

Because there have been no cultural resource surveys in the Project area, no sites of cultural or traditional significance have been identified in areas potentially affected by the Project. However, there are several sites along the Cook Inlet shoreline in the vicinity of Tyonek that have been surveyed and do contain cultural resources. The most significant of these, to date, is the Chu'it'nu Archaeological District (TYO-00132) (Braund 2006-2008). One area that could see activity from the Project is Trading Bay/Granite Point (Figure 4.8-1). There also have been at least 100 Dena'ina place names identified in the Project area that could indicate sites of cultural importance or traditional use.

#### **4.10.8. Proposed Protection, Mitigation, and Enhancement Measures**

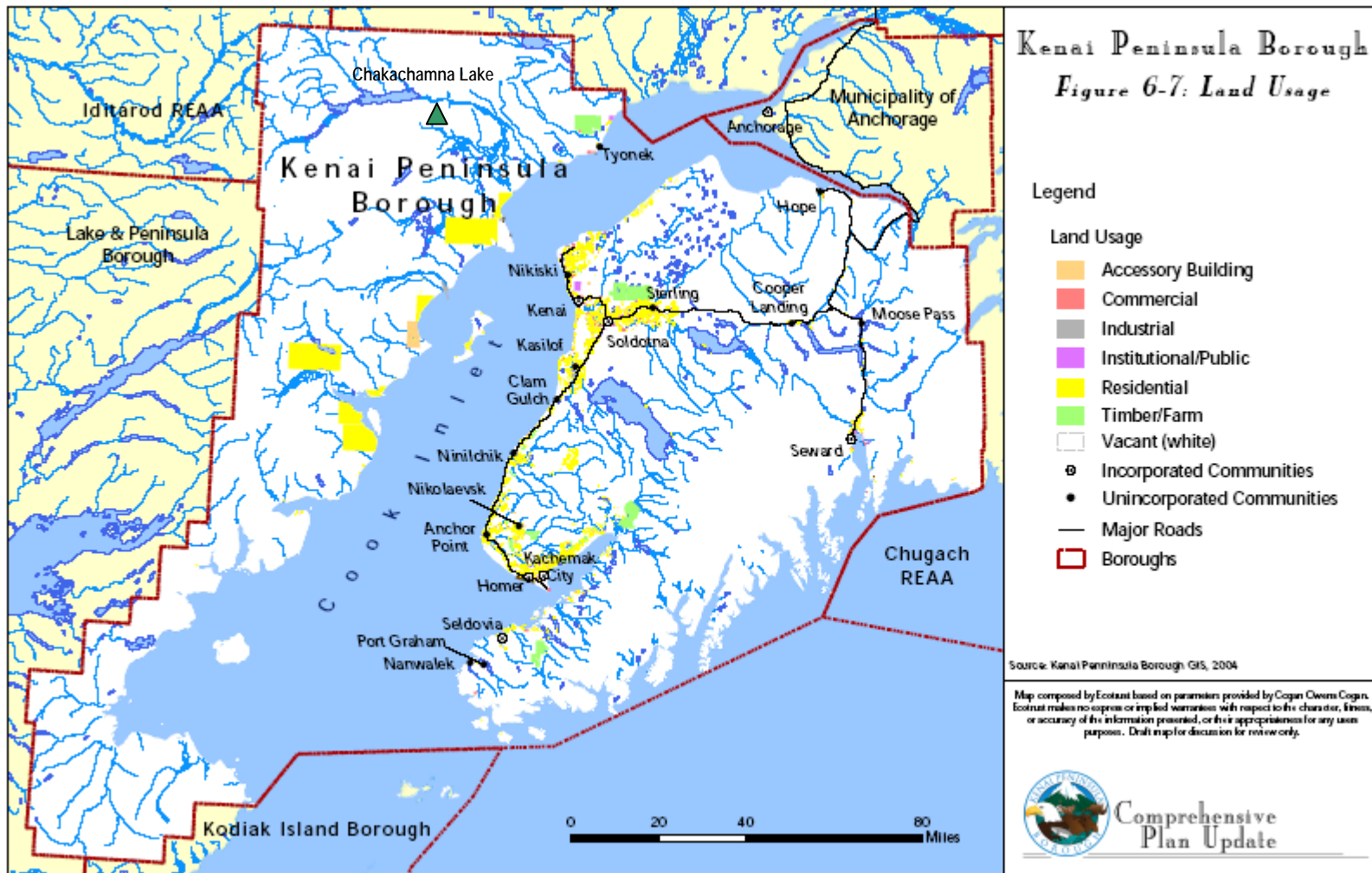
There are no historic or cultural sites listed within the Project area and as a result there currently are no plans describing specific protection, mitigation, or enhancement measures. However, there is potential for historic and cultural sites within the Project area and the Project will comply with the National Historic Preservation Act and its implementing regulations (36 CFR 800) and the Alaska Historic Preservation Act (AS 41.35.010 – 41.35.240, and 11 AAC 16.010 – 11 AAC 16.900). Consultation with the SHPO, Tribal organizations, and other interested parties will be ongoing throughout Project development. In addition, identification and evaluation of cultural resources in the Project area will occur to support the FERC licensing process and will be used during Project planning. If any cultural resources are identified in the Project area and are found to be eligible for the National Register of Historic Places, consultation will continue in order to avoid, minimize, or mitigate effects to those cultural resources. Protection, mitigation, and enhancement measures could include:

- Locating project facilities to avoid cultural sites
- Excavation and study of archaeological sites that may be unavoidably impacted
- Restriction of access to sensitive areas
- Promoting public awareness with educational displays at an appropriate location, such Tyonek Tribal government facilities.

