Juneau Access Improvements Project
Draft Supplemental Environmental Impact Statement

Appendix EE
Socioeconomic Effects Technical Report

Prepared for:

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& Public Facilities
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Executive Summary

This report is a revised assessment of the 2004 *Socioeconomic Effects Technical Report* documenting the potential socioeconomic effects of improved access to Juneau. It includes detailed socioeconomic baseline data for Juneau, Haines, and Skagway.

The socioeconomic effects of the following eight access improvement alternatives are considered:

- Alternative 1 – No Action
- Alternative 1B – Enhanced Service with Existing Alaska Marine Highway System (AMHS) Assets
- Alternative 2B – East Lynn Canal Highway to Katzehin, Shuttles to Haines and Skagway
- Alternative 3 – West Lynn Canal Highway, Shuttle ferry from Sawmill Cove to William Henry Bay
- Alternative 4A – Fast Vehicle Ferry (FVF) Shuttle Service from Auke Bay
- Alternative 4B – FVF Shuttle Service from Berners Bay
- Alternative 4C – Conventional Monohull Shuttle Service from Auke Bay
- Alternative 4D – Conventional Monohull Shuttle Service from Berners Bay

The results of this analysis are based on traffic projections presented in the 2013 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project SEIS). Traffic on the JAI Project alternatives ranges from 90 average annual average daily traffic (ADT) in the No Action Alternative to 835 annual ADT in the East Lynn Canal Highway Alternative. Detailed traffic estimates for each alternative are provided in that report.

Key findings from the socioeconomic effects analysis are summarized below.

ES 1 Effects Common to All Alternatives

Transportation: Improved access in the Lynn Canal corridor would facilitate the movement of goods and people through and to the northern Southeast region. This would create closer links among the economies of Juneau, Haines, Skagway, and Whitehorse. Residents of Haines and Skagway would have better access to Juneau's retail and service sectors. Residents of Juneau would have better access to the recreational opportunities available in Haines, Skagway, and other destinations on the Alaska/Canada highway systems.

Air taxi operations: Improved access in Lynn Canal is likely to have a negative impact on local air taxi operators. This impact would vary according to alternative, with highway alternatives potentially resulting in substantial negative impacts, and the improved ferry service potentially resulting in moderate negative impacts.

Economic development: Improved access would enhance Haines' reputation as a retirement community through better access to Juneau's retail and service sectors, particularly healthcare

services. To the extent that this occurs, demand for property in Haines would increase. Because of land availability in Haines, climate, and other reasons, additional Juneau residents may seek seasonal or year-round homes in Haines.

Local government expenditures: Local governments would be affected by improved access in several ways. These include increased demand for public services in remote areas of the Juneau and Haines boroughs as well as outlying Skagway areas, and increased demand for public utilities associated with increased traffic and population growth. Expenditures in these areas would be offset by increases in sales tax revenues from travel-related spending and increases in property tax revenues. Other tax revenues, such as bed taxes, would also increase.

Healthcare: Improved access would provide residents of Haines and Skagway better access to Juneau's well-developed healthcare sector. Improved access would make it somewhat easier and faster to transport patients—either on an emergency or scheduled basis—to Juneau from Haines or Skagway.

Education: Improved access, whether by ferry or highway, benefits educational programs and organizations in the region. Improved access would allow more frequent, more convenient, and less costly exchanges between school districts. Lower-cost transportation between Juneau and Haines and Skagway would reduce the cost of professional services exchanged between the three school districts. It would also make centralized training and conferences somewhat less expensive. Sports programs and events would be enhanced, both with better athlete and audience participation, if cheaper, more reliable transportation services are offered.

Public safety: As with any rural Alaska road system, emergency situations occurring far from downtown areas would create response challenges for fire, emergency medical service, and police departments. Personnel and equipment would be pulled away from normal duties, possibly for extended periods. The agencies with the most resources available – State Troopers, Juneau Police Department, and Juneau Fire Department – say they are already operating at minimal staffing levels given the extent of their current responsibilities and service areas.

Quality of life: How improved access would affect quality of life depends on individual perspectives. Generally, however, residents consider improved access important. More than three-quarters of Juneau residents feel that improved access to their community is important. In 2003, 32 percent of Juneau residents surveyed said improved transportation is important, and 46 percent said it is very important. Nearly three-quarters of those surveyed said they would travel to or through Haines or Skagway more often if it were more convenient, with recreation being the key reason for such travel.

When surveyed in 2003, Haines residents said improved access to Juneau is very important (65 percent) or important (22 percent). Most Skagway residents also said that improved access to Juneau is very important (59 percent) or important (24 percent).

ES 1.1 Alternative 1 – No Action

According to the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), the No Action Alternative is anticipated to generate 90 annual ADT in 2020

and 2050. The No Action Alternative is expected to have negligible socioeconomic effects on Juneau and Skagway. Haines is anticipated to experience minor socioeconomic effects associated with becoming a homeport for one of the Day Boat Alaska Class Ferries. With the No Action Alternative, most of the latent demand for transportation infrastructure in Lynn Canal would remain unmet.

ES 1.2 Alternative 1B – Enhanced Service with Existing AMHS Assets

According to the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), Alternative 1B would generate a minor increase (25 annual ADT) in traffic above the No Action Alternative in 2020 and 2050. As a result, Alternative 1B is anticipated to have negligible socioeconomic effects on Juneau, Haines, and Skagway. With Alternative 1B, most of the latent demand for transportation infrastructure in Lynn Canal would remain unmet.

ES 1.3 Alternative 2B – East Lynn Canal Highway to Katzehin, with Shuttles to Haines and Skagway

ES 1.3.1 General Effects

Transportation: The East Lynn Canal Highway would improve Lynn Canal transportation and would generate traffic in Lynn Canal of between 835 vehicles per day (annual average) in 2020, more than five times more traffic than would occur with the No Action Alternative.

The handling and ferry costs associated with barging freight to Juneau, then trucking to Haines or Skagway, would limit transshipment in Juneau of freight moving from Seattle to Haines or Skagway.

Construction employment: Construction costs for the East Lynn Canal Highway are estimated at $518.0 million. Direct employment related to highway and ferry terminal construction would be approximately 298 jobs over a 6-year construction period.

Air taxi operations: It is estimated that the demand for air taxi service in Lynn Canal could decline, though for any individual operator the impact might be higher or lower, depending on the markets they serve.

Mining activity: Development of the East Lynn Canal Highway could affect operation of Coeur Alaska, Inc.'s Kensington Mine. This includes reduced cost of worker and supply transport between the mine and Juneau, improved opportunity for Haines and Skagway residents to participate in the mine workforce, and increased City and Borough of Juneau (CBJ) property tax revenues. There could also be increased security and public safety concerns at the mine as a result of greater public access.

ES 1.3.2 Juneau

Transportation: Barges will remain the mode by which most freight is shipped to Juneau. However, an improved highway connection would provide minor to substantial benefits to the fishing industry or other manufacturers producing time-sensitive goods. Shipment of time-

sensitive products out of Juneau would create lower-cost back-haul opportunities. Over the long term, Juneau would experience increased use of overland trucking of basic goods into Juneau, as more individual businesses consider the scheduling flexibility trucking provides. The cost and inconvenience associated with a ferry would be constraints on truck use.

The East Lynn Canal Highway would have minor effects on waterborne freight movement in Lynn Canal. Barge service to Juneau, Haines, and Skagway would be unaffected. The cost associated with one or two ferry links (two if the freight is destined for Skagway) would constrain the use of trucks rather than barges. The handling and ferry costs associated with barging freight to Juneau, then trucking to Haines or Skagway, would prevent any transshipment in Juneau of freight moving from Seattle to Haines or Skagway.

Seafood industry: The East Lynn Canal Highway would not affect the seafood processing industry. The highway and ferry link could be used to ship some of the fresh fish that is currently shipped by air (NEI, 2013); however, ferry links would result in scheduling uncertainty, constraining the time-sensitive activity of trucking of seafood, and could make transporting seafood more costly. Continued reliance on air shipment would likely be preferred.

Visitor industry: The East Lynn Canal Highway would bring approximately 164,500 new visitors (including non-Alaskans, Haines and Skagway residents, and others) to Juneau annually by 2020. This number would increase over time, as markets and travelers adjust to the improved access.

Economic and population growth: Overall, the East Lynn Canal Highway would generate an estimated 130 new jobs in the Juneau economy, resulting in a population increase of approximately 195 residents in 2020. A population increase in Juneau of approximately 195 residents would represent an overall increase of approximately 0.6 percent.

Local tax revenues: Additional visitor spending in Juneau would total approximately $12.7 million annually in 2020, generating approximately $630,000 in additional sales tax revenues. The CBJ could also expect some increase in property tax revenues and bed tax revenues.

Public utilities and services: The East Lynn Canal Highway is not anticipated to have measurable effects on Juneau's public utilities, including water supply, wastewater treatment, and solid waste disposal. However, increased traffic would place additional demands on police and emergency medical services (EMS) in Juneau.

ES 1.3.3 Haines

Transportation: The East Lynn Canal Highway would not result in a substantial change in barge service to Haines. Freight that is now shipped to Haines on the ferry would be trucked from Juneau, at a lower cost than is now possible with ferry service. Demand for air transportation services to and from Haines would decline.

Visitor industry: The East Lynn Canal Highway would draw more visitors to northern Southeast Alaska than is now the case, increase access to Haines for Juneau's independent visitors, increase access to Haines for Skagway's independent visitors, increase access to Haines

for Juneau residents, and improve access to Haines for Whitehorse residents. New visitor traffic to Haines is expected to be approximately 89,400 annually in 2020. This does not include Haines resident traffic or current baseline traffic (the volume of traffic that already travels to or through Haines).

The impact of the East Lynn Canal Highway would be dependent on the frequency of ferry service between Katzehin and Haines or Skagway and Haines, the cost of that ferry service, and on how aggressively the community markets itself.

Overall, traffic to Haines would increase, primarily as a result of increased Juneau resident travel, but also Whitehorse resident travel, and other visitor (tourist) travel. The economic impact of this increase in traffic would depend on travelers' length of stay. A key factor regarding length of stay after construction of the East Lynn Canal Highway would be the degree to which Haines develops and promotes local assets and attractions. Additional investment in marketing Haines as a destination would attract more travelers.

Seafood industry: The East Lynn Canal Highway could shift fishermen's delivery to the processors from Haines to Juneau, but this is anticipated to be negligible.

