total	31,304	100	-2.0	-3.2

Alaska's Industry Structure

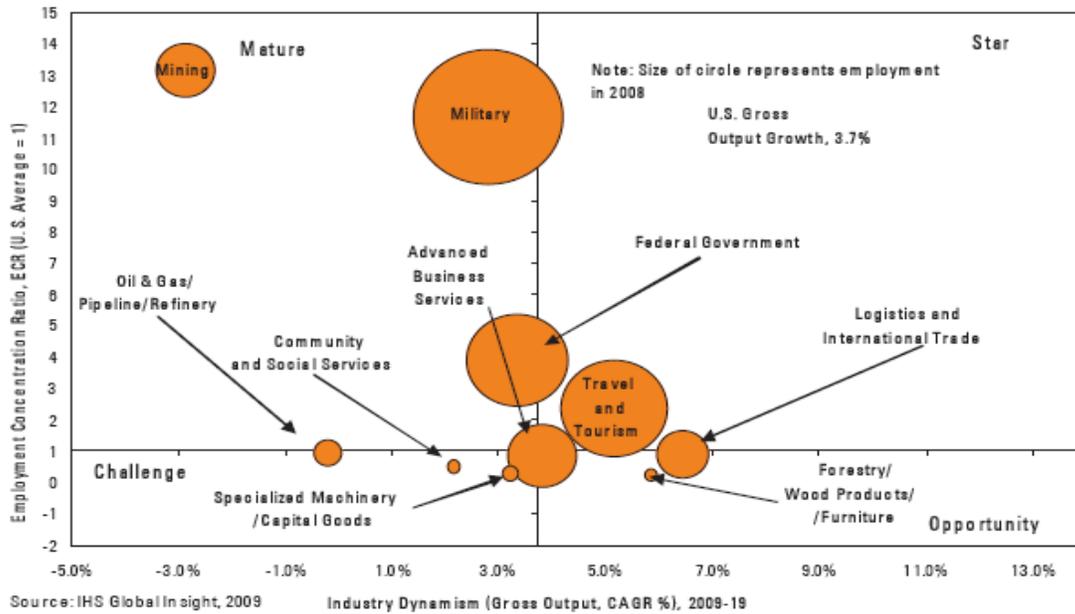
Figure 24. Alaska and National Industry Structure

Alaska's GSP by Industry (2008)



Source: Bureau of Economic Analysis (BEA)

Figure 1: FNSB Industry Clusters



Fairbanks North Star Borough Comprehensive Economic Development Strategy

- **Logistics and international trade** is one of the most dynamic clusters in the Fairbanks region. The cluster's industry dynamism is estimated to be 6.4% however cluster employment concentration is only average.
- **Advanced business services** is another large cluster—it employed about 1,877 people in the Fairbanks region or 11% of the entire cluster in the state in 2008.
- **Federal Government** employed 3,961 people in 2008, the third largest employer in the region. The employment concentration ratio of the cluster is 3.9 times the national average.

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change In Employment, CAGR, 2003-08
Federal Government	3.3%	3.9	3,961	0.9%
Military	2.8%	11.6	8,775	-
Fishing and Seafood Processing	-	-	-	-
Logistics and International Trade	6.4%	0.9	1,175	4.1%
Travel and Tourism	5.2%	2.3	4,668	0.6%
Forestry and Wood Products	5.8%	0.2	94	25.7%
Community and Social Services	2.2%	0.5	86	-10.6%
Advanced Business Services	3.8%	0.9	1,877	10.3%
Specialized Machinery/Capital Goods	3.2%	0.3	161	11.1%
Oil and Gas/Pipeline/Refinery	-0.2%	0.9	369	-4.3%
Mining (Excl. Oil and Gas)	-2.9%	13.1	1,373	5.9%

Source: IHS Global Insight, 2009

- In 2008, **travel and tourism** cluster employed 4,668 people in Fairbanks. The employment concentration ratio of the cluster is 2.3 times the average.
- The **mining** cluster has 31% of its total employment in the Fairbanks region. It is also the most concentrated cluster in the region, the ECR is 13 times higher than average. Cluster dynamism is estimated to be minus 2.9%.
- **Military** is a large cluster with total employment of 8,775 in 2008, 32% of military cluster employment in the state. The cluster's ECR is 11.6 times higher than the national average.

