

3.3 NEEDS AND WELFARE OF THE PEOPLE – SOCIOECONOMICS

This section addresses the monetized economy of the communities most likely to be affected by the proposed project. In addition to jobs involving labor for wages, subsistence activities are an indispensable component of the socioeconomic system of rural Alaska communities. Although subsistence frequently involves no monetary exchange, the addition of food procured by hunting and fishing can be a significant contributor to household and community welfare. In addition, employment can provide income necessary to support subsistence harvest activities. Subsistence activity and the importance of subsistence as it relates to income and its support in stabilizing communities during economic downtimes are discussed in Section 4.9, Subsistence. Similarly, cultural ties to the area can impact the socioeconomic welfare of a community. The sociocultural dimensions are discussed in Section 3.9, Subsistence and Section 3.7, Cultural Resources.

The Environmental Impact Statement (EIS) analysis area for this section includes the State of Alaska, regions, and communities where aspects of the monetized economy, including population, employment, income, housing, and education, would be impacted by the construction, operation, and closure of all components of each alternative of the proposed project. Specific communities are listed in Table 3.3-1.

Table 3.3-1: Population Characteristics of Affected Communities

Area	Population ¹			Age ²				Gender ²	
	2010	2018	Change 2010-2018	Under 18	18-64	65 and Over	Median Age	Male	Female
Lake and Peninsula Borough	1,631	1,663	2.0%	28%	64%	8%	32.3	51%	49%
Igiugig	50	52	4.0%	37%	54%	9%	29.0	39%	61%
Iliamna	109	102	-6.4%	29%	63%	8%	34.8	48%	52%
Kokhanok	170	168	-1.2%	28%	64%	8%	28.1	50%	50%
Levelock	69	81	17.4%	38%	52%	10%	24.5	44%	56%
Newhalen	190	214	12.6%	39%	58%	3%	25.3	54%	46%
Nondalton	164	129	-21.3%	26%	68%	6%	31.8	48%	52%
Pedro Bay	42	33	-21.4%	0%	83%	17%	57.3	56%	44%
Port Alsworth	159	227	42.8%	46%	49%	5%	18.9	44%	56%
Dillingham Census Area	4,847	5,021	3.6%	31%	61%	8%	30.1	52%	48%
Dillingham	2,329	2,382	2.3%	30%	60%	10%	31.6	49%	51%
Ekwok	115	106	-7.8%	25%	61%	14%	28.3	48%	52%
Koliganek	209	205	-1.9%	34%	57%	9%	26.6	52%	48%
New Stuyahok	510	496	-2.7%	39%	53%	8%	24.8	58%	42%
Kenai Peninsula Borough	55,400	58,471	5.5%	23%	62%	15%	40.6	52%	48%
Bristol Bay Borough	997	879	-11.8%	23%	67%	10%	41.8	58%	42%

Table 3.3-1: Population Characteristics of Affected Communities

Area	Population ¹			Age ²				Gender ²	
	2010	2018	Change 2010-2018	Under 18	18-64	65 and Over	Median Age	Male	Female
Anchorage	291,826	295,365	1.2%	25%	66%	9%	33.1	51%	49%
Alaska	710,231	736,239	3.7%	25%	65%	10%	33.9	52%	48%