#### **4.11. Socioeconomic Resources**

##### **4.11.1. Introduction**

The Project falls within the boundaries of the Kenai Peninsula Borough (KPB) and is in the vicinity of the Municipality of Anchorage (Figure 4.11-1). Most of the development within the KPB is on the Kenai Peninsula itself, which lies across Cook Inlet from the Project area, making the vicinity of the Chakachatna and McArthur river drainages rural and generally isolated. The nearest community is the unincorporated Native Village of Tyonek, population approximately 154, about 38 miles to the east of the proposed powerhouse site. Eighty miles to the east of the powerhouse site lies Anchorage, the largest city in Alaska, with a population of approximately 260,000 (MOA, 2004; 2000 U.S. Census Data).



**Figure 4.11-1.** Kenai Land use in the Kenai Peninsula Borough (KPB, 2005). Green triangle represents approximate location of the Chakachamna Hydroelectric Project.

#### 4.11.2. Land Use and Real Estate

Land use patterns in the Project area, which is relatively isolated, are rural. Current land use by local residents is for subsistence activities and non-resident use is mainly recreational. There is no road access from the population centers of the Kenai Peninsula, Matanuska/Susitna Valley, or Anchorage and people must access the Project area by boat or airplane.

Most of the lands in the Project area are public, either state or federal. However there are three blocks of Tyonek Native Corporation land that would be crossed by proposed Project access roads and transmission lines (Figure 4.8-1). Land use plans and shoreline management plans that affect properties in the Project vicinity are

- Kenai Peninsula Borough Comprehensive Plan and Kenai Peninsula Borough Coastal Zone Management Plan, KPB
- Kenai Area Plan, ADNR
- Strategic Plan for Lake Clark National Park and Preserve October 1, 2004 - September 30, 2008 (Lake Clark Strategic Plan), NPS – 1,523,000 acres (most to the west of the Project area)
- Trading Bay State Game Refuge and Redoubt Bay Critical Habitat Area Management Plan, ADF&G – Trading Bay State Game Refuge comprises 160,960 acres
- Tyonek Native Corporation lands and the village of Tyonek – 78,849 acres.

Figure 4.11-1 shows land use in the region. Land ownership in the Project area is described in greater detail in Section 4.9 Recreation and Land Use.

#### **Tyonek**

The nearest community, Tyonek, is an unincorporated, small, native village of about 150 people. Their village corporation is the Tyonek Native Corporation (TNC). Tyonek residents strive to maintain a subsistence lifestyle by harvesting as many plant and animal resources from area lands as possible. Commercial use of Project area lands by local residents has been mainly operation of recreational fishing lodges and some past logging of TNC lands. Logging activity in the Project vicinity has left a few – generally unmaintained – access roads between Tyonek, a barge landing near Trading Bay, and the timber lands northwest of Noaukta Slough.

In the words of the TNC (TNC, accessed 2009), “TNC lands are rich in renewable resources that are vital to the Athabascan subsistence lifestyle, including wildlife, berries, and fish. Additionally, a short distance from TNC’s selected lands, the Cook Inlet Region generally is rich in bountiful timber resources, oil and gas, and the world-famous Beluga coal fields. It is inevitable that these resources will be developed and harvested, and become part of state, national, and even world markets.

The TNC Board of Directors and management are preparing for this inevitable development on the West Side of Cook Inlet – development that will have significant impact on the Tebughna

people, their small village, and their small village, and their historical and cultural way of life. Chief Executive Officer Tom Harris and the TNC Board are positioning the corporation to both protect its people and resources from negative consequences of development, and to take advantage of such development for the benefit of the people and their corporation.”

Land use and development projects (TNC, accessed 2009) that the TNC foresees and is planning for are

- New community – ‘Nakacheba’
- Conservation easement on Chuit River
- 1000 acre industrial site
- North Foreland Port and facilities
- Aggregate export
- West Susitna road access
- Fast ferry
- Chuitna Coal Project
- Coal to liquid and power generation
- Chakachamna Hydropower Project
- Mt. Spurr Geothermal Power Project
- Gold port and community development.

Current resource development in the vicinity of Tyonek includes natural gas power generation at Beluga and oil drilling platforms off shore of Trading Bay.

### **Kenai Peninsula Borough**

The Project area lies entirely within the KPB and partially within the coastal zone. Borough land management policies are described in the Kenai Peninsula Borough Comprehensive Plan and the Kenai Peninsula Borough Coastal Zone Management Plan (KPB, 2005 and 2008). Table 4.11-1, from the KPB Comprehensive Plan (KPB, 2005) lists landownership in the borough by category. Much of the land within the borough is either state or federally owned; a significant portion of that in either parks, game refuges, or Critical Habitat areas. Included in the Project vicinity are Lake Clark National Park, Trading Bay State Game Refuge, and Redoubt Bay Critical Habitat Area. The borough and its residents can influence management of state and federal lands through intergovernmental agreements and relationships and the public participation process.