SOURCE: Alaska Forward report, 2010.

The FNSB has reviewed this information at length and incorporated it into the briefings provided the industry cluster leaders when they were developing their priorities. The industry clusters that the community selected for development are made up of two cross-cutting industries: energy & regional branding and a non-traditional industry cluster – the military.

Now that the target clusters have been identified they can be examined and intentionally developed. This is typically done by through an industry cluster development process where local “cluster working groups” of high potential cluster stakeholders meet and work collaboratively to identify and resolve obstacles and pursue opportunities that will increase the overall productivity of the industry cluster. These typically involve not just the industry stakeholders, but also include local customers, regulators and researchers.

The FNSB is in the process of intentionally developing the Forestry/ Wood Products/Furniture cluster through a cluster development process. This supports community priority #1. The Second Priority, the Military, has a small statewide cluster working group already in progress working on policy at the state and federal level. There is also strong interest in creating a local cluster working group that would work to strengthen the local retail, service and manufacturing relationships with the military through a cluster development process. The local agricultural groups are planning a

cluster development process to strengthen the nascent agricultural industry in the FNSB. We anticipate starting both of these cluster working groups in FY 2012. The FNSB is also participating in statewide efforts to develop the Visitor, Renewable Energy, Mining and Logistics clusters.

Conclusion

The Fairbanks North Star Borough community has identified three top community priorities through the CEDS process. The community had very good reasons for selecting them and we are actively pursuing them with an industry cluster development for woody forest products, the military, and agriculture, and an ongoing Fairbanks First buy local/branding project. The other priorities identified by the industries are either being worked as part of the statewide process, or by the industry partners within the local industry sectors.

CHAPTER FIVE – STRENGTHS, WEAKNESSES, OPPORTUNITIES, THREATS ANALYSIS

Strengths:

Mining is healthy
Significant military presence
Multi-modal transportation hub
Federal & State government provide stability
Health Care industry present and strengthens regional hub
FNSB economy continues to hold its own in global downturn
Winter wonderland and Summer playground
Alaskan attitudes: independence, perseverance & resilience
Good digital communications infrastructure
Proximity to Prudhoe Bay oil fields
Strong land grant university

Weaknesses:

High energy prices effect cost of doing business
Pipeline throughput declining
State, Federal & Local regulators do not operate at the speed of business
Transportation linkages to suppliers
Lack cold storage & processing facilities for food, flowers, animals, milk, cheese
Flint Hills refinery expensive to operate & aging
Bases are expensive to operate
Little private construction
Downtown unattractive and losing business
Restricted access to capital
Lack of entrepreneurial support systems or network
Limited manufacturing knowledge or infrastructure
Regular year long Stryker deployments
Lack of connection with north slope and its producers
No railroad to the continental US or North Slope
Mixed messages to outside world
Cruise ship traffic down

Opportunities:

Developing and marketing alternative energy technologies or sources
Trucking LNG to our community to provide affordable energy
FNSB as hub for liquid fuel distribution

- Grow and sell local niche agricultural products
- Develop and market solutions to cold weather challenges
- Adding value to natural resources extracted
- University as center for arctic research
- Developing bio-mass industry
- Winter tourism
- Extensive limestone deposits
- New mineral development
- Revitalize downtown Fairbanks- make it a destination
- Develop North Pole as a destination
- Develop green houses using waste heat and bio-mass
- Develop and upgrade Joint Pacific Alaska Range Complex

Threats:

- Energy prices continue to increase
- Affordable natural gas does not come to FNSB
- State & Federal government budget cuts
- Northwest Passage opens up
- Oil throughput drops below level economically reasonable to operate pipeline
- Flint Hills shuts down refinery
- Eielson BRAC'd
- State government paid for by declining throughput
- CO₂ legislation
- PM_{2.5} not addressed
- Cruise lines move more ships from Alaska

CHAPTER SIX – STRATEGIC PROJECTS, PROGRAMS AND ACTIVITIES

VITAL PROJECTS

COMMUNITY PRIORITY #1: Lower and stabilize FNSB energy costs by expanding the energy portfolio with a focus on local resources.