Source: ¹ADOL 2019; ²USCB 2018

3.3.1 Regional Setting

3.3.1.1 Overview of the State and Regional Economy

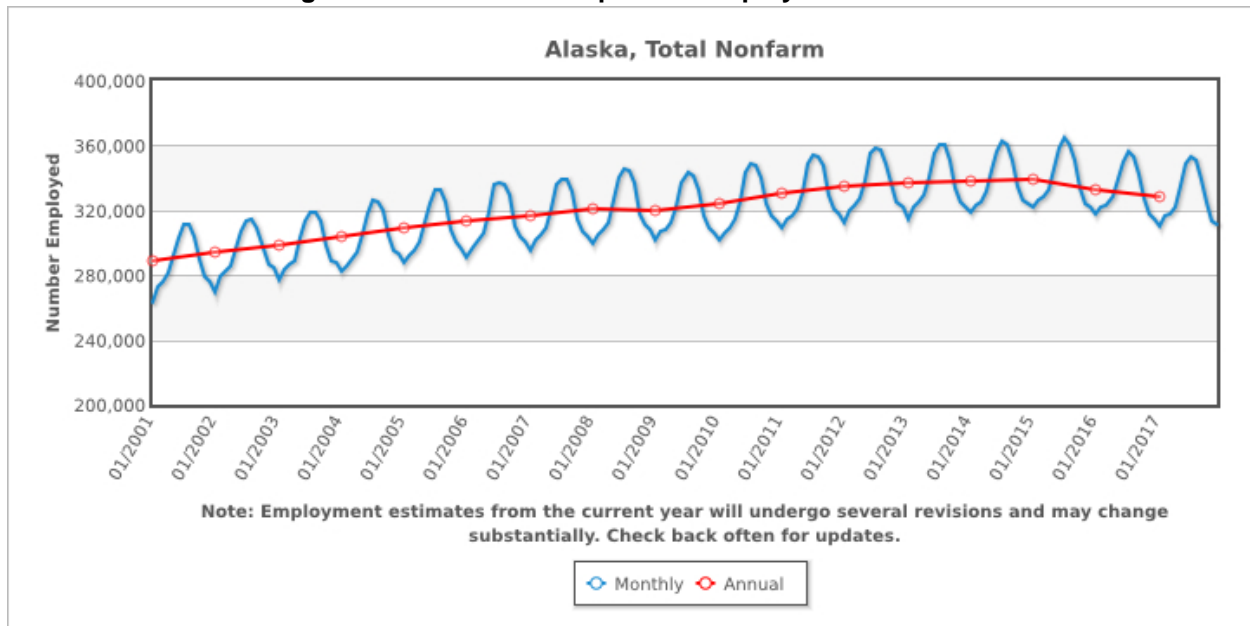
The State of Alaska relies on revenue from natural resource extraction as a primary source of income. Alaska collects oil and gas production taxes and royalties based on the assessed value of the gross product. The state also receives production royalty payments from production of minerals on a state mining claim or state lands; state and local governments also collect and share property tax on facilities built to support resource development.

Alaska has a long history of boom-bust cycles associated with resource extraction (e.g., oil and gold) that have impacted this tax revenue and the state economy. To help smooth revenue and investments, the State of Alaska established the Alaska Permanent Fund (APF), which was incorporated into the Alaska constitution in 1977. The APF is a permanent natural resource trust fund used to pay citizen dividends, manage inflation, and support the general fund. To support the fund, a percentage of the State’s income from mineral extraction is placed in the APF. As of August 2017, the APF had a market value of \$60 billion (USDOJ 2018).

Local communities and regions can also experience boom-bust cycles related to projects that occur in their area. These cycles can occur from the influx of workers and income during the construction cycle, to the more moderate employment during operations, to the loss of a major employer in the area after closure. In Alaska as a whole, recent recessions have more typically been triggered by a drop in oil prices, resulting in slowdown of spending in the oil industry and a drop in state revenues. With regard to the mining industry, cyclical metal prices can affect mining industry investment. However, most of the large operating mines in Alaska have been successful in finding additional reserves adjacent to their mine, extending their operating life and postponing a potential “bust” cycle.

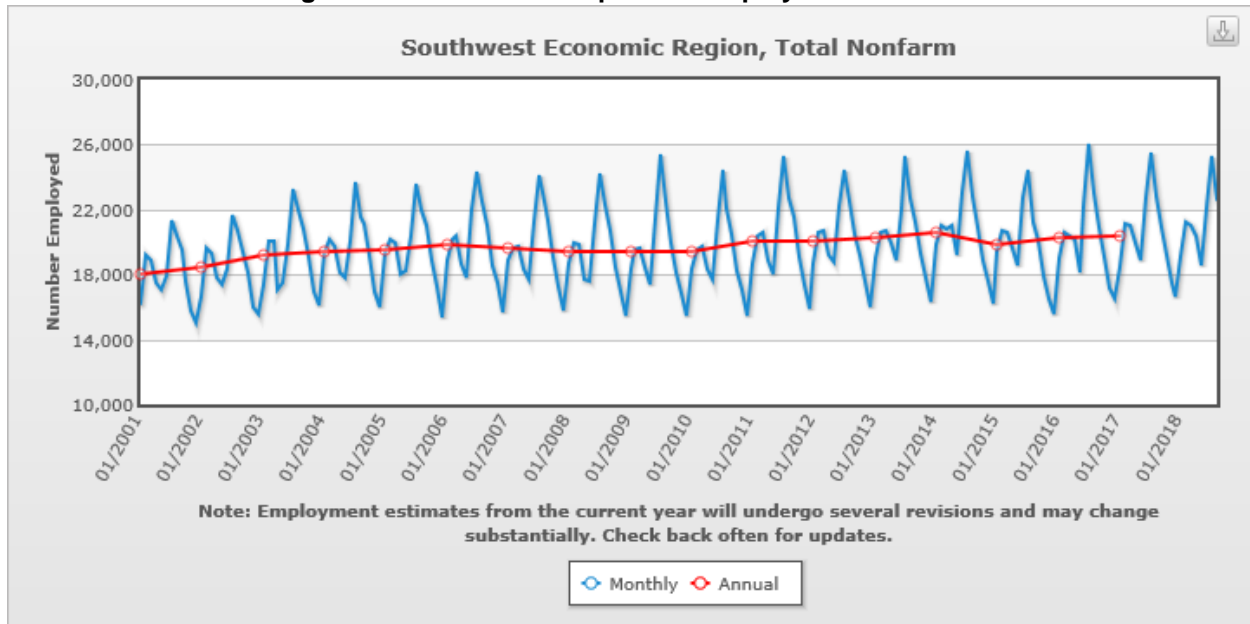
Regardless of any boom-bust cycles, employment in Alaska varies greatly throughout the year. Many of the jobs in Alaska are seasonal, leading to large fluctuation in employment between the summertime peaks and the wintertime lows. Figure 3.3-1 and Figure 3.3-2 show the cyclical characteristic of seasonal employment in Alaska and the Southwest Economic Region, respectively. Much of the seasonal employment is related to the commercial fishing and tourism industries. Some workers with year-round employment also participate in seasonal work activities. Subsistence activities can co-exist with, and help stabilize, the effects of seasonal employment.