Support sector: Haines support sector industries would be affected by the East Lynn Canal Highway. The East Lynn Canal Highway would result in increased traffic to Haines and an increase in visitor spending. Some of this spending would be offset by increased Haines resident spending in Juneau. Because goods and services are often less expensive in Juneau and because Juneau has a wider selection of goods and services, a high level of economic "leakage" already occurs. Improved access to Juneau would result in more leakage from the Haines-area economy as more local residents take advantage of Juneau's better-developed retail and service sectors. This also means improved access would play a role in reducing the cost of living in Haines.

Certain Haines businesses would benefit by improved access, while others might see a decline in business. Businesses that serve the visitor market, such as motels and hotels, restaurants, gift shops, convenience stores, and gas stations, would see an increase in business as a result of an overall increase in traffic. Stores that already compete with Juneau retailers, such as grocery, clothing, hardware, and lumber supply stores, are likely to see some decline in business as Haines residents take advantage of better access to Juneau.

In terms of total spending in Haines, the East Lynn Canal Highway would result in total additional visitor spending in Haines of approximately $6.9 million annually in 2020 that would generate (assuming all of the spending is taxable) $380,000 in additional sales tax revenues.

Economic growth: The East Lynn Canal Highway would generate minor population changes in the community (overall increase of approximately 3 percent). Contingent upon the availability of regular, frequent, and low-cost ferry service between Haines and Katzehin or Skagway, the community could expect an increase in traffic overall. To the extent that this increased traffic translates into additional spending in Haines, economic and population growth would occur. The employment effects of the East Lynn Canal Highway would be an estimated 60 new jobs in the

Haines economy. These additional jobs would result in a population increase of approximately 90 residents.

Public utilities and services: Solid waste, hazardous waste, and electric utilities would not be affected in the Haines Borough by the development of the East Lynn Canal Highway. The East Lynn Canal Highway could generate some population growth over the long term, and therefore would contribute to the need for expansion of water supply and wastewater treatment facilities.

ES 1.3.4 Skagway

Transportation: With the exception of freight currently moved from Juneau to Skagway on the ferry, Skagway is not expected to see any substantial change in waterborne freight service with the East Lynn Canal Highway. Freight that now moves from Juneau to Skagway on the ferry from Auke Bay would instead be trucked via the East Lynn Canal Highway and the Katzehin ferry.

Cruise ship traffic: The East Lynn Canal Highway would not alter cruise lines' decisions to place ships in Skagway. Port of call decisions are based on a combination of factors, including the availability of berthing space, appeal to passengers, and the overall capacity and profitability of tour offerings. Skagway is one of the most profitable ports in Alaska for the cruise lines. Passenger satisfaction ratings are very strong for Skagway. Eliminating Skagway from cruise itineraries would have negative financial impacts and would detract from passengers' overall experience.

Ground transportation providers for all large ships are emphatic that ground tours to Skagway from Juneau are not feasible due to limitations regarding tour capacity, pricing, and timing. While a flight and bus tour combination might reduce the overall transportation time, this option is not practical due to the high cost of the flight, capacity limitations, and potential for weather cancellations.

Independent visitors: Skagway would benefit from increased independent visitor traffic with the East Lynn Canal Highway. New visitor traffic to Skagway with the East Lynn Canal Highway is expected to total approximately 105,400 new visitors in 2020. This does not include Skagway resident traffic or current baseline traffic (the volume of traffic that already travels to or through Skagway).

Economic and population growth: The East Lynn Canal Highway would generate an estimated 109 new jobs (85 jobs from increased visitor related traffic and 24 jobs from one Day Boat ACF being based in Skagway) in the Skagway economy in 2020, resulting in a population increase of approximately 163 residents (128 residents associated with increased visitor related traffic and 35 residents associated with the Day Boat ACF crew and their families). A population increase in Skagway of approximately 163 residents would represent an overall increase of 16 percent, compared to the year-round average.

The overall effect of the East Lynn Canal Highway on Skagway's retail and service sectors would be substantial, with new visitor, including Juneau residents, spending of approximately $8.1 million in 2020. A potential decline in local spending by Skagway households would be

more than offset by increased spending by non-Alaska visitors and Juneau households visiting Skagway.

Local tax revenues: Skagway would experience an increase in sales and bed tax revenues associated with increased visitor spending. An $8.1 million estimated initial annual increase in visitor spending would generate $320,000 in additional sales tax revenues annually in 2020. Additional bed tax revenues would also be generated.

Public utilities: Skagway may experience the need for additional water, solid waste, and sewer treatment capacity with the East Lynn Canal Highway, as a result of increased visitor traffic and local population growth.

Public safety: Emergency response demands from additional highway traffic would impact the Skagway Volunteer Fire Department. The department's size and reliance on volunteers makes responding to multiple emergencies very challenging. Continued growth in demands on the department could require more paid staff.

ES 1.4 Alternative 3 – West Lynn Canal Highway

ES 1.4.1 General Effects

Construction employment: Construction costs for the West Lynn Canal Highway would be $437.2 million. Employment related to highway and ferry terminal construction would be 252 jobs over a 6-year construction period.

Transportation: The West Lynn Canal Highway would improve Lynn Canal transportation and would generate traffic in Lynn Canal of about 655 annual ADT in 2020.

The West Lynn Canal Highway would have minor effects on waterborne freight movement in Lynn Canal. Barge service to Juneau, Haines, and Skagway would be unaffected. The cost associated with one or two ferry links (two if the freight is destined for Skagway) would constrain the use of trucks rather than barges. The handling and ferry costs associated with barging freight to Juneau, then trucking to Haines or Skagway, would prevent any transshipment in Juneau of freight moving from Seattle to Haines or Skagway.

Because the West Lynn Canal Highway would provide for less expensive shipment of goods from Juneau to Haines than the No Action alternative, freight costs would likely be lower. Lower freight costs between Juneau and Haines would result in savings to retailers, consumers, or both.

Air taxi operations: It is estimated that the demand for air taxi service in Lynn Canal would be reduced, though for any individual operator the impact might be higher or lower, depending on the particular markets they serve.

Seafood industry: Because of the two ferry links in the West Lynn Canal Highway, there would be negligible or minor benefits in terms of increased opportunity for Juneau processors to ship fresh fish to Lower 48 markets. The cost and logistics involved in the ferry links would constrain time-sensitive trucking activity.

Mining industry: The West Lynn Canal Highway would improve access to an area with known mineral potential; however, there is little exploration activity currently occurring in the area. Improved, direct access to Juneau decreases travel time between Juneau and Skagway, which may result in additional Skagway residents seeking work at Juneau area mines.

ES 1.4.2 Juneau

Transportation: Because the West Lynn Canal Highway relies on two ferry links, it would have minor effects on how Juneau is supplied.

Independent visitors: The West Lynn Canal Highway would bring an estimated 129,700 new visitors to Juneau in 2020. This includes additional non-Alaskans and residents of Haines, Skagway, and Whitehorse.

Employment and population growth: Increased visitor spending associated with the West Lynn Canal Highway would generate an estimated 105 new jobs in the Juneau economy in 2020. This would result in a population increase of approximately 158 residents, an overall increase of about 0.5 percent in 2020.

Local tax revenues: Additional visitor traffic to Juneau would account for about $10 million in additional spending, generating $500,000 in additional sales tax revenues to the CBJ in 2020.

Public utilities: Juneau's public utilities would not be impacted by the West Lynn Canal Highway.

ES 1.4.3 Haines

Visitor industry: The number of travelers passing through and visiting Haines would increase substantially with the West Lynn Canal Highway. The economic impact of this increase in traffic depends primarily on visitors' length of stay. Some of the visitor traffic would pass through Haines without stopping. Other visitors might spend a short time in Haines and purchase gas, food, or souvenirs. Finally, others would spend one or more nights in Haines and have a larger impact on the local economy.

New traffic to Haines would be expected to total approximately 81,400 new visitors annually in 2020. This does not include Haines resident traffic or current baseline traffic (the volume of traffic that already travels to or through Haines).

Employment and population growth: Haines would see an increase in population with the West Lynn Canal Highway. Total new employment related to the West Lynn Canal Highway (including direct and indirect jobs) would be estimated at 15 jobs. This employment increase would translate into population growth of approximately 23 residents, a 0.9 percent increase in the local population.

Housing demand: The demand for housing in Haines would increase along with population growth. Population growth of approximately 23 residents would translate into demand for approximately 7 additional housing units.

Local government revenues: The expected net increase in spending of $6.3 million annually would generate $340,000 in annual sales tax revenues in 2020 (assuming it is all taxed at the city rate of 5.5 percent). Visitor spending would also generate additional bed tax revenues. In addition, an increase in housing demand would lead to an increase in housing values, resulting in a potential increase in property tax revenues (assuming tax rates are held constant). The West Lynn Canal Highway would also result in an increase in private property values for real estate located along the highway.

Public utilities: Population growth associated with the West Lynn Canal Highway would contribute to the need for expansion of water supply facilities. Over the long term, as Haines' population grows, additional wastewater treatment facilities may be required.

Public safety: Increased traffic to and through Haines would place additional demands on the community's fire protection and emergency services. If fire and EMS personnel respond to incidents outside current service areas, it would reduce capacity to deliver normal services while those personnel and equipment are occupied.

ES 1.4.4 Skagway

Transportation: The West Lynn Canal Highway would improve transportation to and from Skagway (meaning that the cost, in terms of time and out-of-pocket expenses, would be reduced) for personal vehicle traffic. Two ferry connections would be required for travel to Juneau, however, and the cost and inconvenience associated with these ferry links would constrain travel, relative to the East Lynn Canal Highway.

The West Lynn Canal Highway would not affect how Skagway is supplied in terms of freight shipments. The cost or frequency of barge service would not change. Freight that now comes from Juneau on the ferry would be diverted to the West Lynn Canal highway; however, it is not clear that shipping costs between Juneau and Skagway would be reduced, which would depend on the fares charged for commercial vehicles on the ferries.

Cruise ship traffic: As is the case with the East Lynn Canal Highway, cruise ship traffic to Skagway would not be affected by the West Lynn Canal Highway.

Independent visitors: The West Lynn Canal Highway could result in little change in non-Alaskan visitor travel to and through Skagway and a small increase in Juneau resident travel (because the West Lynn alternative does represent a small improvement in travel to Skagway in terms of travel convenience and cost). Traffic forecasts indicate that the West Lynn Canal Highway would produce new traffic to (and through) Skagway of about 60,900 additional visitors.

Employment and population growth: The net economic effect on Skagway is likely to be a negligible to minor increase in that sector of the economy that depends on independent visitor travel. Overall, the employment, payroll, population, and local tax effects of the West Lynn Canal Highway would be negligible to minor. Total new employment related to the West Lynn Canal Highway (including direct and indirect jobs) would be an estimated 50 jobs. This

employment increase would translate into population growth of approximately 75 residents, an approximately 8 percent increase in the local population.