DISCUSSION

This is a Vital Project for the FNSB community. Fairbanks is one of the most northerly urban areas in the world. As a result, energy is critical to the survival of the population and economy. Fairbanks has neither affordable natural gas, nor distribution infrastructure available in the community. As a result they generally heat with diesel, and generate electricity with coal and diesel. Diesel prices are increasingly expensive, consuming an estimated \$700 million of community resources a year. As a result of this situation, many local residents choose to heat with wood, many times resulting in poor local air quality. Exacerbating this is the Environmental Protection Agency's recent finding that the FNSB is a PM_{2.5} non-attainment area. Burning wood, coal and diesel emit PM_{2.5}. Clearly, both the energy costs and the air quality problem are the reasons the community identified this as its top cross-cutting priority. Neither businesses nor residents can prosper in these circumstances.

Fairbanks is approximately 400 miles from one of the largest oil fields in North America, indeed, a pipeline carrying oil from the North Slope to Valdez runs through Fairbanks. The estimated natural gas reserves on the North Slope range in the trillions of cubic feet, yet, to date, none has been successfully exported. Many different organizations are working to put together a project to bring this natural gas off the North Slope, ranging from bridge projects like trucking LNG, to long term multi-billion dollar projects to construct a 48" line to export natural gas to Canada.

RELATIONSHIP TO SWOT

Strengths:

Proximity to Prudhoe Bay Natural Gas Fields

Weakness:

High energy prices effect cost of doing business

Lack of connection with North Slope and its producers

Bases are expensive to operate

Opportunity:

Develop and market alternative energy technologies or sources

Truck LNG to our community to provide affordable energy

Develop bio-mass industry

Add value to natural resource extraction

Threats:

Energy prices continue to increase

Affordable natural gas does not come to FNSB

LEAD ORGANIZATIONS

The lead organizations working on resolving this issue include: State of Alaska, Alaska Gas Development Corporation, Trans-Canada/Exxon, Alaska Gasline Port Authority (AGPA), and Golden Valley Electric Association (GVEA), Fairbanks Pipeline Training Center Trust (FPTC).

JOBS

These projects all will provide jobs, ranging from an estimated 396 construction and 211 annual operations jobs with the AGPA or GVEA project, to thousands with the Trans-Canada/Exxon project. Fairbanks Pipeline Center Trust estimate 60 construction jobs per year from 2011-12. In addition, ongoing training programs at FPTC will provide training opportunities which enable an average of 800 individuals to successfully enter the workforce on a yearly basis.

TIMELINES

The timelines for these projects range from two years to 10-15. The LNG project can be accomplished during the life of this document. It is probably at least three years away. Over the course of the next three years, the FPTC will be constructing 30,000 additional square feet of pipeline training facilities, including approx. 6,400 sq. ' statewide pipeline welding training facility, with office space, classrooms, welding, booths.

MEASUREABLE

Trucking LNG and construction of a small diameter pipeline are visible public projects that are highly visible and milestones are easily reported. They include: project approval, project plan development, funding, permitting, beginning construction, and completion. The smaller projects are harder to track, but since there is a formal cluster working group working this year, actions that implement the proposed project plans will be easily measured and reported.