**Table 4.11-1.** Land ownership in the Kenai Peninsula Borough (KPB, 2005)

<b>Land Ownership by Major and Minor Category 2004</b>		
<b>Owner</b>	<b>Acres</b>	<b>Percent of Total</b>
<b>FEDERAL</b>		
Lake Clark National Park (NP)	1,523,000	
Katmai NP	588,000	
Kenai Fjords NP	574,000	
Kenai National Wildlife Refuge	1,894,000	
Alaska Maritime National Wildlife Refuge	24,000	
Chugach National Forest	1,216,000	
Public Domain and Other Federal	1,035,375	
<b>Total Federal</b>	<b>6,854,375</b>	<b>65.5%</b>
<b>STATE</b>		
Department of Natural Resources	2,180,794	
Aviation Division	1,087	
Fish and Game	407	
Department of Transportation	159	
Mental Health Trust	18,774	
State Parks	742	
University of Alaska	15,048	
Alaska Railroad Corporation	512	
Other State	49	
<b>Total State</b>	<b>2,223,923</b>	<b>21.3%</b>
<b>BOROUGH</b>	<b>72,409</b>	<b>0.7%</b>
<b>CITY</b>	<b>17,116</b>	<b>0.2%</b>
<b>NATIVE CORPORATION OR TRIBE/VILLAGE</b>		
Chugach Alaska Corporation	52,684	
Cook Inlet Region, Inc.	523,108	
English Bay Corporation	61,864	
Kenai Natives Association, Inc.	8,294	
Nanwalek Village and Council	82	
Ninilchik Native Association and Village Council	44,335	
Port Graham Corporation and Village Council	67,057	
Salamatof Native Association, Inc.	24,060	
Seldovia Native Association, Inc.	72,809	
Tyonek Native Corporation and Village	78,849	
<b>Total Native Land</b>	<b>929,174</b>	<b>8.9%</b>
<b>OTHER PRIVATE LAND</b>	<b>357,826</b>	<b>3.4%</b>
<b>TOTAL ALL OWNERS</b>	<b>10,458,699</b>	

Source: KPB Assessing Department, Cogan Owens Cogan

There is very little land in the Project vicinity that is actually owned by the borough. However, the borough does regulate some types of uses on specific land designations throughout the borough:

- Subdivision of privately owned land within incorporated and unincorporated areas
- Local option zoning
- Floodplain development
- Coastal zone development

- Development near certain anadromous fish-bearing streams
- Mobile home developments
- Gravel pits/material sites
- Correctional community residential centers
- Concentrated animal feeding operations.

Land use in the KPB, as shown on Figure 4.11-3, is primarily vacant and rural. This is true for the more populated Kenai Peninsula as well as the western side of Cook Inlet where the Project is located. According to data from the KPB Comprehensive Plan (KPB, 2005), land use in tax parcels (does not include the vast tracts of state and federal lands) within the borough has been undergoing change. Combined residential and commercial use of privately owned parcels has increased substantially since the early 1990's. However, while residential use has increased 64 percent, the net gain in commercial and industrial uses was only 10 percent. Most private parcels and development in the borough are located along the highway corridor from Turnagain Arm to Seward and Homer. There are only a few more remote communities, such as Tyonek, Seldovia, Port Graham, and Nanwalek that are accessible only by boat and plane.

#### **4.11.3. Demographics**

Populations in the Project vicinity vary from the Dena'ina village of Tyonek to Kenai Peninsula communities to Anchorage, Alaska's largest city. The nearest year round residents to the Project live in the Native Village of Tyonek, approximately 38 miles to the east of the proposed powerhouse site. The population centers of the Kenai Peninsula and Anchorage lie across Cook Inlet to the east. The demographics of these areas are varied and a result of their historical patterns of settlement and accessibility to the state and world by road, rail, and commercial air transport.

##### **Tyonek**

In the last century, the population of Tyonek increased steadily from 58 in 1920 to 239 in 1980, but declined to 154 by 1990 (Bechtel, 1983; DCRA, accessed 2009). According to the 2000 U.S. Census, the population of Tyonek was 193. The current population is listed as 181 (2007 Estimated Population – not certified) and is approximately 95 percent Alaska Native (DCRA, accessed 2009). Tables 4.11-2 through 4.11-4 below list the demographic characteristics of Tyonek, including race, gender, age, and occupation (DCRA, accessed 2009; 2000 U.S. Census Data). No data is available on education levels.

**Table 4.11-2.** Tyonek population statistics by race (DCRA, accessed 2009; 2000 U.S. Census Data).

<b>Population by Race: 2000 U.S. Census Data</b>	
Population in 2000:	193
White:	9
Alaska Native or Amer. Indian:	184
Black:	0
Asian:	0
Hawaiian Native:	0
Other Race:	0
Percent Native*:	95.30%
All or Part Alaska Native/Indian:	184
Hispanic Origin (Any Race):	5
Not Hispanic (Any Race):	188

(\*Percent reporting Alaska Native alone or in combination with one or more races)

**Table 4.11-3.** Tyonek population statistics by gender and age (DCRA accessed 2009; 2000 U.S. Census Data).

<b>Population by Gender and Age: 2000 U.S. Census Data</b>	
<b>Gender:</b>	
Male:	107
Female:	86
<b>Age:</b>	
Age 4 and under:	18
Age 5 - 9:	22
Age 10 - 14:	20
Age 15 - 19:	16
Age 20 - 24:	9
Age 25 - 34:	30
Age 35 - 44:	35
Age 45 - 54:	17
Age 55 - 59:	8
Age 60 - 64:	8
Age 65 - 74:	6

<b>Population by Gender and Age: 2000 U.S. Census Data</b>	
Age 75 - 84:	4
Age 85 and over:	0
<b>Median Age:</b>	<b>28.3</b>
Pop. Age 18 and over:	121
Pop. Age 21 and over:	114
Pop. Age 62 and over:	13