Figure 3.3-1: Seasonal Impact on Employment in Alaska



Source: ADOL 2018

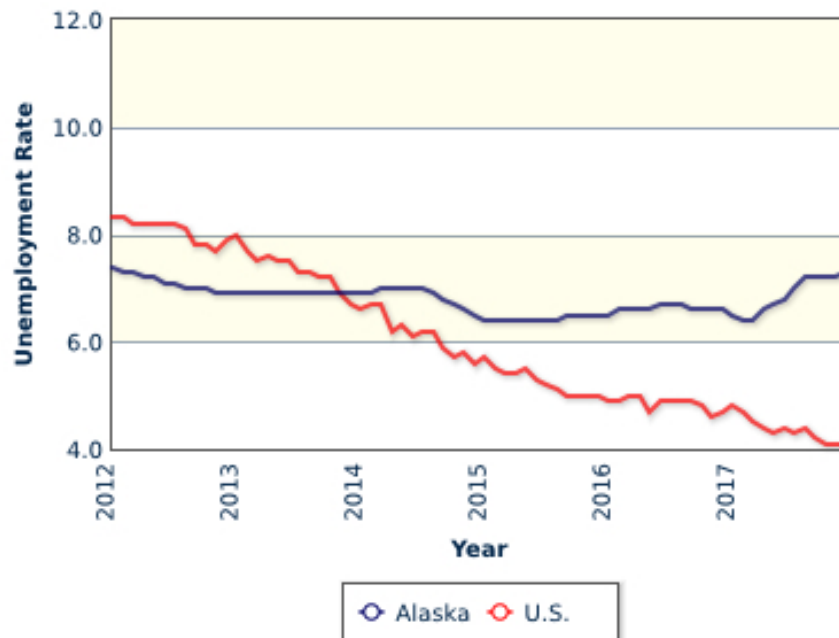
Figure 3.3-2: Seasonal Impact on Employment in Alaska



Source: ADOL 2018

Although the unemployment rate for the US as a whole has been decreasing for a number of years, the unemployment rate in Alaska has remained relatively steady, at about 7 percent (Figure 3.3-3). However, rural communities have limited employment opportunities and have unemployment rates that are generally higher than the statewide average.

Figure 3.3-3: Recent Trends in Unemployment Rate



Source: ADOL 2018

With regard to the economies of the portions of Alaska potentially affected by development of the project, there are three distinct profiles. The area on the eastern side of Cook Inlet, Anchorage and the Kenai Peninsula Borough (KPB), generally have a more diverse economy, although there is still some seasonality in employment. The lower area of the Dillingham Census Area and coastal portions of the Lake and Peninsula Borough (LPB) are dominated by the commercial salmon fishery and the economic activity it generates. Communities around Iliamna Lake and upriver in the Dillingham Census Area have less participation in commercial salmon fishing; they are more typical of small roadless rural Alaskan communities, with economic activities limited to local government, Alaska Native organizations, and some support of commercial recreation and tourism. Refer to Section 3.6, Commercial and Recreational Fisheries, for more information.

Southern Kenai Peninsula Borough

In relation to more rural Alaskan communities, the Kenai Peninsula Borough's economy is more diverse, with a mix of emerging and established industries. The top five performing industries by total employment are health care and social services, local government, retail trade, accommodations and food services, and commercial fishing; while the top two industry categories by employee wages are utilities and oil, gas, and mining. In 2016, Kenai Peninsula workers earned over \$3 billion in wages (KPB 2017).