**Fairbanks North Star Borough
Comprehensive Economic Development Strategy**

Project	Timeline	Funding	Responsible Organization
Fairbanks Pipeline Training Center; Welding Training Facility/Shop, Driving Training Facility/Shop;	1-3 years	EDA; state of Alaska; Funding as per the Alaska Pipeline Act 2005	Fairbanks Pipeline Training Center Trust
Truck LNG	2-3 years	Private bonding; State Development Organization loan; FNSB grant	Alaska Gasline Port Authority; Golden Valley Electric Association; Alaska Industrial Development & Export Authority
Develop local woody bio-mass industry cluster	1-5 years	EDA planning grant; DoAg development grants; FNSB grants; private loans; DoE grants; State of Alaska Forestry	FNSB Economic Development; FEDC; Alaska State Forestry; local bio-mass private industry; State of Alaska Commerce Dept.
Construct small diameter pipeline	5-10 years	State of Alaska	Alaskan Gas Development Agency

COMMUNITY PRIORITY #2: Anchor the missions of Fort Wainwright, Eielson Air Force Base, Fort Greeley, and Clear Air Force Stations and encourage increased utilization of the existing facilities.

DISCUSSION

This is also a VITAL project. While energy is job one, retaining the military is also critically important. The military accounts for over 40% of our economy, so maintaining its health while we diversify our economy is paramount. Alaska has one of the largest training grounds in the world, the largest in the nation; however, they do not have ready, year round access to them. AMFAST and FEDC are working to ensure that the Army and Air Force has year round access and that the training grounds provide training on current systems. The energy prices noted in Community Priority #1 are also an integral issue here, as high energy prices make these bases expensive to operate. The air quality issue is also important, for if it isn't adequately addresses, the bases will have their missions curtailed so as not to create PM_{2.5}. The community is also undertaking a cluster

development process to strengthen the commerce relationships between the military and the community.

This community priority is about protecting jobs in the short term, and if the access to the training grounds, energy costs, and PM2.5 are addresses, then we will be able to create hundreds.

RELATIONSHIP TO SWOT

Strengths:

Military presence and base construction are stable

Weakness:

Bases are expensive to operate

Regular year long Stryker deployments

Opportunity:

Develop and upgrade Joint Pacific Alaska Range Complex

Threats:

Energy prices continue to increase

Affordable natural gas does not come to FNSB

State and Federal government budget cuts

Eielson BRAC'd

PM_{2.5} not addressed

LEAD ORGANIZATIONS

The Governor's Alaska Military Force Advocacy and Structure Team (AMFAST) and Fairbanks Economic Development Corporation (FEDC) are the lead organizations on this project. They are working with the governor, DoD and other agencies to ensure that Eielson and Fort Wainwright remain healthy and that their mission is integral to accomplishing DoD's mission. FEDC will also be the lead agency for the military cluster development process, with participation from the Chamber and FNSB.

JOBS

The Alaska Railroad is currently working to construct a \$250 million bridge across the Tanana River to provide year round access to the JPARC. This is phase one in opening up these training grounds and helping to anchor this mission in our community. The construction of the bridge will provide hundreds of jobs for 2-3 years. Once this is complete, the DoD hopes to upgrade and develop the JPARC so that it can be used more fully. Jobs are difficult to assess here. The JPARC expansion and upgrade should result in additional training exercises, which should result in additional year round support jobs and additional retail spending.

FEDC has estimated that if we can keep 10% of local expenditures in our community we will save \$375 million and create 1,775 jobs. Strengthening local commercial relationships with the military will keep local dollars in our community and move us

toward this goal. We won't know how many jobs we are talking about until we start the industry cluster process.

TIMELINES

The bridge is funded, construction should begin this year and take approximately three years to be built.

The JPARC expansion is currently undergoing an EIS process which is expected to take about two years.

MEASUREABLE

Again, these are highly visible and large projects that are easy to track. The jobs are probably also reasonably easy to track. We should report against: project approval, project plan development, funding, permitting, beginning construction, and completion.