**Table 4.11-4.** Income and occupations in Tyonek (DCRA, accessed 2009; 2000 U.S. Census Data).

<b>Income, Poverty, and Occupation: 2000 U.S. Census Data</b>	
<b>Income and Poverty Levels:</b>	
These figures are estimates based on a sample, and are subject to sampling variability. The percent of all households sampled in Tyonek was <b>38.1%</b> .	
<b>Note:</b> Current socio-economic measures could differ significantly. Tyonek is located in the Kenai Peninsula Census Area.	
Per Capita Income:	\$11,261
Median Household Income:	\$26,667
Median Family Income:	\$29,792
Persons in Poverty:	29
Percent Below Poverty:	13.9%
Total Potential Work Force (Age 16+):	144
Total Employment:	64
<b>Employment by Occupation:</b>	
Management, Professional & Related:	15
Service:	21
Sales & Office:	12
Construction, Extraction & Maintenance:	9
Production, Transportation & Material Moving:	7

The Dena'ina Indians settled in the area about 1,500 years ago and still comprise the vast majority of the population, despite historical and contemporary influxes of Europeans and Americans during periods of mineral exploration, mining, and resource development. Tyonek residents, who call themselves the Tebughna, strive to maintain a traditional subsistence lifestyle.

Subsistence activities provide salmon, moose, beluga whale (harvest depending on Endangered Species Status), waterfowl, and berries and other edible plants.

Twenty residents hold commercial fishing permits, some trap in the winter, and some residents provide recreational and fishing and hunting guide services (DCRA, accessed 2009). Besides these commercial fishing and hunting activities, there are few opportunities for non-subsistence occupations outside of tribal government, community services, the schools, and the local store. As a result average yearly incomes are low and cash is less a part of their economy than in Alaska communities connected to population centers by roads and rail.

### **Kenai Peninsula Borough**

The population characteristics of the Kenai Peninsula Borough, as whole, differ substantially from those of Tyonek and the remote west side of Cook Inlet. The population of the Kenai Peninsula has been growing steadily for the last several decades and stood at over 49,000 at the time of the 2000 census. Population growth was greatest during the boom years of the 1970's and early 1980's, as shown in Table 4.11-5. The current population is estimated to be 52,407 (DCCED Certified Population) (DCRA, accessed 2009).

**Table 4.11-5.** Population growth in the Kenai Peninsula Borough (KPB, 2005).

<b>Kenai Peninsula Borough- Decennial Years (1960 – 2000) (U.S. Census Data)</b>			
<b>Year</b>	<b>Population</b>	<b>Total Change</b>	<b>Annual Rate of Change</b>
1960	9,053	--	--
1970	16,586	7,533	6.2%
1980	25,282	8,696	4.3%
1990	40,802	15,520	4.9%
2000	49,691	8,889	2.0%

The racial composition of the borough is listed in Table 4.11-6. Except for the small native villages, the population of the KPB is predominantly white.

**Table 4.11-6.** Kenai Peninsula Borough population statistics by race (DCRA, accessed 2009; 2000 U.S. Census Data).

<b>Population by Race: 2000 U.S. Census Data</b>	
Population in 2000:	<b>49,691</b>
White:	42,841
Alaska Native or Amer. Indian:	3,713
Black:	229
Asian:	480
Hawaiian Native:	86
Other Race:	415
Two or More Races	1,927
Percent Native*:	10.20%
All or Part Alaska Native/Indian:	5,065
Hispanic Origin (Any Race):	1,087
Not Hispanic (Any Race):	48,604

(\*Percent reporting Alaska Native alone or in combination with one or more races)

As shown in Table 4.11-7, the KPB has a high percentage of adults in the age range of 25 to 55 years. Also according to the 2000 U.S. Census, males outnumber females in the borough by 52 percent to 48 percent; a ratio that is similar to the state as a whole (KPB, 2005).

**Table 4.11-7.** Kenai Peninsula Borough Population Statistics by gender and age (DCRA accessed 2009; 2000 U.S. Census Data).

<b>Population by Gender and Age: 2000 U.S. Census Data</b>	
<b>Gender:</b>	
Male:	25,853
Female:	23,838
<b>Age:</b>	
Age 4 and under:	3,288
Age 5 - 9:	4,024
Age 10 - 14:	4,698
Age 15 - 19:	4,140
Age 20 - 24:	2,132
Age 25 - 34:	5,648
Age 35 - 44:	9,074
Age 45 - 54:	8,739
Age 55 - 59:	2,632
Age 60 - 64:	1,667
Age 65 - 74:	2,361
Age 75 - 84:	1,077
Age 85 and over:	211
<b>Median Age:</b>	<b>36.3</b>
Pop. Age 18 and over:	34,832
Pop. Age 21 and over:	33,091
Pop. Age 62 and over:	4,549

**Table 4.11-8.** Income and occupations in Kenai Peninsula Borough (DCRA, accessed 2009; 2000 U.S. Census Data).

<b>Income, Poverty, and Occupation: 2000 U.S. Census Data</b>	
<b>Income and Poverty Levels:</b>	
These figures are estimates based on a sample, and are subject to sampling variability. The percent of all households sampled in Kenai Peninsula Borough was <b>27.7%</b> .	
<b>Note:</b> Current socio-economic measures could differ significantly. Kenai Peninsula Borough located in the Kenai Peninsula Census Area.	
Per Capita Income:	\$20,949
Median Household Income:	\$46,397
Median Family Income:	\$54,106
Persons in Poverty:	4,861
Percent Below Poverty:	10.0%
Total Potential Work Force (Age 16+):	36,781
Total Employment:	20,486
<b>Employment by Occupation:</b>	
Management, Professional & Related:	5,581
Service:	3,471
Sales & Office:	4,740
Farming, Fishing & Forestry:	485
Construction, Extraction & Maintenance:	3,394
Production, Transportation & Material Moving:	2,693

In general, adjusted incomes in the KPB decreased during the last couple of decades (KPB, 2005). In the Project area, the median household income for Tyonek has increased substantially, although it is still lower than other communities described in the KPB Comprehensive Plan, except for Hope.