While the oil and gas sector provides significant employment and revenue to the borough, non-oil and gas mining only represents a small portion of the economic activity, accounting for less than 0.2 percent of the Kenai Peninsula's total private employment and wages (KPB 2017). Seasonal fluctuations in employment affect many of the other industry sectors, including tourism and hospitality, commercial fishing, and construction.

Lake and Peninsula Borough

As noted in the LPB Comprehensive Plan Update (LPB 2012), there are three primary components of the economy:

1. **Commercial Fishing.** Portions of both the Lake and Peninsula Borough are part of the world-renown Bristol Bay fishery. Residents living in the region participate in the fishery to a varying degree through commercial fishing, as well as through support of commercial and sport fishing. Commercial fisheries permit holders residing in the Lake and Peninsula Borough have steadily decreased over the last 30 years as permits have transferred out of region, although the value of permits and fish caught has held steady. Commercial fishing continues to be a major way of living for some residents in the region, and constitutes over half of all self-employed workers. See Section 3.6, Commercial and Recreation Fisheries, for more information. Communities around the proposed mine site rely less on commercial fishing as an industry than those closer to Bristol Bay.
2. **Local Government.** A large percentage of employment in the Lake and Peninsula Borough is in local government, with the majority employed by the school districts and tribal governments. These jobs are important to the community because they tend to have higher pay and offer year-round employment.
3. **Other Industries and Small Businesses.** After accounting for the primary economic sectors (commercial fishing and local government), residents of the region are engaged in a range of business activities, including transportation and utilities, state government, health services, tourism, and other small businesses, although the employment opportunities in smaller communities are limited. Although the region supports a multi-million dollar sport fishing and hunting industry, a large majority of the earnings do not go to local residents. In addition, most tourism is seasonal, and the opportunities conflict with other economic sectors and activities, such as commercial fishing, construction, and subsistence.

Many communities have been exploring small business opportunities for residents to increase local employment. However, most communities in the region have too small of a population to support a single service provider, so new businesses will often have to plan for a regional market to be successful. As indicated previously, the region also engages heavily in subsistence activities.

Dillingham Census Area

Dillingham Census Area's economic base is highly seasonal, and predominantly driven by the harvest and processing of Bristol Bay sockeye salmon, which has been a dominant influence on the local culture and economy for over 130 years (City of Dillingham 2010). The region has three onshore salmon processing facilities and several floating facilities/processors (SWAMC 2018). For more information on commercial fishing employment and income, see Section 3.6, Commercial and Recreational Fisheries. In general, wild resources continue to be the economic engine of the area, whether for commercial, subsistence, or recreational purposes. Many communities in the region are heavily involved in subsistence activities (City of Dillingham 2010).

Local government provides employment in regional communities such as Dillingham, King Salmon, and Naknek, and in smaller communities. The City of Dillingham is the largest community in the Dillingham Census Area and is the center of economic, transportation, government, and public services. King Salmon also benefits from federal employment associated with the National Park Service (NPS), US Fish and Wildlife Service (USFWS), and

other agencies. Commercial fishing, fish processing, cold storage, and support of the fishing industry are the primary sectors that sustain the economy of the area (SWAMC 2018).

3.3.1.2 Overview of the Cost of Living

In general, the cost of living in Alaska is higher than most areas of the US. In 2017, Alaska was ranked as the third most expensive state based on the costs of living in the four largest Alaskan cities (i.e., Anchorage, Juneau, Fairbanks, and Kodiak), which were all well above the national average. Although fuel costs have been decreasing in recent years, health care premiums increased 29 percent from 2016 to 2017. Alaska has the highest health care premiums (purchased on the open market) of any state (ADOL 2017a).

Although taxes tend to be lower in Alaska, the cost of transportation, food, energy, and fuel is higher. Transportation is one of the main reasons the costs of living are higher in Alaska (ADOL 2017a, 2008), which is compounded in rural areas. Getting food, fuel, and other goods to Alaska is a little more expensive than other parts of the US, and then the items need to be transported over a large geographic area to small population clusters. In some communities, staple goods, such as food and fuel, cost over twice as much as they do in Anchorage because the items need to be transported by barge or air. Costs were found to be highest in communities served by air and seasonally by barge. In the LPB, the cost of fuel has been historically higher in Iliamna Lake communities, and population decline is partly driven by an increasingly high cost of living in remote communities (LPB 2012). In Igiugig, for example, the 2018 fuel price per gallon was \$6.75 for home heating oil, \$7.76 for gasoline, and \$10.17 for propane (McDowell 2018a).