ES 1.5 Alternatives 4A through 4D

ES 1.5.1 General Effects

Transportation: The marine alternatives would generate traffic to and from Juneau ranging from approximately 100 annual ADT to 265 annual ADT in 2020. Alternative 4B, FVF service from Berners Bay, would generate the highest volume of traffic and 4C the lowest volume of traffic. Traffic volumes vary among the marine alternatives because each has unique user or traveler costs.

Barge service would be unaffected by the marine alternatives. Freight that now moves from Juneau to Skagway on the ferry would not be affected, unless costs associated with shipping on fast ferries is higher than on mainline vessels.

Industry effects: The marine alternatives would have negligible effects on the seafood, mining, and forest products industries.

Public utilities: Public utilities in the communities of Juneau, Haines, and Skagway would not be substantially affected by the marine alternatives. Alternative 4B would generate the most traffic among the marine alternatives. That alternative would result in increased traffic to Haines and Skagway, which would place additional minor demands on local utilities.

Public safety: The marine alternatives would have very little impact on public safety. The need to send fire and emergency personnel to address a ferry incident has arisen infrequently in the past. Marine alternatives calling for new terminals north of Auke Bay would be more challenging for public safety personnel than other marine alternatives. Incident response time would increase in proportion to the distance of the new terminals from downtown Juneau.

ES 1.5.2 Juneau

Independent visitors: The marine alternatives would have positive impacts on Juneau's visitor industry. To the extent that the marine alternatives improve ferry service in Lynn Canal in terms of frequency, convenience, and cost, there would be an increase in the number of independent visitors traveling to Juneau. The marine alternatives include continuing mainline service to Haines and Skagway (meaning that mainline ferry travelers need not disembark in Juneau, as would be the case with the highway alternatives). Alternative 4C would have the least impact on visitor traffic (with no increase or decrease expected).

Alternative 4B would have the most impact on visitor traffic (with approximately 53,100 new visitors expected and $4.1 million in additional annual spending) in 2020.

Employment growth: Alternative 4B would generate the most job growth in Juneau (an estimated 40 new jobs) and Alternative 4C the least (no new jobs), among the marine alternatives. Alternatives 4A and 4D would generate an estimated 20 and 35 jobs, respectively, in 2020.

Local tax revenues: Additional visitor traffic to Juneau associated Alternative 4B would account for $200,000 in additional sales tax revenues to the CBJ in 2020. Alternative 4C would generate minimal new sales tax revenues ($9,000) to the CBJ.

ES 1.5.3 Haines and Skagway

Independent visitors: The marine alternatives would bring between zero and approximately 28,000 additional visitors to Haines and between approximately 4,100 and 36,200 additional visitors to Skagway in 2020. For both communities, Alternative 4B would generate the highest level of new traffic. Alternative 4B could generate up to $2.2 million in additional spending in Haines and about $2.8 million in additional spending in Skagway in 2020.

Population and related growth: Alternative 4B could create an estimated 20 new jobs in Haines and an estimated 30 new jobs in Skagway. The marine alternatives would have negligible to minor impacts on Haines' and Skagway's population, housing and real estate markets, and local government revenues.

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Acronyms and Abbreviations

ACF	Alaska Class Ferry
ADF&G	Alaska Department of Fish and Game
ADOLWD	Alaska Department of Labor and Workforce Development
ADT	Average Daily Traffic
AEL&P	Alaska Electric Light & Power
AMHS	Alaska Marine Highway System
AML	Alaska Marine Lines
ANCSA	Alaska Native Claims Settlement Act
AP&T	Alaska Power and Telephone Company
AVSP	Alaska Visitor Statistics Program
AWARE	Aiding Women in Abuse and Rape Emergencies
BEA	U.S. Bureau of Economic Affairs
CBJ	City and Borough of Juneau
CCFR	Capital City Fire Rescue
CCTHITA	Central Council Tlingit and Haida Indian Tribes of Alaska
CDP	Census-Designated Place
CFEC	Alaska Commercial Fisheries Entry Commission
CPI-U	Bureau of Labor Statistics Consumer Price Index for Municipality of Anchorage – All Items - All Urban Consumers
CWS	Community Waste Solutions
DIPAC	Douglas Island Pink and Chum
DOT&PF	Alaska Department of Transportation and Public Facilities
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
EPA	U.S. Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FVF	Fast Vehicle Ferry
FY	Fiscal Year
GPD	Gallons per Day
GPM	Gallons per Minute
HCVB	Haines Convention and Visitors Bureau
IPEC	Inside Passage Electric Cooperative
JAI	Juneau Access Improvements
JCVB	Juneau Convention and Visitors Bureau
JEDC	Juneau Economic Development Council
JIA	Juneau International Airport
JPD	Juneau Police Department
kV	Kilovolt
KVFD	Klukwan Volunteer Fire Department
LCCS	Lynn Canal Counseling Services
LUD	Land Use Designation
mbf	Thousand Board Feet
MGD	Million Gallons per Day
MW	Megawatt

MWh	Megawatt Hours
NAICS	North American Industry Classification System
NEI	Northern Economics, Inc.
NHS	National Highway System
NWCA	North West CruiseShip Association
NWCCA	North West & Canada Cruise Association
REACH	Resources Empowerment and Advocacy in the Community and Home
RV	Recreational Vehicle
SAIL	Southeast Alaska Independent Living
SATP	Southeast Alaska Transportation Plan
SEARHC	Southeast Alaska Regional Health Consortium
SEI	Southern Energy, Inc.
SEIS	Supplemental Environmental Impact Statement
SIC	Standard Industry Classification
SPD	Skagway Police Department
SVFD	Skagway Volunteer Fire Department
UA	University of Alaska
UAF	University of Alaska Fairbanks
USFS	U.S. Forest Service
WSH-500	Wingship Marine Vessel

1. Introduction

1.1 Purpose

This report updates the December 2004 Appendix H: *Socioeconomic Effects Technical Report* (October 2004) and the Addendum to Appendix H prepared in October 2005. These reports were prepared to support the 2006 Juneau Access Improvements (JAI) Supplemental Environmental Impact Statement (SEIS). Information from these reports has been updated where more recent information is available.

The existing public transportation infrastructure of Lynn Canal affects the economic and social conditions in Juneau, Haines, and Skagway. Proposed changes in the regional transportation infrastructure would result in social and economic consequences for these communities. This report provides an assessment of the current baseline conditions in these communities, including demographics, population, education, healthcare and social services, public safety, and quality of life in the JAI Project area and a discussion of the effects the proposed alternatives would have. This report also includes a discussion of effects for a new alternative, Alternative 1B.

1.1.1 Alternative 1 – No Action

The No Action Alternative (Alternative 1) includes a continuation of mainline ferry service in Lynn Canal and incorporates two Day Boat Alaska Class Ferries (ACF). The Alaska Marine Highway System (AMHS) would continue to be the National Highway System (NHS) route from Juneau to Haines and Skagway, and no new roads or ferry terminals would be built. In addition to the Day Boat ACFs, programmed improvements include improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs as well as expansion of the Haines Ferry Terminal to include a new double bow berth to accommodate the Day Boat ACFs. This alternative is based on the most likely AMHS operations in the absence of any capital improvements specific to the JAI Project.

Mainline service would include two round trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. During the summer, one Day Boat ACF would make one round trip between Auke Bay and Haines six days per week, and one would make two round-trips per day between Haines and Skagway six days per week. The Day Boat ACFs would not sail on the seventh day because the mainliner is on a similar schedule. In the winter, ferry service in Lynn Canal would be provided primarily by the Day Boat ACFs three times per week. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal.

1.1.2 Alternative 1B – Enhanced Service with Existing AMHS Assets

Alternative 1B includes all of the components of Alternative 1, No Action, but focuses on enhancing service using existing AMHS assets without major initial capital expenditures. Similar to Alternative 1, Alternative 1B includes: a continuation of mainline ferry service in Lynn Canal; the AMHS would continue to be the NHS route from Juneau to Haines and Skagway; no new roads or ferry terminals would be built; and in addition to the Day Boat ACFs, programmed improvements include improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs as well as expansion of the

Haines Ferry Terminal to include a new double bow berth to accommodate the Day Boat ACFs. Service to other communities would remain the same as the No Action Alternative. Alternative 1B keeps the *M/V Malaspina* in service after the second Day Boat ACF is brought online to provide additional capacity in Lynn Canal. Enhanced services included as part of Alternative 1B are a 20 percent reduction in fares for trips in Lynn Canal and extended hours of operations for the reservation call center.

Mainline service would include two round trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. During the summer, the *M/V Malaspina* would make one round-trip per day seven days per week on a Skagway-Auke Bay-Skagway route, while one Day Boat ACF would make one round trip between Auke Bay and Haines six days per week, and one would make two round-trips per day between Haines and Skagway six days per week. The Day Boat ACFs would not sail on the seventh day because the mainliner would be on a similar schedule. In the winter, ferry service in Lynn Canal would be provided primarily by the Day Boat ACFs three times per week.

1.1.3 Alternative 2B – East Lynn Canal Highway to Katzehin, Shuttles to Haines and Skagway

Alternative 2B would construct the East Lynn Canal Highway (50.8-miles including 47.9 miles of new highway and widening of 2.9 miles of the existing Glacier Highway) from Echo Cove around Berners Bay to a new ferry terminal two miles north of the Katzehin River. Ferry service would connect Katzehin to Haines and Skagway. In addition, this alternative includes modifications to the Skagway Ferry Terminal to include a new end berth and construction of a new conventional monohull ferry to operate between Haines and Skagway. Mainline ferry service would end at Auke Bay. This alternative assumes the following improvements will have been made independent of the JAI Project before the East Lynn Canal Highway would come on-line: two Day Boat ACFs, improved vehicle and passenger staging areas at the Haines Ferry Terminal to optimize traffic flow on and off the Day Boat ACFs, and expansion of the Haines Ferry Terminal to include two new double bow berths.

During the summer months, one Day Boat ACF would make eight round-trips per day between Haines and Katzehin, a second Day Boat ACF would make six round-trips per day between Skagway and Katzehin, and the Haines-Skagway shuttle ferry would make two trips per day. During the winter, one Day Boat ACF would make six round-trips per day between Haines and Katzehin, and a second Day Boat ACF would make four round-trips per day between Skagway and Katzehin. The Haines-Skagway shuttle would not operate; travelers going between Haines and Skagway would travel to Katzehin and transfer ferries.