The KPB Comprehensive Plan (KPB, 2005) points out the following issues regarding borough demographics:

- Aging population – the average age and percent of population in higher age groups has increased and is predicted to continue to do so.
- Declines in school age children – there are budget and service issues surrounding declining enrollment.

- Declining incomes – decreases in real income may signal increased demand on social and other services at the same time that there is less money to support taxes and fees.

## Anchorage

The population of the Municipality of Anchorage grew most rapidly during the decade between 1980 and 1990, increasing from 174,431 to 226,338 (MOA, 2001). Although now growing more slowly, the population is about 284,000 today (283,938 – 2007 DCCED Certified Population; DCRA, accessed 2009), more than three times the 83,000 it was at statehood in 1960. The growth of outlying areas of the Municipality and the Matanuska-Susitna Borough represents a shift in settlement patterns in the Anchorage bowl (MOA, 2001).

The percent of the Anchorage population categorized in a racial minority has increased from less than 10 percent in 1960 to over 25 percent in 1999 (MOA, 2001). The average age in Anchorage in 1980 was 26.3 years increasing by 1998 to 32.1 years and in 2000 to 32.4 years (MOA, 2001; 2000 U.S. Census). Households were predominantly comprised of married couples at 64 percent, followed by one person households at 23 percent, single parent households at 14 percent, and non-family households at 9 percent (MOA, 2001). Population statistics for Anchorage are listed in Tables 4.11-9 to 4.11-11, below.

**Table 4.11-9.** Anchorage population statistics by race (DCRA, accessed 2009; 2000 U.S. Census Data).

<b>Population by Race: 2000 U.S. Census Data</b>	
Population in 2000:	<b>260,283</b>
White:	188,009
Alaska Native or Amer. Indian:	18,941
Black:	15,199
Asian:	14,433
Hawaiian Native:	2,423
Other Race:	5,703
Two or More Races:	15,575
Percent Native*:	10.40%
All or Part Alaska Native/Indian:	26,995
Hispanic Origin (Any Race):	14,799
Not Hispanic (Any Race):	245,484

**Table 4.11-10.** Anchorage population statistics by gender and age (DCRA accessed 2009; 2000 U.S. Census Data).

<b>Population by Gender and Age: 2000 U.S. Census Data</b>	
<b>Gender:</b>	
Male:	131,668
Female:	128,615
<b>Age:</b>	
Age 4 and under:	20,033
Age 5 - 9:	21,867
Age 10 - 14:	21,501
Age 15 - 19:	19,662
Age 20 - 24:	17,694
Age 25 - 34:	40,113
Age 35 - 44:	48,210
Age 45 - 54:	38,803
Age 55 - 59:	11,240
Age 60 - 64:	6,918
Age 65 - 74:	8,895
Age 75 - 84:	4,284
Age 85 and over:	1,063
<b>Median Age:</b>	<b>32.4</b>
Pop. Age 18 and over:	184,412
Pop. Age 21 and over:	173,564
Pop. Age 62 and over:	18,082

**Table 4.11-11.** Income and occupations in Anchorage (DCRA, accessed 2009; 2000 U.S. Census Data).

<b>Income, Poverty, and Occupation: 2000 U.S. Census Data</b>	
<b>Income and Poverty Levels:</b>	
These figures are estimates based on a sample, and are subject to sampling variability. The percent of all households sampled in Tyonek was <b>14.5%</b> .	
<b>Note:</b> Current socio-economic measures could differ significantly. Anchorage is located in the Anchorage Census Area.	
Per Capita Income:	\$25,287
Median Household Income:	\$55,546
Median Family Income:	\$63,682
Persons in Poverty:	18,682
Percent Below Poverty:	7.4%
Total Potential Work Force (Age 16+):	192,782
Total Employment:	134,240
<b>Employment by Occupation:</b>	
Management, Professional & Related:	46,271
Service:	18,970
Sales & Office:	35,834
Farming, Fishing & Forestry:	432
Construction, Extraction & Maintenance:	12,136
Production, Transportation & Material Moving:	12,094

The Municipality of Anchorage (MOA, 2001) makes the following points about demographic trends:

- The total population is growing but the number of young adults ages 20 to 34 years is declining, due to lack of growth in high paying jobs, fewer military personnel, young people leaving the state for education, and young families migrating to the Matanuska-Susitna Borough.
- The population is aging but is still relatively young compared to the rest of the nation: median age 32.1 compared to 36.2, respectively.
- The school age population remains almost unchanged since 1990.
- The number of “empty nesters” age 50 to 65 years has increased and is expected to be Anchorage’s fastest growing age group; but it will still lag behind the national projection.