Although the cost of living can be high in rural communities, subsistence hunting and fishing supplements the needs of families and communities. However, supporting subsistence hunting and fishing activities can be expensive in rural communities because of the higher cost of supplies, such as fuel, ammunition, and vehicles, and employment provides needed income to support subsistence.

3.3.1.3 Overview of the Regional Infrastructure

The following sections provide a brief overview of the infrastructure in Alaska, with a focus on the region surrounding the potential mine site.

Education

Alaska is composed of 54 school districts (ADEED 2018), which serve about 143,000 students. For fiscal year 2015, the National Center of Education Statistics reported that Alaska has one of the highest expenditures per pupil (NCES 2018). Alaska spent \$2.9 billion on education, with a per pupil expenditure of \$20,191, 76 percent higher than the national average of \$11,454.

School closures are a serious challenge faced by rural Alaska communities around the state. Alaska state law (Alaska Statute [AS] 14.17.450) cuts off state funds for schools with nine or fewer students. Falling population can create a challenging cycle, in which declines in the number of residents lead to school closures, declining services, and fewer economic opportunities; these trends can lead to further population declines. Because schools are often the largest electricity customer, the closing of a school leaves fewer customers to support the electricity network, and can lead to higher energy prices for the residents of the community (LPB 2012).

Opportunities for higher education in Alaska exist through a number of colleges and universities throughout the state, including five 2-year community colleges, three primary branches of the University of Alaska, and four private institutions. In addition, through the Western

Undergraduate Exchange, residents of Alaska can attend colleges and universities at participating schools in 16 states and US territories, and pay no more than 150 percent of the in-state tuition.

Lake and Peninsula Borough. The LPB School District has 13 public schools, from Port Alsworth in the north to Perryville in the south. However, a number of Lake and Peninsula Borough communities are facing population loss and potential school closings; the Dena'ina school in Pedro Bay closed in November 2010 (LPB 2012). Although communities have local road systems, only Iliamna and Newhalen (and Nondalton, seasonally) are connected by road and have a common school, which makes it impossible to combine schools in other communities facing population decline.

Bristol Bay Borough. The Bristol Bay Borough School District is composed of the elementary and middle/high school in Naknek (total enrollment 118). Although communities have local road systems, only King Salmon and Naknek are connected by road and have a common school.

Dillingham Census Area. The Southwest Region School District has seven public schools with a total enrollment of 705 students (SRSD 2009), from Manokotak in the south to Koliganek in the north. The Dillingham City School District had a total enrollment of 473 in 2016/2017. Although communities have local road systems, only Aleknagik and Dillingham are connected by road, but each have their own schools.

Transportation

Most Alaskan communities have local roads, but approximately 82 percent of these communities have no connection to the contiguous road system or interregional roads (ADOT&PF 2018a). With small populations in remote, scattered locations, the per-capita costs of building and maintaining transportation infrastructure is high, and building new roads to connect the communities is unlikely. Alaska will continue to rely on a combination of air, road, and marine transportation to serve the population. Brief descriptions of these modes of transportation are provided below. See Section 3.12, Transportation and Navigation, for more information on the existing transportation systems.

Air

Large portions of Alaska are only accessible by air or water. These communities depend on aviation for access to non-subsistence foods, mail, and health care. The people of Alaska are eight times more likely to use aviation as transportation than people in the rest of the US (ADOT&PF 2018a). Aviation in Alaska is a huge economic engine, contributing approximately \$3.5 billion annually to the state's economy.

Most communities in the region rely on air transportation for movement of people and goods into and within the region. Iliamna Airport is the primary air transportation hub for the region near the mine site, and Dillingham is a hub for the lower river communities; Port Alsworth and King Salmon are also important hubs for the region. Scheduled air service provides transportation of passengers to the regional hubs, while air taxis and charter service transport passengers from the hubs to local communities. For most of the year, air cargo is the only means of transporting goods to many of the communities in the area, including heating fuel (McDowell Group et al. 2011a). In addition to serving local communities, small aircraft provide primary transportation associated with recreation and tourism activities, including sport hunting and fishing, wildlife viewing, and visitation to federal and state parks and reserves.

Road

The ADOT&PF maintains 5,609 centerline miles of highways, 3,737 miles of which are paved. The highway system provides connectivity for freight and travel from the lower 48 states through Canada into Alaska; and from Alaska's economic hub, Anchorage, to those communities that are connected to the road system, which includes the southern Kenai Peninsula portion of the area affected by the Pebble Project. These hub towns and cities are the main population centers spread across the state, where goods are typically shipped to reach more remote communities by road, marine, and air transportation (ASCE 2018). However, the Bristol Bay region and the project area on the western side of Cook Inlet are not connected to the southcentral Alaska road system.