1.1.4 Alternative 3 – West Lynn Canal Highway

The West Lynn Canal Highway would upgrade/extend the Glacier Highway (5.2 miles including 2.3 miles of new highway and widening of 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay. New ferry terminals would be constructed at Sawmill Cove in Berners Bay and at William Henry Bay on the west shore of Lynn Canal, and the Skagway Ferry Terminal would be modified to include a new end berth. A new 38.9-mile highway would be constructed from the William Henry Bay Ferry Terminal to Haines with a bridge across the Chilkat River/Inlet connecting into Mud Bay Road. A new conventional

monohull ferry would be constructed and would operate between Haines and Skagway. Mainline ferry service would end at Auke Bay. This alternative assumes the following improvements will have been made independent of the JAI Project before the West Lynn Canal Highway would come on-line: two Day Boat ACFs, improved vehicle and passenger staging areas at the Haines Ferry Terminal to optimize traffic flow on and off the Day Boat ACFs, and expansion of the Haines Ferry Terminal to include two new double bow berths.

During the summer, two Day Boat ACFs would make six round-trips per day between Sawmill Cove and William Henry Bay (total of 12 trips each direction), and the Haines-Skagway shuttle ferry would make six round-trips per day. During the winter, one Day Boat ACF would make four round-trips per day between Sawmill Cove and William Henry Bay, and the Haines-Skagway shuttle ferry would make four round-trips per day.

1.1.5 Alternatives 4A through 4D – Marine Alternatives

All four marine alternatives would include continued mainline ferry service in Lynn Canal with a minimum of two trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. Each marine alternative includes a new conventional monohull shuttle that would make two round-trips per day between Haines and Skagway six days a week in the summer and a minimum of three round-trips per week between Haines and Skagway in the winter. The AMHS would continue to be the NHS route from Juneau to Haines and Skagway. These alternatives assume the following improvements will have been made independent of the JAI Project before the alternative comes on-line: improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs and expansion of the Haines Ferry Terminal to include new double bow berths.

1.1.5.1 Alternative 4A – Fast Vehicle Ferry Service from Auke Bay

Alternative 4A would construct two new fast vehicle ferries (FVF). No new roads would be built for this alternative, and the Auke Bay Ferry Terminal would be expanded to include a new double stern berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal, and the Day Boat ACFs would no longer operate in Lynn Canal. The FVFs would make two round-trips between Auke Bay and Haines and two round-trips between Auke Bay and Skagway per day in the summer. During the winter, one FVF would make one round-trip between Auke Bay and Haines and one round-trip between Auke Bay and Skagway each day.

1.1.5.2 Alternative 4B – Fast Vehicle Ferry Service from Berners Bay

Similar to Alternative 4A, Alternative 4B would construct two new FVFs. This alternative would upgrade/extend Glacier Highway (5.2 miles including 2.3 miles of new highway and widening of 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay where a new ferry terminal would be constructed. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal, and the Day Boat ACFs would no longer operate in Lynn Canal. In the summer, the FVFs would make two round-trips between Sawmill

Cove and Haines and two round-trips between Sawmill Cove and Skagway per day. During the winter, one FVF would make one round-trip between Auke Bay and Haines and one round-trip between Auke Bay and Skagway each day.

1.1.5.3 Alternative 4C – Conventional Monohull Service from Auke Bay

Alternative 4C would use Day Boat ACFs to provide additional ferry service in Lynn Canal. No new roads would be built for this alternative. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth, and the Skagway Ferry Terminal would be expanded to include a new end berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. In the summer, one Day Boat ACF would make one round-trip per day between Auke Bay and Haines, and one Day Boat ACF would make one round-trip per day between Auke Bay and Skagway. During the winter, one Day Boat ACF would alternate between a round-trip to Haines one day and a round-trip to Skagway the next day.

1.1.5.4 Alternative 4D – Conventional Monohull Service from Berners Bay

Alternative 4D would use Day Boat ACFs to provide additional ferry service in Lynn Canal. This alternative would upgrade/extend Glacier Highway (5.2 miles including 2.3 miles of new highway and widening of 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay where a new ferry terminal would be constructed. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth, and the Skagway Ferry Terminal would be expanded to include a new end berth. This alternative includes construction of a new conventional monohull ferry that would operate between Haines and Skagway. In the summer, the Day Boat ACFs would make two trips per day between Sawmill Cove and Haines and two trips per day between Sawmill Cove and Skagway. During the winter, a Day Boat ACF would operate from Auke Bay, alternating between a round-trip to Haines one day and to Skagway the next day.

1.2 Methodology

The findings summarized in this document are based upon a combination of primary and secondary research.

Primary research includes interviews with Juneau, Haines, and Skagway businesses, government, and other community representatives. In addition, executive interviews were conducted with State and local government agencies throughout the research process in order to gather data and assess the effects of the various transportation alternatives.

Based upon the primary and secondary research conducted, this report identifies probable economic and social effects of each improved access alternative.

1.3 Report Outline

This report has two chapters following this introduction:

- **Chapter 2 – Baseline Conditions:** Chapter 2 reviews the economic and social baseline conditions of Juneau, Haines, and Skagway. The chapter has three major sections for each of the affected communities. The first section includes demographics, economic

conditions, basic and support sector industries, and municipal finances. The second section outlines the public utility infrastructure for each community, while the third section describes the social condition including education, healthcare, and public safety in each community.

- **Chapter 3 – Effects of Access Improvements:** Chapter 3 also has three major sections outlining the effects of improved access on economics, public utilities, and social environment. Within each section are four subsections, one for each transportation alternative, outlining pertinent effects to the communities of Juneau, Haines, and Skagway.

2. Baseline Conditions

2.1 Economic Conditions

2.1.1 City and Borough of Juneau

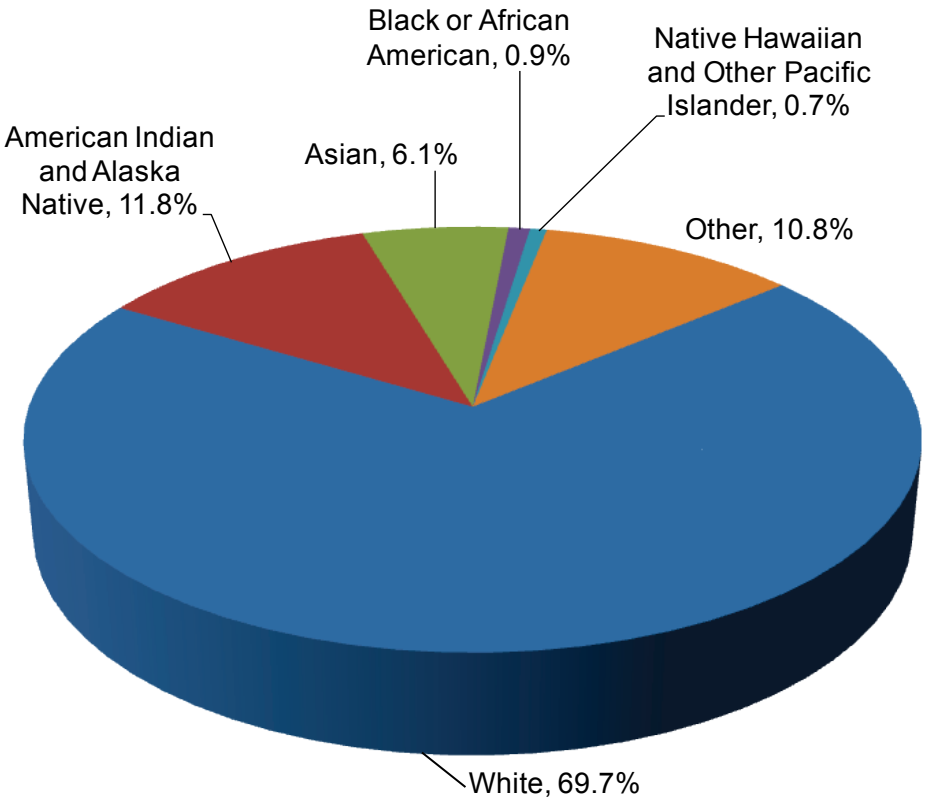
This section outlines historical and current economic conditions including demographics, population, and forecasted population for the years 2012 to 2050. Public Utilities Impacts and the Social Environment, which includes information about education, healthcare and social services, and public safety, are also summarized in Sections 3.2 and 3.3, respectively.

2.1.1.1 Demographics

The 2010 Census counted 31,275 residents living in Juneau, averaging 2.6 persons per household (based on 12,187 occupied housing units). This is an increase in population from the 1990 Census, when 26,751 individuals lived in Juneau, as well as the 2000 Census, when 30,711 residents lived in Juneau and reflects a drop in the number of persons per household (2.70 in the 1990 Census with 9,902 occupied housing units and 2.66 in the 2000 Census with 11,543 occupied housing units). Approximately three-fourths (76.5 percent) of Juneau residents are 18 years of age or older. Males outnumber females slightly, at 51.0 percent to 49.0 percent, respectively.

According to the 2010 Census, less than three-quarters of Juneau's population is White (69.7 percent) and 11.8 percent is American Indian and Alaska Native. Another 6.1 percent is Asian, 0.9 percent is Black or African American, and the remainder is Native Hawaiian and Other Pacific Islander or some other race. In comparison, the 2000 Census reported that 76 percent of Juneau's population was White, 15 percent was American Indian and Alaska Native, 6 percent was Asian, 1 percent was Black or African American and the remainder was Native Hawaiian and Other Pacific Islander or some other race. Figure 2-1 illustrates population composition for the City and Borough of Juneau (CBJ).