#### 4.11.4. Industry and Employment

##### Tyonek

Having a subsistence based culture, formal commercial and industrial employment among the residents of Tyonek would be considered low by urban standards. The unemployment rate is approximately 27 percent (DCRA, accessed 2009; 2000 U.S. Census Data). Table 4.11-13 lists employment statistics for Tyonek.

**Table 4.11-12.** Employment in Tyonek (DCRA, accessed 2009; 2000 U.S. Census Data).

<b>Employment: 2000 U.S. Census Data</b>	
<b>Note:</b> Current socio-economic measures could differ significantly. Tyonek is located in the Kenai Peninsula Census Area.	
<b>Employment:</b>	
Total Potential Work Force (Age 16+):	144
<b>Total Employment:</b>	64
Civilian Employment:	64
Civilian Unemployed (And Seeking Work):	24
Percent Unemployed:	27.3%
Adults Not in Labor Force (Not Seeking Work):	56
Percent of All 16+ Not Working (Unemployed + Not Seeking):	55.6%
Private Wage & Salary Workers:	31
Self-Employed Workers (in own not incorporated business):	3
Government Workers (City, Borough, State, Federal):	30
<b>Employment by Industry:</b>	
Agriculture, Forestry, Fishing & Hunting, Mining:	3
Construction:	11
Transportation, Warehousing & Utilities:	5
Education, Health & Social Services:	17
Arts, Entertainment, Recreation, Accommodation & Food Services:	8
Other Services (Except Public Admin):	6
Public Administration:	14

## **Kenai Peninsula Borough**

The KPB has a diverse economy with several industries providing significant opportunities for employment (DCRA, accessed 2009).

- Services for Cook Inlet oil drilling and production
- Services for Cook Inlet natural gas drilling and production
- Oil refining
- Tourism – both in-state and out-of-state visitors
- Commercial fishing and processing

Commercial fishing permits (salmon, herring, cod, bottom fish and shellfish) are held by 1,555 borough residents. Other important industries and employers are government, agriculture, transportation, construction, retail trade, and timber and lumber. Harvesting spruce bark beetle-killed timber is becoming more profitable and practicable.

**Table 4.11-13.** Employment in the Kenai Peninsula Borough (DCRA, accessed 2009; 2000 U.S. Census Data).

<b>Employment: 2000 U.S. Census Data</b>	
<b>Note:</b> Current socio-economic measures could differ significantly. The Kenai Peninsula Borough is located in the Kenai Peninsula Census Area.	
<b>Employment:</b>	
Total Potential Work Force (Age 16+):	36,781
<b>Total Employment:</b>	<b>20,486</b>
Civilian Employment:	20,364
Military Employment:	122
Civilian Unemployed (And Seeking Work):	2,630
Percent Unemployed:	11.4%
Adults Not in Labor Force (Not Seeking Work):	13,665
Percent of All 16+ Not Working (Unemployed + Not Seeking):	44.3%
Private Wage & Salary Workers:	13,691
Self-Employed Workers (in own not incorporated business):	2,578
Government Workers (City, Borough, State, Federal):	3,976
<b>Employment by Industry:</b>	
Agriculture, Forestry, Fishing & Hunting, Mining:	2,157
Construction:	1,898
Manufacturing:	1,046
Wholesale Trade:	383
Retail Trade:	2,568
Transportation, Warehousing & Utilities:	1,319
Information:	294
Finance, Insurance, Real Estate, Rental & Leasing:	638
Professional, Scientific, Management, Administrative & Waste Mgmt:	1,046
Education, Health & Social Services:	3,996
Arts, Entertainment, Recreation, Accommodation & Food Services:	2,209
Other Services (Except Public Admin):	1,283
Public Administration:	1,527

## Anchorage

Anchorage – where there are headquarters for the oil and gas industries, finance and real estate, transportation, communications, and government agencies – is the center of commerce for the state. There also are numerous facilities and services for business visitors and tourists. In addition, over 8,500 military personnel are stationed at Fort Richardson and Elmendorf AFB. The unemployment rate is low, although it fluctuates seasonally. There are 912 commercial fishing permits held by Anchorage residents. Most permit-owners fish in Bristol Bay, Kodiak or Cordova (DCRA, accessed 2009).

**Table 4.11-14.** Employment in Anchorage (DCRA, accessed 2009; 2000 U.S. Census Data).

<b>Employment: 2000 U.S. Census Data</b>	
<b>Note:</b> Current socio-economic measures could differ significantly. Anchorage is located in the Anchorage Census Area.	
<b>Employment:</b>	
Total Potential Work Force (Age 16+):	192,782
<b>Total Employment:</b>	<b>134,240</b>
Civilian Employment:	125,737
Military Employment:	8,503
Civilian Unemployed (And Seeking Work):	9,110
Percent Unemployed:	6.8%
Adults Not in Labor Force (Not Seeking Work):	49,432
Percent of All 16+ Not Working (Unemployed + Not Seeking):	30.4%
Private Wage & Salary Workers:	89,023
Government Workers (City, Borough, State, Federal):	27,646
Unpaid Family Workers:	249
<b>Employment by Industry:</b>	
Agriculture, Forestry, Fishing & Hunting, Mining:	3,886
Construction:	7,995
Manufacturing:	2,542
Wholesale Trade:	4,428
Retail Trade:	15,327
Transportation, Warehousing & Utilities:	11,809
Information:	4,079
Finance, Insurance, Real Estate, Rental & Leasing:	7,654
Professional, Scientific, Management, Administrative & Waste Mgmt:	12,845