Project	Timeline	Funding	Responsible Organization
Launch industry cluster working group process	1 year	FNSB, FEDC	FEDC
Construct bridge across Tanana River	2-3 years	DoD, State of Alaska	Alaska Railroad; AMFAST
Develop and update JPARC training grounds	3-5 years	DoD	DoD; AMFAST

COMMUNITY PRIORITY #3: Develop regional cooperative marketing program to create a larger market for goods and services produced in the Borough.

DISCUSSION

This was selected by the local community as a Vital project, but had not really been seen as Vital before then. However, the Fairbanks Convention and Visitor Bureau has worked to develop a brand for the visitor industry and Fairbanks Economic Development Corporation is working on a buy local campaign that works to develop a local brand that encourages people to buy local and markets Fairbanks to its regional neighbors. In the Forest Product Cluster Working Group it was recognized that we need a brand for our local wood products. There is opportunity to work on this over the next five years.

RELATIONSHIP TO SWOT

Strengths:

We are a multi-modal transportation hub

Weakness:

Mixed messages to outside world

Opportunity:

- Develop and market solutions to cold weather challenges
- University as center for arctic research
- Winter tourism
- North Pole as a marketable destination

Threats:

- Northwest Passage opens up
- Cruise lines move more ships from Alaska

LEAD ORGANIZATIONS

The Fairbanks Economic Development Corporation (FEDC) is working on a buy local campaign that works to develop a local brand that encourages people to buy local and markets Fairbanks to its regional neighbors.

JOBS

FEDC estimates that if we keep an additional 10% of our purchases local, we can save \$370 million dollars a year and create 1,772 jobs.

TIMELINES

One element of this project kicked off this past year and has about a two year horizon. However, the regional brand enlarges this project, so it may now take up to five years. The milestones we might anticipate include: development of a brand (complete), enrollment of local businesses.

MEASUREABLE

Project	Timeline	Funding	Responsible Organization
Brand Fairbanks locally and regionally	2-3 years	FEDC; Corporation for National Service	FEDC
Work with other industries to develop one brand or theme for the FNSB	2-5 years	FNSB Economic Development	FNSB Economic Development; FEDC

SUGGESTED PROJECTS

INDUSTRY CLUSTER DEVELOPMENT PRIORITIES

AGRICULTURE & FORESTRY INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: Affordable available capital for start-ups.

INDUSTRY PRIORITY #2: Support land use policies that encourage agricultural forestry production.

INDUSTRY PRIORITY #3 / COMMUNITY PRIORITY #3: Develop regional cooperative marketing program to create a larger market for goods and services produced in the Borough.

COLD CLIMATE / ARCTIC RESEARCH INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: Recognize and build capacity through human and physical partnerships (private, university, state, and international).

INDUSTRY PRIORITY #2: Promote research capacity nationally and internationally.

INDUSTRY PRIORITY #3: Deliver tangible, focused results - create businesses, jobs – lower cost of living, improved quality of life.

ENERGY INDUSTRY CLUSTER

INDUSTRY PRIORITY #1/COMMUNITY PRIORITY #1: Lower and stabilize FNSB energy costs by expanding the energy portfolio with a focus on local resources.

INDUSTRY PRIORITY #2: Develop industries around existing local resources, value added processing of woody bio-mass, gas-to-liquids, and natural gas.

INDUSTRY PRIORITY #3: Position Interior as an energy research and development hub for Arctic research.

MILITARY INDUSTRY CLUSTER

INDUSTRY PRIORITY #1 / COMMUNITY PRIORITY #2: Anchor the missions of the Fort Wainwright, Eielson Air Force Base, Fort Greeley, and Clear Air Force Station and encourage increased utilization of existing facilities.

INDUSTRY PRIORITY #2: Pursue continued development of the nation's largest geographically diverse joint military training area, the Joint Pacific Alaska Range Complex (JPARC).

INDUSTRY PRIORITY #3: Support the transition to an active association air tanker mission for 168th Air National Guard Wing.

MINING INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: Bring affordable energy to the FNSB and surrounding areas.