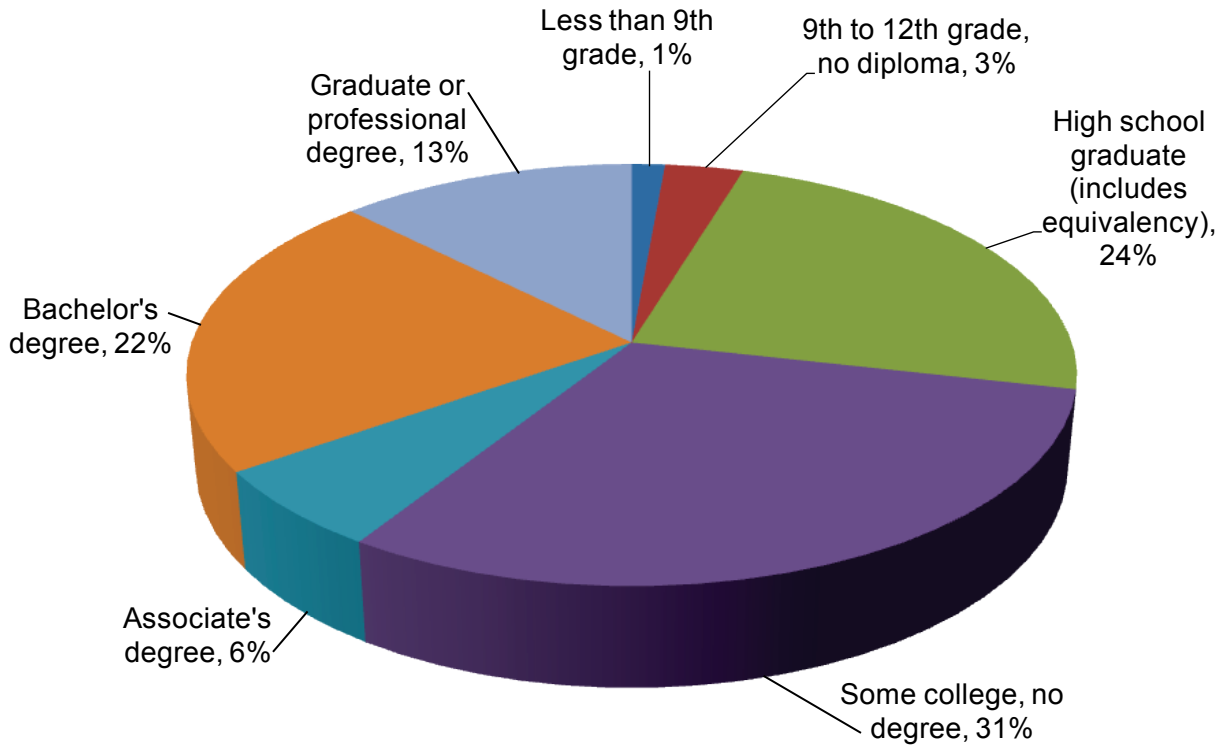
Figure 2-1: City and Borough of Juneau Racial Composition of Population, 2010



Source: U.S. Census Bureau (2010a).

Educational demographic data for 2010 indicate that 95.2 percent of Juneau residents who are 25 years and older have completed high school. Individuals holding at least an associate's degree number 40.9 percent, and 34.7 percent hold a bachelor's degree or higher. Figure 2-2 shows educational information for the CBJ. This compares to the 1990 Census when 38 percent of the population held at least an associate's degree and 31 percent of the population held a bachelor's degree or higher, and the 2000 Census when 43 percent of the population held at least an associate's degree and 36 percent held a bachelor's degree or higher.

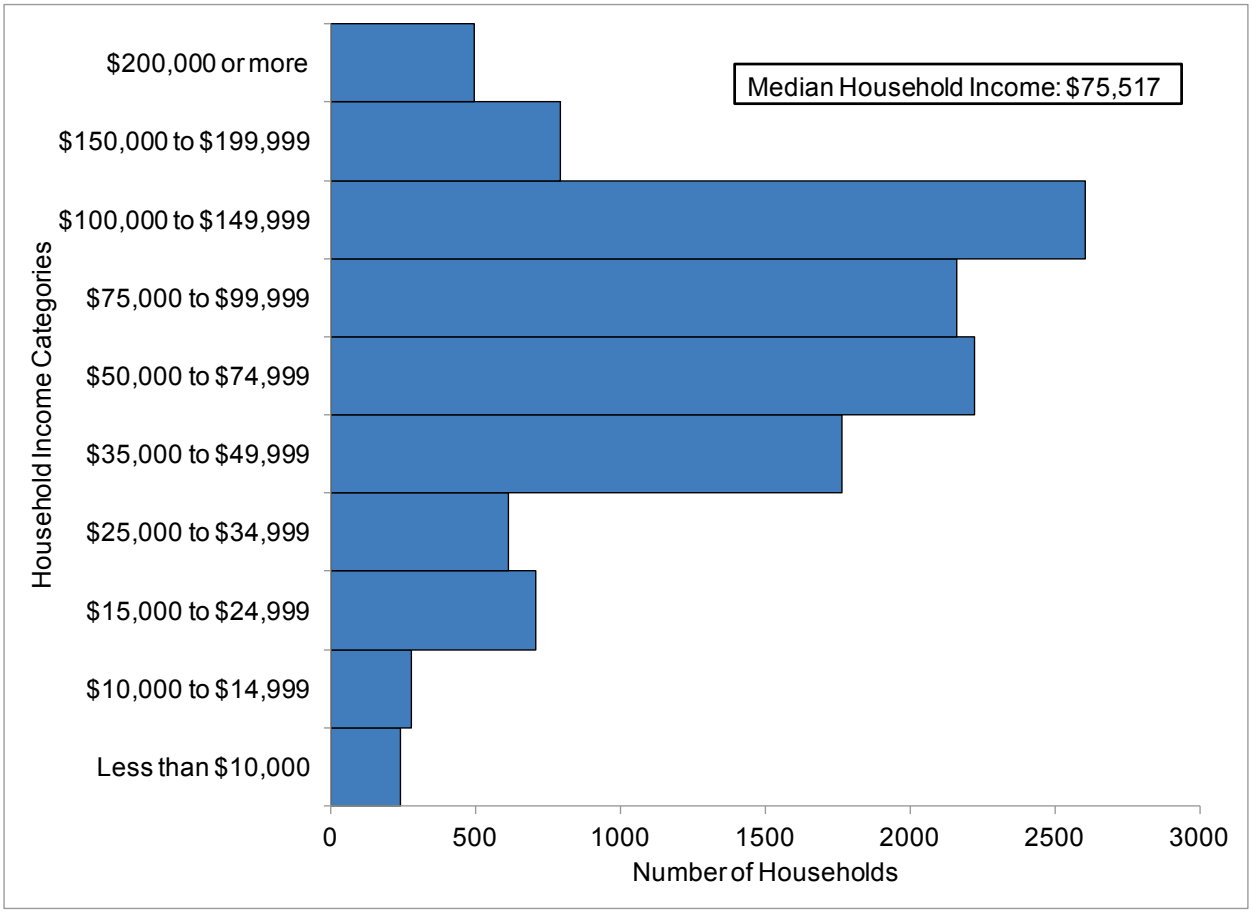
Figure 2-2: City and Borough of Juneau Educational Attainment of Population, 2010



Source: U.S. Census Bureau (2010b).

There were 12,005 households reported in Juneau in the 2010 American Community Survey. Among Juneau households in 2010, 10.2 percent had incomes less than $25,000, and 13.1 percent of all individuals living in Juneau had incomes below the poverty line. More than 68 percent of the area households had incomes of more than $50,000, with 50.4 percent earning $75,000 or more. Median household income was $75,517 and per capita income was $49,458. (See Figure 2-3.) In comparison, the 2000 Census reported 11,534 households in Juneau. Among these households, 15.5 percent had incomes less than $25,000, and 6 percent of all individuals living in Juneau had incomes below the poverty line. More than 60 percent of the area households had incomes of more than $50,000, with almost 38 percent of households earning $75,000 or more. Median household income was $62,034 and per capita income was $26,719.

Figure 2-3: City and Borough of Juneau Annual Household Income, 2010



Source: U.S. Census Bureau (2010b).

2.1.1.2 Population

The population growth in Juneau has slowed in the last 10 years, averaging a 0.6 percent rate of increase, from 30,482 persons in 2001 to 32,290 in 2011. The population of Juneau has increased 138.2 percent since 1970. This is an average annual rate of growth of 2.1 percent. Population change in the 2000s was irregular, with growth in some years and declines in others (2001, 2004, 2006, and 2007). The 1990s brought a much slower pace of growth than previous decades, with the population increasing about 16 percent from 1990 to 2002, an average annual growth rate of 1.2 percent. During the 1980s, population change was irregular in Juneau, with growth in some years and declines in others (1986, 1987, and 1988). Table 2-1 shows the population for the CBJ for the years 1970 through 2011.

Table 2-1: City and Borough of Juneau Historical Population, 1970–2011

Year	Population	Annual Number Change	Annual Percent Change	5-Year Rate of Change	10-Year Rate of Change	20-Year Rate of Change
1970	13,556					
1971	14,600	1,044	7.7			
1972	15,200	600	4.1			
1973	15,700	500	3.3			
1974	16,100	400	2.5			
1975	16,400	300	1.9			
1976	17,000	600	3.7	3.1%		
1977	17,500	500	2.9			
1978	18,000	500	2.9			
1979	18,900	900	5.0			
1980	19,528	628	3.3			
1981	21,329	1,801	9.2	4.6%	3.9%	
1982	22,451	1,122	5.3			
1983	24,007	1,556	6.9			
1984	25,268	1,261	5.3			
1985	26,037	769	3.0			
1986	25,998	(39)	-0.1	4.0%	4.3%	
1987	24,966	(1,032)	-4.0			
1988	24,655	(311)	-1.2			
1989	25,100	445	1.8			
1990	26,751	1,651	6.6			
1991	27,579	828	3.1	1.2%	2.6%	3.2%
1992	28,253	674	2.4			
1993	28,448	195	0.7			
1994	28,454	6	0.0			

Year	Population	Annual Number Change	Annual Percent Change	5-Year Rate of Change	10-Year Rate of Change	20-Year Rate of Change
1995	28,700	246	0.9			
1996	29,230	530	1.8	1.2%	1.2%	2.7%
1997	29,713	483	1.7			
1998	30,021	308	1.0			
1999	30,189	168	0.6			
2000	30,711	522	1.7			
2001	30,482	(229)	-0.7	0.8%	1.0%	1.8%
2002	31,047	565	1.9			
2003	31,364	317	1.0			
2004	31,213	(151)	-0.5			
2005	31,340	127	0.4			
2006	30,943	(397)	-1.3	0.3%	0.6%	0.9%
2007	30,350	(593)	-1.9			
2008	30,554	204	0.7			
2009	30,946	392	1.3			
2010	31,275	329	1.1			
2011	32,290	1,015	3.2	0.9%	0.6%	0.8%

Source: Table developed by NEI using population data from ADOLWD.

2.1.1.3 Population Forecast

There is considerable uncertainty in forecasting Juneau's population because it is not possible to predict when or how State government will choose to deal with continuing revenue shortfalls. The opening of the Arctic National Wildlife Reserve to oil drilling or the construction of an Alaskan route for a natural gas pipeline could temporarily mitigate some of the budget deficit. Implementation of some new tax structure could also ensure that State programs will continue uninterrupted.

Northern Economics, Inc. (NEI) developed low-, medium-, and high-growth population scenarios using historical rates of population (Table 2-2 and Figure 2-4). The medium case is resulting from a logarithmic regression starting with the population in the year 2000. By 2050, Juneau's population reaches approximately 25,143 in the low case, 32,080 in the medium case, and 39,017 in the high case. For further detail regarding population forecasts for the CBJ by year, see Appendix B (AMHS Lynn Canal Market Data and Population Forecast) of Appendix AA (2014 *Traffic Forecast Report*) of the JAI Project SEIS.