Education, Health & Social Services:	24,532
Arts, Entertainment, Recreation, Accommodation & Food Services:	11,342
Other Services (Except Public Admin):	7,156
Public Administration:	12,142

#### 4.11.5. Public Sector (Taxes and Services)

##### Tyonek

The Native Village of Tyonek is unincorporated and does not support either city officials or a system of finances. Services in the community, including law enforcement, fire, medical, water and sewer, and education, are provided by the state, the KPB, or the village council (Table 4.11-15). The community medical clinic, Indian Creek Health Clinic, is owned and operated by the Native Village of Tyonek and the village council. Classified as an isolated village, Tyonek is in the EMS Region 2J in the Kenai Peninsula Region and emergency evacuation services are only by air. Emergencies are handled locally by volunteers and the clinic health aide (DCRA, accessed 2009).

The community – approximately 90 homes – is served by a piped water and sewer system. The village water source is Second Lake; water from which is treated and stored in a 175,000 gal tank. Tyonek has a small coin operated washeteria with one washer and dryer (DCRA, accessed 2009).

Kindergarten through 12<sup>th</sup> grade education is provided by the state and administered by the KPB. The DCRA (accessed 2009) lists a total of 37 students and eight teachers attending and working in Tebughna School.

Communications services are provided by Anchorage or Matanuska area businesses.

**Table 4.11-15.** Public services in Tyonek (DCRA, accessed 2009).

<b>Local Services and Facilities</b>	
Police:	State troopers in Girdwood
Fire/Rescue:	Tyonek Volunteer Rescue Squad
Youth Center:	Boys and Girls Club
Community Hall:	Community Hall
Library:	School/Community Library
<b>Water Distribution, Source, and Treatment Systems:</b>	
Water System Operator:	Village Council
Washeteria Operator:	None
Piped Water System:	Yes
Central Watering Point (Haul):	No
Multiple Watering Points:	No
Water Truck (Delivery):	No

Individual Wells:	Yes
Community Well Source:	No
Surface Water Source:	Yes
DEC Water Permit Number:	240472
Water Is Filtered:	Yes
Water Is Chlorinated:	Yes
<b>Sewage Collection Systems:</b>	
Sewer System Operator:	Village Council
Piped Sewer System:	Yes
Honeybucket Haul:	No
Honeybucket Pits:	No
Individual Septic Tanks:	Yes
Community Septic Tank:	Yes
Sewage Pumper:	Yes
Sewage Lagoon:	No
Sewage Lift Station:	No
Outhouses:	No
<b>Refuse/Landfill System:</b>	
Refuse Collector:	None
Landfill Operator:	Kenai Peninsula Borough
DEC Landfill Permit:	No
Type of Landfill:	Class 3, 8423-BA004 Expired
<b>Health Care:</b>	
Clinic/Hospital in Community:	Indian Creek Health Clinic
Operator:	Native Village of Tyonek
Owner:	Village Council
Facility Status:	The clinic needs major renovations
Alternate Health Care:	Tyonek Volunteer Rescue Squad
<b>Local Schools:</b>	
District Name:	Kenai Peninsula Schools
Operated By:	Kenai Peninsula Borough
Tyonek Schools: Tebughna School	Grades K thru 12
<b>Communications:</b>	
In-State Phone:	Matanuska Telephone Assoc.
Long-Distance Phone:	AT&T Alascom
TV Stations:	KYES; KAKM
Radio Stations:	All Anchorage stations; KSRM-AM; KWHQ-FM
Teleconferencing:	Alaska Teleconferencing Network

## Kenai Peninsula Borough

Kenai Peninsula Borough is incorporated as a second class borough and as such levies taxes and fees, which fund borough government and services. The KPB operates the schools and the landfill but most other services such as sewer, water, fire, and law enforcement are managed locally by each city. There are 44 schools in the Kenai Peninsula School District with a total of 9,487 students and employing 716 teachers. Tables 4.11-16 and 4.11-17 list the finances for the KPB for 2005 (DCRA, accessed 2009).

**Table 4.11-16.** Kenai Peninsula Borough revenues (DCRA, accessed 2009)

<b>2005 Municipal Revenues</b>			
<b>Local Operating Revenues</b>		<b>Outside Operating Revenues</b>	
Taxes:	\$58,372,872	Federal Operating:	\$5,033,393
Service Charges:	\$1,231,122	Other State Revenue:	\$3,634,590
Enterprise:	\$79,739,464	State/Federal Education Funds:	\$59,617,943
Other Local Revenue:	\$7,664,902		
<b>Total Local Operating Revenues:</b>	<b>\$147,008,360</b>	<b>Total Outside Revenues:</b>	<b>\$68,285,926</b>
Total Operating Revenues (local + outside):	\$215,294,286	State/Federal Capital Project Revenues:	\$1,673,099
<b>Total All Revenues: \$216,967,385</b>			

**Table 4.11-17.** Kenai Peninsula Borough expenditures (DCRA, accessed 2009)

<b>2005 Municipal Expenditures</b>		
<b>Total All Expenditures: \$218,680,175</b>		
	General Government Expenditures:	\$13,729,978
	Public Safety:	\$9,782,444
	Roads:	\$3,198,758
	Refuse/Landfill:	\$4,348,928
	Clinic Hospital:	\$68,867,214
	Parks and Recreation:	\$1,383,393
	Education:	\$95,553,345
	Capital Projects:	\$17,209,587

## Anchorage

Anchorage is a unified home rule municipality with the power to tax and raise revenues to support government and public services including schools, law enforcement, water and sewer, sea port and airport, roads, health services, and capital projects.