Surface transportation between villages is primarily done on trails on snowmachines or all-terrain vehicles, and most villages have local road systems. Village and rural roadways consist mainly of unpaved roads, walkways, trails, and boardwalks in areas outside of Alaska's hub towns. Local roadways in rural areas are typically maintained by local village governments and regional native corporations. The roads, walkways, trails, and boardwalks are of importance to community members because they serve as routes to health care facilities, schools, airports, and in some cases, subsistence hunting and fishing locations (ASCE 2018).

In the immediate study area, the Iliamna/Newhalen area has the most extensive local road system in the areas near the mine site. King Salmon/Naknek and Dillingham have a relatively extensive road network for the lower river communities. Elsewhere, road systems and vehicle use are limited (McDowell Group et al. 2011a).

In addition to community-based road systems, the Williamsport-Pile Bay Road provides access between Cook Inlet and Bristol Bay, via a 15-mile road to Iliamna Lake and down the Kvichak River. This road allows summer season transportation of fishing vessels bound for Bristol Bay commercial fisheries, as well as some goods and supply transport to lake and river communities. The road is owned and maintained by the State of Alaska.

Section 3.12, Transportation and Navigation, includes more information on local road systems.

Marine

Ports and harbors across Alaska provide services that support critical economic activities. These facilities play a vital role in the communities they serve by providing bulk goods and services and local employment opportunities; promoting economic diversification and transshipping Alaska products such as seafood; and supporting cultural and subsistence lifestyles. In 2015, 40.8 million tons of goods were moved out of the state and 3.4 million tons of goods into the state via marine transport. Ports and harbors are also critical to the Alaska commercial fishing industry, which supports six of the top ten fishing ports by volume in the US (ASCE 2018).

Many of the communities in the region can be seasonally accessed via water to deliver cargo, such as fuel and other objects too heavy or bulky to ship by air. Many of the regional communities are on Iliamna Lake, which can be accessed from the Kvichak River and the Williamsport-Pile Bay Road. However, Kvichak River access has been hindered due to low water levels and shoaling (McDowell Group et al. 2011a).

In addition to commercial marine traffic, personal watercraft, particularly skiffs, are a major means of travel to subsistence activities and travel between communities during the open water season on lakes and rivers. During the period when ice allows safe travel, snowmachines provide similar access. Refer to Section 3.12, Transportation and Navigation, for more information.

Health Services

Public health services are available in communities in the EIS analysis area, but may be limited in the smaller communities. In general, healthcare services include only small clinics operated by regional providers, including Bristol Bay Area Health Corporation and the Anchorage-based Southcentral Foundation. Because of easier access to Anchorage, many of the residents in the Iliamna and Lake Clark communities receive hospital care in Anchorage. Many residents in the Bristol Bay area receive hospital care in Dillingham (McDowell Group et al. 2011a).

The Bristol Bay Area Health Corporation is a regional provider that operates a hospital, sub-regional clinics, and village clinics in the Bristol Bay region. Health clinics are also supported by the boroughs. In addition, state and federal agencies have special responsibilities to support health care for Alaska Natives (McDowell Group et al. 2011a). See Section 3.10, Health and Safety, for additional information on health services.

Water, Sewer, and Solid Waste

Alaska's water and wastewater systems can be generally divided into two categories: municipal, and rural. Most municipal systems that serve more densely populated areas have long-term operations, maintenance staff, and funding. The state has over 280 rural communities, 31 of which have no centralized water or wastewater system. For those rural communities that have water and wastewater systems, operating and maintaining systems are challenged by the high cost of energy, lack of population to support higher-than-average maintenance costs, and a shortage of experienced operators to maintain the systems (ASCE 2018).

Many of the unincorporated communities have water and/or sewer systems funded through the Alaska Native Tribal Health Consortium and the State's Village Safe Water Program. The Alaska Department of Environmental Conservation (ADEC) administers the Village Safe Water Program, which is working with rural communities to develop sustainable sanitation facilities. Many of the water and sewer improvements depend on federal funding (KPB 2017).

In rural Alaska, community water and sewer systems are primarily composed of four types: washeterias and central watering points; individual wells and septic systems; water and sewer truck or trailer haul systems; and piped water and sewer systems. There are no unserved communities in the study area (ADEC 2018a).