INDUSTRY PRIORITY #2: Support current and new mining activity.

INDUSTRY PRIORITY #3: Center of Excellence for mining training and research.

OIL & GAS INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: FNSB is liquid fuels distribution center for interior, northern, and coastal communities.

INDUSTRY PRIORITY #2: Become Center of Excellence for Arctic Oil and Gas research and development.

INDUSTRY PRIORITY #3: Ensure continued healthy oil and gas production in Alaska.

REGIONAL HUB INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: Support the development of rural economies by strengthening the “spokes.”

INDUSTRY PRIORITY #2: Make Borough an attractive hub to rural communities.

INDUSTRY PRIORITY #3: Make the connection – transportation, information, communication, information & training.

VISITOR INDUSTRY CLUSTER

INDUSTRY PRIORITY #1: Support destination marketing positioning Fairbanks NSB as hub of Interior and Arctic travel.

INDUSTRY PRIORITY #2: Support improved access through passenger air service.

INDUSTRY PRIORITY #3: Support infrastructure development of year-round travel.

ECONOMIC FOUNDATIONS

ACCESS TO CAPITAL

BUSINESS CLIMATE

HUMAN RESOURCES

PHYSICAL INFRASTRUCTURE

QUALITY OF LIFE

TECHNOLOGY

CHAPTER SIX – PLAN OF ACTION

DISCUSSION

The Community Planning organization will continue to work closely with the organizations that are endeavoring to bring affordable, sustainable energy to the community. We have, and will continue to, partner closely with the AGPA/GVEA natural gas bridging project, striving to bring lower cost energy to the borough for businesses and consumers until a more permanent solution is built. This will also help improve the air quality in the FNSB, an EPA mandate. This means helping them obtain financing, helping obtain financing for building out the natural gas infrastructure, helping the pipeline companies with permits and obtaining financing. We will also work with the Fairbanks Pipeline Training Center as they further ramp up their training efforts.

We also are conducting a woody forest product cluster development process to help community members find ways to burn wood cleanly, so that it reduces energy costs and doesn't emit excessive amounts of PM_{2.5}. This should be completed in the Fall of 2011 and will include implementing action plans developed by the industry. The Planning Organization will continue to have an active role in facilitating the development and implementation of these projects.

We also are participating in the statewide renewable and alternative energy cluster working group. This should be completed in the Summer of 2011 and will include implementing action plans developed by the industry.

The Community Planning organization will continue to work with the Governor's Alaska Military Force Advocacy and Structure Team (AMFAST) and Mayor's office to fund and construct a new bridge that will provide access to the training grounds and to support expansion of the training grounds.

Finally, the Planning Organization will continue to work with the Fairbanks Economic Development Corporation on the buy local campaign and the expansion of this to an overarching regional brand.

ENVIRONMENTAL CONSIDERATIONS

The following plan of action has been carefully developed and articulated the preceding sections, and performance measures follow. The projects that are being pursued for Community Priority # 1 & 2 are large projects that have environmental reviews built in, and with the current EPA air quality concerns, the reviews and sensitivity are heightened. The development of a community brand falls outside these concerns.

WORKFORCE DEVELOPMENT CONSIDERATIONS:

The development of a gas trucking operation or a gas pipeline are in line with EDA investments in the Pipeline Training Facility. Construction of a bridge across the Tanana will utilize construction workers, a national workforce investment goal.

CHAPTER SEVEN - PERFORMANCE MEASURES

The FNSB EDC proposes the following performance measures

COMMUNITY PRIORITY #1: Lower and stabilize FNSB energy costs by expanding the energy portfolio with a focus on local resources.

Year one:

- An LNG bridge project that will bring natural gas to our community within two years has been funded and begun.

Woody Forest Products Cluster Working Group:

Has been completed;

Three action plans have been championed and executed.

Ten jobs have been created as a result of this work.