There are 97 schools in the Anchorage School District that offer a range of educational opportunities for grades preschool through 12: deaf and hard of hearing; alternative teaching; and native cultural and other charter schools. The school district employs 3,188 teachers for 48,837 students (DCRA, accessed 2009).

Tables 4.11-18 and 4.11-19 list Anchorage revenues and expenditures for 2006.

**Table 4.11-18.** Anchorage revenues (DCRA, accessed 2009)

<b>2006 Municipal Revenues</b>			
<b>Local Operating Revenues</b>		<b>Outside Operating Revenues</b>	
Taxes:	\$455,172,329	Federal Operating:	\$11,437,872
License/Permits:	\$13,840,537	State Fish Tax Sharing:	\$85,846
Service Charges:	\$46,170,550	Other State Revenue:	\$41,946,753
Enterprise:	\$238,325,250	State/Federal Education Funds:	\$335,518,100
Other Local Revenue:	\$227,454,726		
<b>Total Local Operating Revenues:</b>	<b>\$980,963,392</b>	<b>Total Outside Revenues:</b>	<b>\$388,988,571</b>
Total Operating Revenues (local + outside):	\$1,369,951,963	State/Federal Capital Project Revenues:	\$67,187,087
<b>Total All Revenues: \$1,437,139,050</b>			

**Table 4.11-19.** Anchorage expenditures (DCRA, accessed 2009).

<b>2006 Municipal Expenditures</b>		
<b>Total All Expenditures: \$1,257,938,683</b>		
	General Government Expenditures:	\$25,781,213
	Public Safety:	\$172,462,047
	Roads:	\$20,644,987
	Airport:	\$1,161,779
	Harbor/Dock:	\$6,226,372
	Refuse/Landfill:	\$17,509,609
	Electric Utility:	\$71,754,729
	Water/Sewer:	\$53,819,127
	Other Public Works:	\$50,485,167
	Clinic Hospital:	\$24,360,212
	Miscellaneous Public Services:	\$62,267,440
	Education:	\$553,411,152
	Capital Projects:	\$132,971,388

#### **4.11.6. Electricity**

##### **Tyonek**

Chugach Electric Association provides electrical power to Tyonek. The Beluga power plant, which generates power using natural gas, is located about 10 miles northwest of the community. A total of 385 megawatts is generated at the Beluga power plant for distribution within the “Railbelt” communities of central and southcentral Alaska.

##### **Kenai Peninsula Borough**

Electricity is supplied to the northern Kenai Peninsula by Chugach Electric Association. The south and central portions of the peninsula are supplied by Homer Electric Association. Homer Electric purchases power from Chugach Electric and is a partner with them in the Bradley Lake Hydroelectric Project, receiving about 12 percent of that project’s output. Homer Electric also has a 40 megawatt co-generation facility in North Kenai, which supplies both the Agrium plant and the Railbelt electric grid. Chugach Electric operates three power generation facilities in the borough:

- The Beluga power plant near Tyonek (natural gas)
- The Bernice Lake power plant near Nikiski (natural gas)
- The Cooper Lake Hydroelectric Project near Cooper Landing

The City of Seward owns its local electrical distribution system and transmission lines north of the city. Power is purchased from Chugach Electric. In addition, the city owns one percent of the output of the Bradley Lake Project and a 12 megawatt diesel generator for back up.

### **Anchorage**

Electrical power in Anchorage is supplied by Municipal Light and Power and Chugach Electric Association. Their current combined capacity can meet near-term peak demands but the need for additional capacity is anticipated by 2015 to 2020 (MOA, 2001). A number of new projects are planned including new transmission lines, new transmission facilities, line upgrades, and undergrounding of lines. The MOA reports the following issues related to Anchorage's power supply:

- Revision of the Utility Corridor Plan and Underground Utilities Implementation Plan;
- Impact of new technologies on distribution and marketing of power;
- Future power generation capacity;
- Increased reliance on the intertie grid;
- Shared utilities with military installations.

#### **4.11.7. Potential Adverse Impacts**

The Project area is relatively isolated and unpopulated. Therefore, especially during construction, there is likely to be an increase in the local population. Construction workers would be housed primarily in camps built specifically for that purpose and dismantled after construction was complete. However, some increase in the native population of Tyonek could be expected because of the availability of Project related employment opportunities. Tyonek has limited infrastructure and housing, but as stated in Section 4.11.2, the TNC and village council are planning a new subdivision as one way to prepare for regional resource development projects. Even though Tyonek would try to limit outside influences on the community, there would likely be an increased need for law enforcement and public safety. Additionally, subsistence activities may be disrupted during construction and by habitat changes resulting from Project operation. Recreational pressure on Project area lands also may increase if accessibility is improved.

#### **4.11.8. Proposed Protection, Mitigation, and Enhancement Measures**

The Project will comply with management plans for borough, state, and federal lands in the Project area. Environmental impacts that would change recreational or subsistence use of Project area lands will be mitigated to the extent practicable. Camps for workers will be used during construction to avoid impacts and conflicts with area residents. Access to Project roads may be controlled to mitigate increased recreational pressure. Additional measures will be proposed with the Application for Original License to address ongoing socioeconomic impacts of the project associated with construction and long-term operation of the Project.