In the EIS analysis area, water systems are present in:

- Igiugig
- Iliamna
- Kokhanok
- Levelock
- Nondalton
- Newhalen
- Port Alsworth

Limited road access makes dealing with solid waste a challenge. Most waste must be disposed of in the community, unless it can be shipped out, which is expensive. Many rural communities have local facilities such as landfills, incinerators, or burn boxes to handle solid waste. The ADEC supports many landfill facilities (ASCE 2019).

3.3.2 Potentially Affected Communities

Construction and operation of the proposed mine would have impacts to local and regional socioeconomic conditions. This section provides information about the current socioeconomic conditions of potentially affected communities. Potentially affected communities were identified based on potential impacts from any of the major components of the proposed project. The following subsections describe the general social and economic characteristics of the potentially affected communities. For additional information on each community, see McDowell Group 2018a.

3.3.2.1 Population

Table 3.3-1 presents population characteristics of the affected communities. Many of the potentially affected communities in the LPB (where the mine would be located) are relatively small. Although some communities have seen an increase in population from 2010 to 2018, others have decreased. Refer to Section 3.4, Environmental Justice, for the racial characteristics of the potentially affected communities.

Table 3.3-2 shows the population projections through 2045 at the borough and state level. The population of the LPB through 2045 is not projected to increase by much, whereas the population for Alaska is projected to increase about 22 percent by 2045. The Dillingham Census Area would see a modest increase, whereas the Bristol Bay Borough is projected to decrease by 34 percent.

Table 3.3-2: Population Projections for EIS Analysis Area

Area	2018 ¹	2025 ²	2035 ²	2045 ²
Lake and Peninsula Borough	1,663	1,708	1,720	1,751
Dillingham Census Area	5,021	5,289	5,556	5,984
Kenai Peninsula Borough	58,471	62,845	66,271	68,423
Bristol Bay Borough	879	790	675	581
Anchorage	295,365	318,629	330,821	339,171
State of Alaska	736,239	802,352	854,104	899,825

Source: ¹ADOL 2019; ²ADOL 2016

3.3.2.2 Economy and Income

The median household income and unemployment vary across the affected communities (Table 3.3-3). Iliamna had the highest median household income of \$93,750 of the communities reviewed, while the community of Levelock had the lowest, at less than \$25,000 (note that there is a substantial margin of error in some cases). In comparison, the median household income for Alaska is approximately \$76,000, and \$58,000 for the US. The unemployment rate also varied across the affected communities, from a low of zero percent in some communities, to a high of almost 31 percent in Kokhanok. In addition to household income, subsistence contributes to the mixed-cash economy of the region; the importance of subsistence as it relates to income is discussed in Section 3.9, Subsistence.

Table 3.3-3: Median Household Income and Unemployment Rate of Affected Communities

Area	Median Household Income (margin of error)	Unemployment Rate (margin of error)
Lake and Peninsula Borough	\$45,208 (\$3,882)	13.2% (2.6%)
Igiugig	\$48,750 (\$29,077)	0.0% (46.4%)
Iliamna	\$93,750 (\$28,620)	6.1% (6.0%)
Kokhanok	\$41,250 (\$24,297)	30.8% (7.5%)
Levelock	\$25,000 (\$17,803)	16.3% (8.5%)
Newhalen	\$36,250 (\$18,127)	8.0% (7.2%)
Nondalton	\$38,750 (\$11,951)	25.0% (11.9%)
Pedro Bay	\$53,750 (\$8,466)	18.2% (21.2%)
Port Alsworth	\$86,667 (\$12,567)	1.3% (3.2%)
Dillingham Census Area	\$58,708 (\$5,073)	11.4% (1.7%)
Dillingham	\$75,764 (\$8,256)	5.1% (1.7%)
Ekwok	\$28,750 (\$6,988)	39.5% (20.7%)
Koliganek	\$53,750 (\$20,943)	11.1% (9.6%)
New Stuyahok	\$43,750 (\$8,768)	23.8% (6.0%)
Kenai Peninsula Borough	\$65,279 (\$2,335)	8.6% (1.0%)
Bristol Bay Borough	\$79,500 (\$10,833)	6.8% (3.0%)
Anchorage	\$82,271 (\$1,398)	5.8% (0.4%)
Alaska	\$76,114 (\$979)	7.7% (0.2%)

Note:

Because of the small sample size in smaller communities, the values reported by the US Census Bureau may be misleading (i.e., may show large differences between communities that may not exist). Therefore, margin-of-error values are presented to show the potential range of the reported values.