Table 2-2: Population Forecasts for the City and Borough of Juneau, 2012–2050

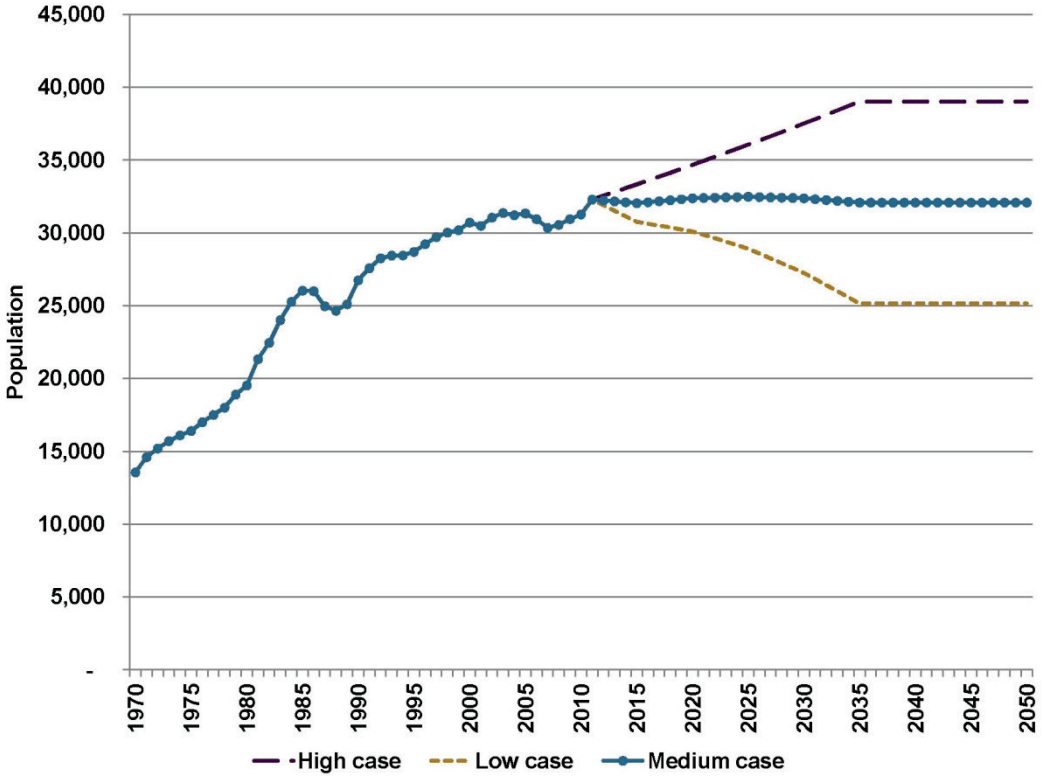
Year	Mid-Range Population Forecast	Annual Number Change	Annual Percent Change	Low-End Population Forecast	High-End Population Forecast
2012	32,227			31,909	32,546
2013	32,165	(63)	-0.2	31,526	32,803
2014	32,102	(62)	-0.2	31,142	33,063
2015	32,040	(62)	-0.2	30,755	33,325
2016	32,108	68	0.2	30,627	33,588
2017	32,176	68	0.2	30,498	33,854
2018	32,244	68	0.2	30,366	34,122
2019	32,313	68	0.2	30,233	34,393
2020	32,381	68	0.2	30,097	34,665
2021	32,402	21	0.1	29,864	34,939
2022	32,423	21	0.1	29,629	35,216
2023	32,443	21	0.1	29,392	35,495
2024	32,464	21	0.1	29,153	35,776
2025	32,485	21	0.1	28,911	36,059
2026	32,464	(21)	-0.1	28,583	36,344
2027	32,443	(21)	-0.1	28,253	36,632
2028	32,421	(21)	-0.1	27,921	36,922
2029	32,400	(21)	-0.1	27,586	37,214
2030	32,379	(21)	-0.1	27,249	37,509
2031	32,319	(60)	-0.2	26,832	37,806
2032	32,259	(60)	-0.2	26,413	38,105
2033	32,199	(60)	-0.2	25,992	38,407
2034	32,140	(60)	-0.2	25,568	38,711
2035	32,080	(60)	-0.2	25,143	39,017
2036	32,080	-	0.0	25,143	39,017
2037	32,080	-	0.0	25,143	39,017
2038	32,080	-	0.0	25,143	39,017
2039	32,080	-	0.0	25,143	39,017
2040	32,080	-	0.0	25,143	39,017
2041	32,080	-	0.0	25,143	39,017
2042	32,080	-	0.0	25,143	39,017
2043	32,080	-	0.0	25,143	39,017
2044	32,080	-	0.0	25,143	39,017
2045	32,080	-	0.0	25,143	39,017
2046	32,080	-	0.0	25,143	39,017

Year	Mid-Range Population Forecast	Annual Number Change	Annual Percent Change	Low-End Population Forecast	High-End Population Forecast
2047	32,080	-	0.0	25,143	39,017
2048	32,080	-	0.0	25,143	39,017
2049	32,080	-	0.0	25,143	39,017
2050	32,080	-	0.0	25,143	39,017

Note: For 2012–2035 the high-end population uses an annual rate of change of 0.79 percent (equal to the 20-year rate of change through 2011). The low-end population forecast is projected using the difference between the mid-range and the high-end forecasts. As the ADOLWD forecast only goes to 2035, forecasts for the years 2036–2050 are a continuation of the forecast for the year 2035 with a zero percent growth rate.

Source: Table developed by NEI using population forecasts from ADOLWD.

Figure 2-4. Historical and Forecast Population for the City and Borough of Juneau



Note: For 2012–2035 the high-end population uses an annual rate of change of 0.79 percent (equal to the 20-year rate of change through 2011). The low-end population forecast is projected using the difference between the mid-range and the high-end forecasts.

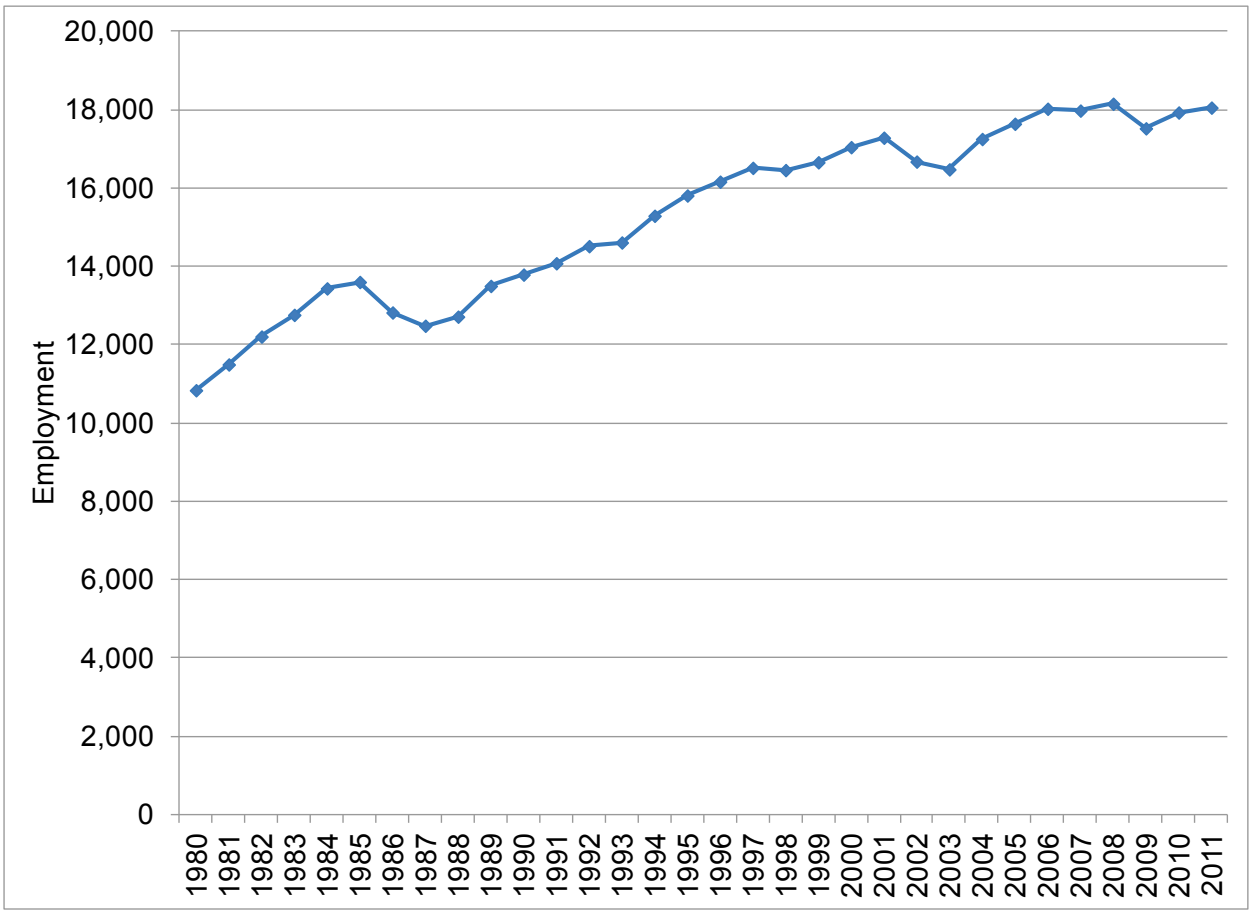
Source: Figure developed by NEI using population data and forecasts from ADOLWD.

2.1.1.4 Employment and Payroll

According to the Alaska Department of Labor and Workforce Development (ADOLWD), annual average employment in Juneau reached 18,057 jobs in 2011 (this is total wage and salary employment, which does not include uniformed military personnel or self-employed individuals such as commercial fishermen). This is an increase from 17,331 jobs in 2002.

Since 1980, employment in the CBJ has grown 67 percent, rising at an average annual rate of 1.6 percent. (See Figure 2-5 for a graph of Juneau's average annual employment.)