Constructing welding shop and driver training shop at Fairbanks Pipeline Training Facility creating at least 60 construction jobs.

Year Two:

LNG Bridge project is in full swing, creating 395 construction jobs.

Woody Forest Products Cluster continues to pursue opportunities, adds an additional 10 jobs.

A long term natural gas project has been selected by the state, is being actively pursued with permits, etc. At least 75 local engineering and surveying jobs should be created as a result of this.

Fairbanks Pipeline Training Central Facility phase one of 18,000 sq ft facility creating 60 construction jobs.

Year Three:

Natural Gas bridging project is complete, creating 211 annual operating jobs. An additional 35 local retail and service jobs result from money no longer spent on energy.

Fairbanks Pipeline Training Central Facility phase two of 18,000 sq ft facility creating at least 60 construction jobs.

Long term pipeline project continues to move forward, creating 150 engineering, survey, procurement, prep jobs.

Woody forest products cluster continues to pursue opportunities, adding 20 new positions.

COMMUNITY PRIORITY #2: Anchor the missions of Fort Wainwright, Eielson Air Force Base, Fort Greeley, and Clear Air Force Stations and encourage increased utilization of the existing facilities.

Year one:

Construction begins on the Tanana River Bridge, creating 150 construction jobs and helping to secure Eielson and Ft. Wainwright's mission.

Joint Land Use team continues to identify and resolve issues regarding land around the bases.

Joint Pacific Alaska Regional Complex (JPARC) upgrade and expansion continues through its EIS.

Conduct military industry cluster development process focusing on strengthening local commercial relationships.

Year Two:

Construction continues on the Tanana River Bridge, creating 150 construction jobs and helping to secure Eielson and Ft. Wainwright's mission.

Joint Land Use team continues to identify and resolve issues regarding land around the bases.

Joint Pacific Alaska Regional Complex (JPARC) upgrade and expansion completes its EIS.

Year Three:

Construction complete on the Tanana River Bridge, however 150 construction jobs present during summer to finalize it, and Eielson and Ft. Wainwright's mission much more secure.

Joint Land Use team continues to identify and resolve issues regarding land around the bases.

Joint Pacific Alaska Regional Complex (JPARC) upgrade and expansion completes its EIS, again creating possibility of supporting many additional missions. Estimated 75 year round jobs created.

COMMUNITY PRIORITY #3: Develop regional cooperative marketing program to create a larger market for goods and services produced in the Borough.

Year one:

35 organizations have signed up to participate in Fairbanks First.

Additional 1% of purchases remain in FNSB, creating \$3.7 million impact, creating 17 new jobs.

Local Food Production Cluster Working Group.

Has been completed;

Three action plans have been championed and executed.

Ten jobs have been created as a result of this work

Year Two:

70 organizations have signed up to participate in Fairbanks First.

Additional 2% of purchases remain in FNSB, creating \$7.4 million impact, creating 34 new jobs.

Local food production cluster continues to pursue opportunities, adding 20 new positions.

Year Three:

140 organizations have signed up to participate in Fairbanks First.

Additional 4% of purchases remain in FNSB, creating \$14.8 million impact, creating 68 new jobs.

Local food production cluster continues to pursue opportunities, adding 40 new positions.

Chapter Eight – FNSB Economic Development FY 2011 Funding Sources

Figure 32: FNSB Economic Development Funding Sources

Amount	Source
\$62,122	State ARDOR grant
	Other State funds
\$25,000	Federal funds
\$0	Private sector funds
300,000	VISTA*Americorps (pass through)
<u>\$314,122</u>	<u>Other non-federal, non-State funds</u>
\$701,244	Total FY 12 ARDOR Budget
\$107,244	Total FY 09 ARDOR Budget

End Notes

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²² Beginning January 2001, wage and salary employment estimates were published under a new classification system. The Standard Industrial Classification system (SIC) has been replaced by the North American Industry Classification System (NAICS). Data prior to 2001 are comparable only at the Total Nonfarm and Government levels.

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