Source: USCB 2018

In many of the communities, the employment of local residents in the potentially affected communities relies heavily on the local government and education and health services industry sectors. Trade/transportation/utilities (26 percent in Port Alsworth) and professional/business services (17 percent in both Iliamna and Newhalen) can also be a major employer in some communities. The local government industry sector accounted for the greatest percentage of employees for all of the communities in the LPB, which is where the mine would be located. State and local government jobs are particularly important to these small communities, because they are often year-round and relatively high paying. Although federal government employment is not included in the table below, it generally represents a small percentage of the average monthly employment (i.e., less than 5 percent in the LPB, and less than 2 percent in the Dillingham Census Area).

The commercial salmon fishery provides a large number of seasonal employment opportunities in the harvesting and processing sectors. However, these opportunities vary with location in the area potentially affected by the Pebble Project, with more opportunities available in the Dillingham and Naknek areas compared to communities up the Kvichak River and on Iliamna Lake. In addition, with the outmigration of commercial salmon permits and the nature of the processing industry, some of these opportunities are filled by residents from outside the region

and state. Details on commercial fishing are discussed in Section 3.6, Commercial and Recreational Fishing.

As stated previously, a large proportion of households in the EIS analysis area participate in subsistence activities and depend on the wild food resources procured by hunting and fishing. Details for each community are included in Section 3.9, Subsistence.

3.3.2.3 Housing

In the EIS analysis area, the housing stock consists primarily of single-family detached homes, which account for over 90 percent of the housing units (USCB 2018). Of the occupied housing units, approximately two-thirds of the units are owner-occupied, while the rest are rental properties. It should be noted that throughout the EIS analysis area, many of the communities show a high percentage of vacant housing units, with some communities over 50 percent. This is likely due to a number of factors, including counting a large number of seasonal-use dwellings (e.g., camps/cabins), declining populations, and housing units that are in a state of disrepair (LPB 2012). Table 3.3-4 shows total and occupied housing units in the EIS analysis area.

Table 3.3-4: Housing Units

Area	Total Housing Units (margin of error)	Occupied Housing Units (margin of error)
Lake and Peninsula Borough	1,406 (104)	408 (104)
Igiugig	20 (8)	14 (7)
Iliamna	60 (9)	20 (10)
Kokhanok	59 (15)	43 (14)
Levelock	45 (14)	34 (11)
Newhalen	44 (12)	32 (11)
Nondalton	90 (14)	43 (14)
Pedro Bay	29 (6)	8 (6)
Port Alsworth	71 (14)	38 (14)
Dillingham Census Area	2,444 (59)	1,405 (77)
Dillingham	1,039 (69)	751 (78)
Ekwok	51 (13)	28 (11)
Koliganek	61 (10)	51 (11)
New Stuyahok	140 (21)	112 (20)
Kenai Peninsula Borough	31,016 (135)	21,779 (421)
Bristol Bay Borough	941 (40)	358 (37)
Anchorage	115,748 (203)	106,012 (864)
Alaska	313,937 (249)	252,536 (1,271)

Note:

Because of the small sample size in smaller communities, the values reported by the US Census Bureau may be misleading (i.e., may show large differences between communities that may not exist). Therefore, margin-of-error values are presented to show the potential range of the reported values.

Source: USCB 2018

3.3.2.4 Education

Education is provided through state and local funding, through school districts in existing borough governments or areas outside those boroughs. In general, communities in the EIS analysis area have a high school graduation rate above 80 percent, and those with bachelor's degrees or higher ranges from 10 to 25 percent (Table 3.3-5). The graduation rates and number of those holding a bachelor's degree or higher, are higher in more densely populated areas, such as Anchorage and KPB. In comparison, across the US, the high school graduation rate is approximately 87 percent, and about 30 percent have a bachelor's degree or higher. As indicated previously, declining populations threaten the ability to keep schools open in some communities, particularly in the LPB.

Table 3.3-5: Education Characteristics of Potentially Affected Communities

Area	School Enrollment Pre-K – 12 ¹	High School Graduate or Higher ²	Bachelor's Degree or Higher ²
Lake and Peninsula Borough	343	88%	16%
Igiugig	19	86%	21%
Iliamna	Included with Newhalen	97%	19%
Kokhanok	34	81%	8%
Levelock	22	83%	2%
Newhalen	67	90%	17%
Nondalton	26	85%	11%
Pedro Bay	0	100%	11%
Port Alsworth	62	99%	49%
Dillingham Census Area	1,092	86%	17%
Dillingham	483	91%	22%
Ekwok	15	69%	0%
Koliganek	56	83%	20%
New Stuyahok	141	78%	3%
Kenai Peninsula Borough	9,027	93%	24%
Bristol Bay Borough	128	93%	20%
Anchorage	47,624	93%	35%
Alaska	133,381	92%	29%

Sources: ¹ADEED 2018; ²USCB 2018

This page intentionally left blank.