Figure 2-5: City and Borough of Juneau Average Annual Employment, 1980–2011

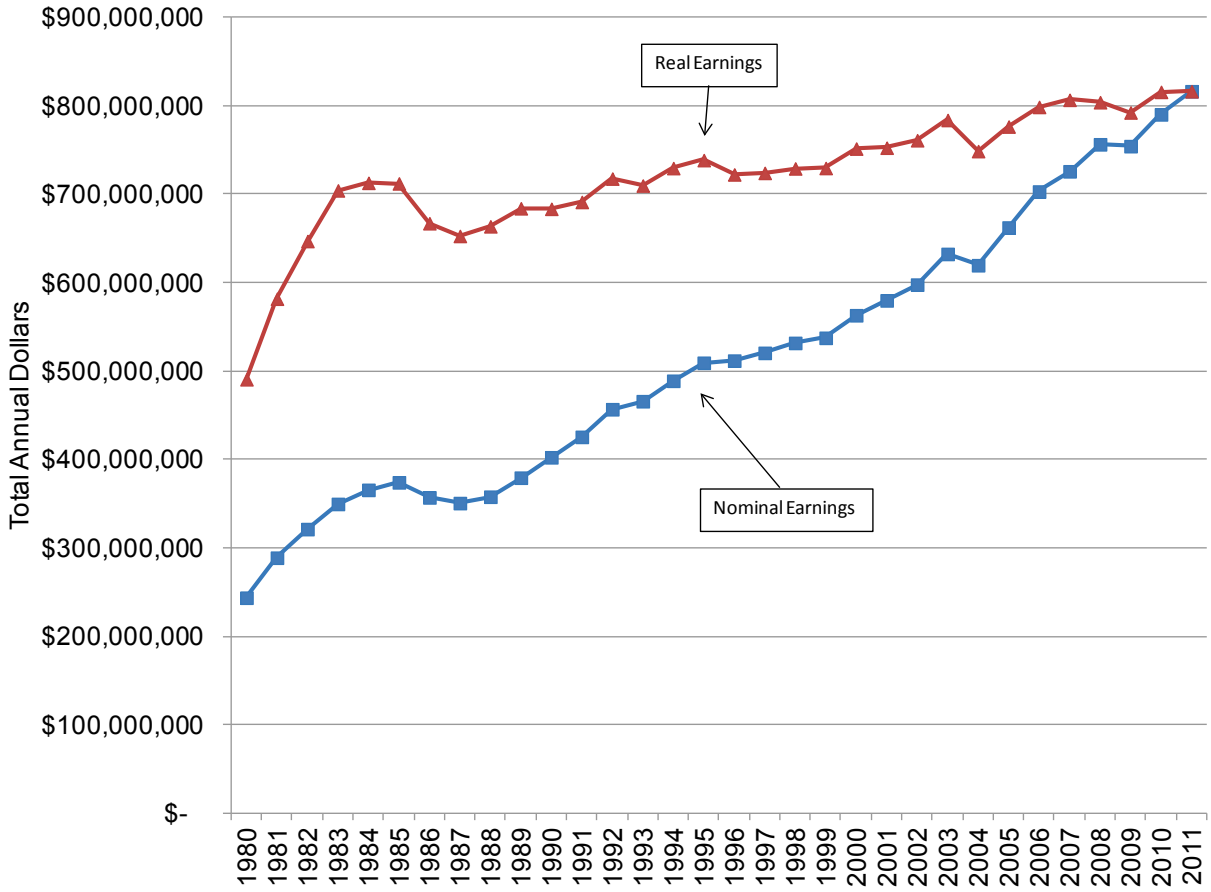


Source: ADOLWD (2012c).

Note: ADOLWD did not report employment data for 1990. The employment number for 1990 is the average of 1989 and 1991.

Juneau's payroll totaled $816 million in 2011, an increase from $598 million in 2002. In inflation-adjusted "real" dollars, total annual payroll in Juneau has increased by approximately 66 percent since 1980, rising at an average annual rate of 1.7 percent. Payroll was adjusted using the Bureau of Labor Statistics Consumer Price Index for Municipality of Anchorage – All Items – All Urban Consumers (CPI-U). See Figure 2-6.

Figure 2-6: City and Borough of Juneau Total Annual Payroll (Real and Nominal Dollars), 1980 – 2011



Source: ADOLWD (2012c). Conversion to real dollars (CPI-U Anchorage) was calculated by NEI.

Note: ADOLWD did not report employment data for 1990. The employment number for 1990 is the average of 1989 and 1991.

The year 2002 was the first year ADOLWD used the North American Industry Classification System (NAICS) for recording industry employment. This is a change from the previous Standard Industry Classification (SIC) system which focused on goods-producing industries. The NAICS is based on a production oriented framework. This means that producing units using identical or similar production processes are grouped together. In simpler terms, SIC was based on what was produced while NAICS is based on how products and services are produced (Gilbertsen, 2002). For this reason, comparison to the previous year's detailed industry employment and earnings is not possible. This shift in classification reflects an effort to achieve compatibility with the International Standard Classification of Economic Activities of the United Nations.

Government is Juneau's most important source of employment, accounting for nearly 41 percent of total employment (jobs) and nearly 50 percent of total annual earnings in 2011. State government alone accounts for nearly 24 percent, local government makes up almost 13 percent, and federal government comprises nearly 5 percent of total employment (see Table 2-3).

Service-providing industries in Juneau comprise approximately 37 percent of the total annual wage and hour earnings and account for 50 percent of the jobs. Trade, transportation, and utilities falls into third place with 18 percent of employment and nearly 13 percent of total earnings. This is similar to the distribution in 2002.

The leisure and hospitality industry accounts for 8 percent of total annual employment. This industry has average monthly employment of 1,459 workers, but peaked at 1,859 workers in April 2011. These positions are mostly seasonal, lower paying jobs, capturing only 3 percent of total wage and hour earnings.

The percentage of government workers in the economy has fallen since 1993, from 47.5 to 40.9 percent, while actual government employment increased by 441. The number of federal government workers fell from 961 in 1993, to 891 in 2002, to 838 in 2011. Government earnings comprise 50 percent of the total wage and hour earnings of workers in Juneau, down from 61 percent in 1993 and 53 percent in 2002.

Table 2-3: City and Borough of Juneau Industry Employment and Earnings, 2011

	Average Monthly Employment	Percent of Total Employment	Total Annual Earnings	Percent of Total Annual Earnings
TOTAL INDUSTRIES	**18,057**	**100.0**	**816,474,303**	**100.0**
Total Government	7,381	40.9	405,030,429	49.6
Federal Government	838	4.6	71,375,284	8.7
State Government	4,272	23.7	223,463,901	27.4
Local Government	2,272	12.6	110,191,244	13.5
Private Ownership	10,676	59.1	411,443,874	50.4
GOODS-PRODUCING	1,619	9.0	110,713,521	13.6
Natural Resources & Mining	670	3.7	59,442,055	7.3
Agriculture, Forestry, Fishing, Hunting	**		**	
Mining	**		**	
Construction	655	3.6	40,592,044	5.0
Construction of Buildings	245	1.4	12,813,905	1.6
Heavy Construction	74	0.4	6,620,152	0.8
Specialty Trade Contractors	336	1.9	21,157,987	2.6

	Average Monthly Employment	Percent of Total Employment	Total Annual Earnings	Percent of Total Annual Earnings
Manufacturing	294	1.6	10,679,422	1.3
Food	149	0.8	4,637,496	0.6
Printing & Support Activities	37	0.2	1,267,130	0.2
SERVICE-PROVIDING	9,056	50.2	300,730,353	36.8
Trade, Trans., & Utilities	3,288	18.2	104,881,920	12.8
Wholesale Trade	164	0.9		0.0
Retail Trade	1,994	11.0	52,084,087	6.4
Motor Vehicle & Parts Dealers	105	0.6	4,197,506	0.5
Building Material & Garden	232	1.3	6,063,293	0.7
Food & Beverages	514	2.8	12,219,795	1.5
General Merchandise	521	2.9	14,926,359	1.8
Miscellaneous	160	0.9	2,939,143	0.4
Transportation & Warehousing	1,052	5.8	40,818,108	5.0
Air Transportation	380	2.1	15,891,141	1.9
Water Transportation	**		**	
Truck Transportation	95	0.5	3,618,545	0.4
Scenic & Sightseeing	332	1.8	10,716,749	1.3
Information	234	1.3	11,478,650	1.4
Publishing, except Internet	**		**	
Broadcasting, except Internet	**		**	
Telecommunications	78	0.4	6,140,374	0.8
Financial Activities	622	3.4	29,487,105	3.6
Finance & Insurance	321	1.8	18,230,043	2.2
Credit Intermediation, etc.	193	1.1	9,692,952	1.2
Funds, Trusts, etc.	**		**	
Real Estate, Rental & Leasing	301	1.7	11,257,063	1.4
Real Estate	281	1.6	10,778,670	1.3
Rental & Leasing Svcs.	21	0.1	478,393	0.1
Professional & Business Svcs.	1,003	5.6	43,285,073	5.3
Professional, Scientific, Tech.	441	2.4	21,726,419	2.7
Mgmt. of Companies & Enterprises	**		**	
Administrative & Waste Svcs.	522	2.9	19,086,736	2.3

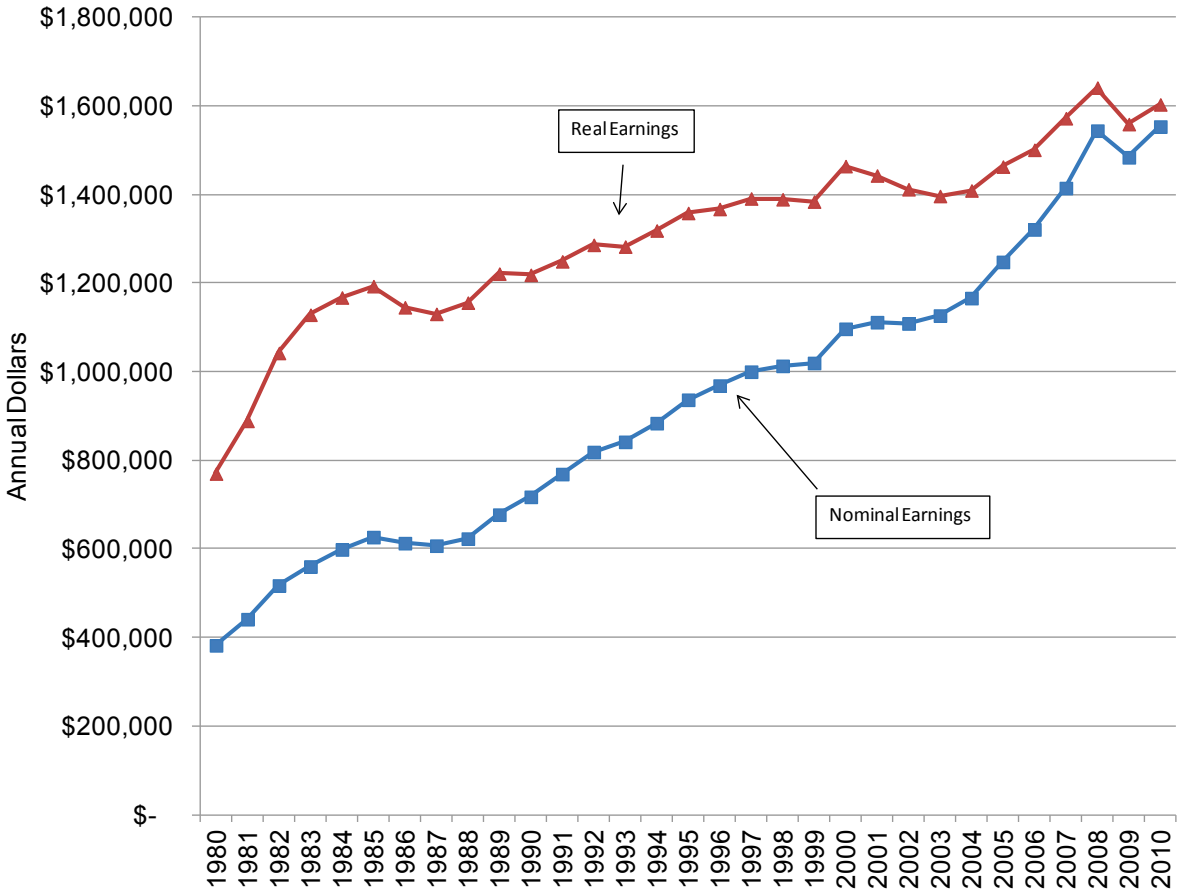
	Average Monthly Employment	Percent of Total Employment	Total Annual Earnings	Percent of Total Annual Earnings
Educational & Health Svcs.	1,826	10.1	65,595,882	8.0
Healthcare & Social Assistance	1,797	10.0	64,980,771	8.0
Out Patient Healthcare	686	3.8	29,821,860	3.7
Nursing & Residential Care	241	1.3	8,883,541	1.1
Social Assistance	870	4.8	26,275,370	3.2
Leisure & Hospitality	1,459	8.1	26,520,945	3.2
Arts, Entertainment & Recreation	322	1.8	5,192,607	0.6
Amusements, Gambling, Recreation	274	1.5	4,384,904	0.5
Accommodation & Food Svcs.	1,137	6.3	21,328,339	2.6
Accommodation	394	2.2	8,625,478	1.1
Food Services & Drinking Places	743	4.1	12,702,861	1.6
Other Services	614	3.4	19,299,537	2.4
Repair & Maintenance	85	0.5	2,948,210	0.4
Personal & Laundry	**		**	
Membership Organizations, etc.	421	2.3	13,963,995	1.7

Source: ADOLWD (2012c). Rates of change calculated by NEI.

2.1.1.5 Personal Income

Juneau's personal income totaled approximately $1.6 billion in 2010. Between 1980 and 2010, real personal income (in 2011 dollars) in Juneau grew by approximately 108 percent, an average annual rate of 2.5 percent. See Figure 2-7.

Figure 2-7: City and Borough of Juneau Personal Income (Real and Nominal Dollars in Thousands), 1980–2010



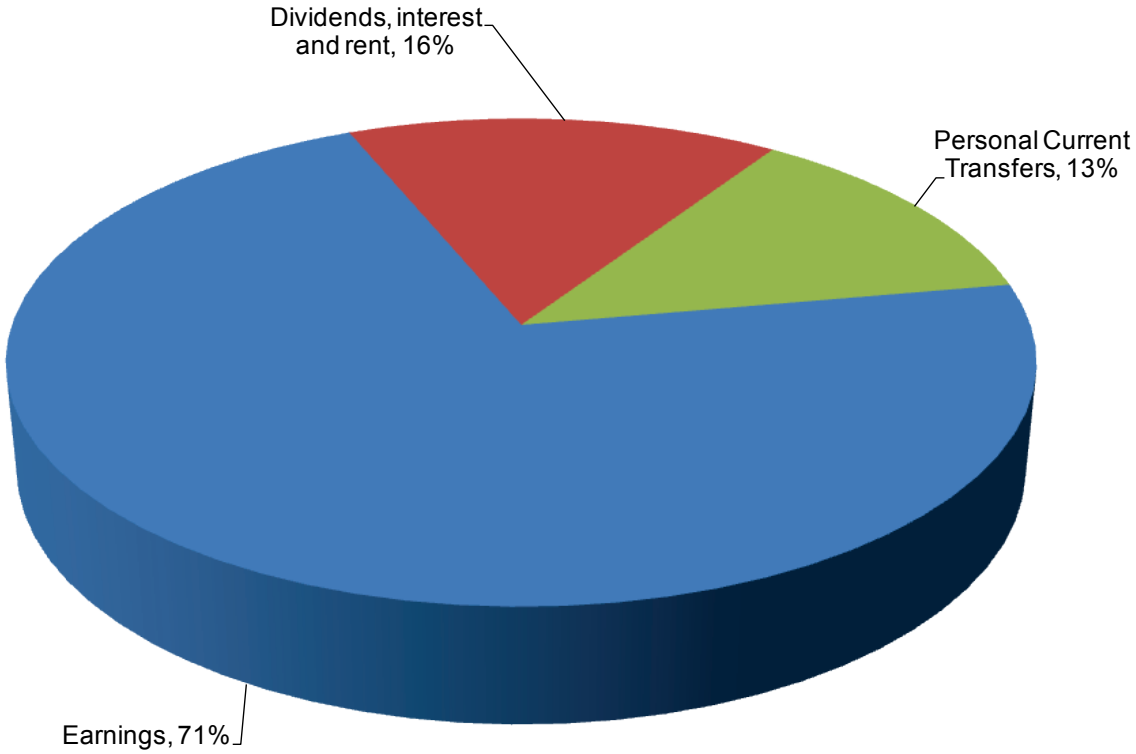
Note: Nominal income is the actual dollar amount received as income; real income accounts for the effect of inflation.

Source: Nominal Personal Income is provided by BEA (2010). Conversion to real dollars (CPI-U Anchorage) was calculated by NEI.

Personal income took a dip in the mid to late 1980s, similar to the change in payroll for this period. The loss of more than 1,000 State government and construction jobs accounted for this decline.

A large part of personal income is attributed to transfer payments (13 percent), and dividends, interest, and rents (16 percent) as shown in Figure 2-8. Earnings in 2010 accounted for the largest portion of personal income, 71 percent.

Figure 2-8: City and Borough of Juneau Personal Income by Source, 2010



Source: BEA (2010).

The most recent personal income data available from the U.S. Bureau of Economic Analysis (BEA) are for 2010 and are presented in Table 2-4. Figure 2-9 depicts personal income by industry in 2010.

Table 2-4: City and Borough of Juneau Personal Income, 2010

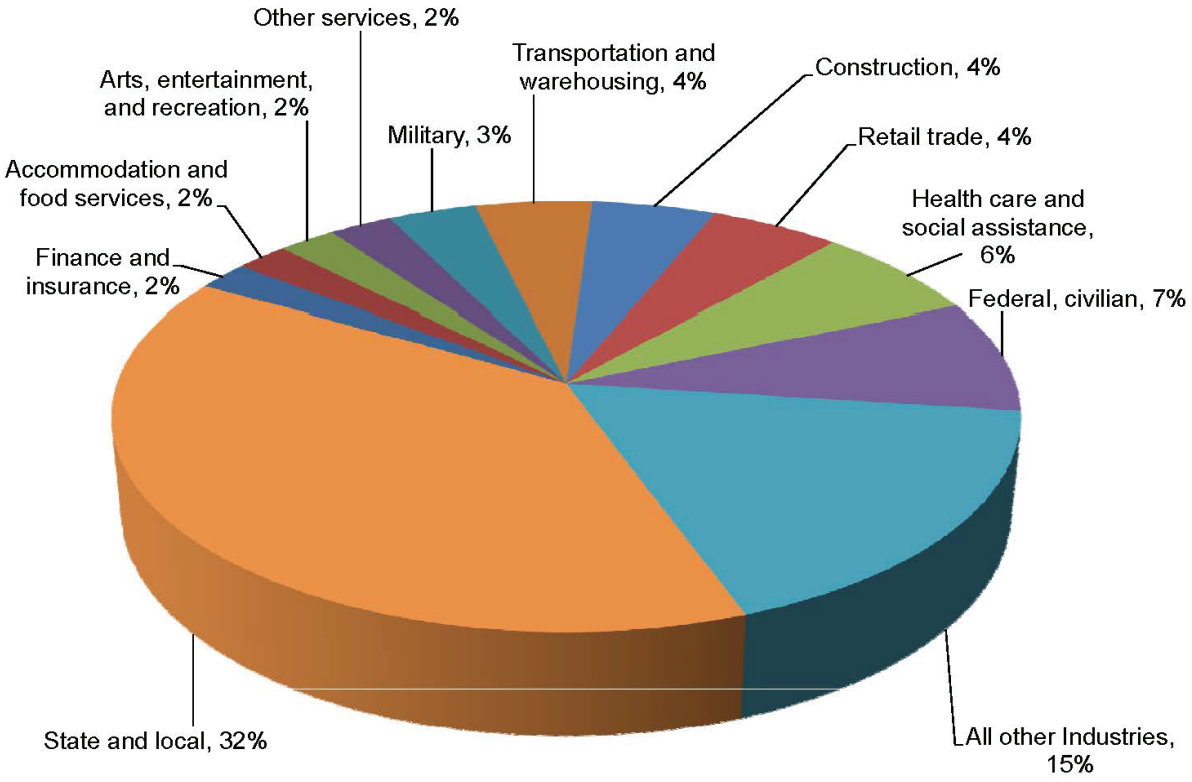
Personal Income Calculation		Amount
Personal income	**$**	**1,553,434,000**
Nonfarm Personal Income	$	1,248,583,000
Farm income	$	(3,445,000)
Population		31,409,000
Per Capita Income	**$**	**49,458,000**
Derivation of Total Personal Income		
Earnings by place of work	$	1,245,138,000
Less Personal contribution for social insurance	$	111,138,000
Plus Adjustment for residence	$	(23,670,000)
Equals Net earnings by place of residence	$	1,110,330,000
Plus Dividends, interest, and rent	$	244,029,000
Plus transfer payments	$	199,075,000
Equals Total Personal Income	$	1,553,434,000
Components of Earnings		
Wage and salary disbursements	$	865,043,000
Other Labor income	$	318,009,000
Proprietors' income	$	62,086,000
Farm proprietors' income	$	(5,372,000)
Nonfarm proprietors' income	$	67,458,000
Farm earnings	$	(3,445,000)
Earnings by place of work	$	1,245,138,000
Earnings by Industry		
Farm earnings	$	(3,445,000)
Nonfarm earnings	$	1,248,583,000
Private earnings	$	590,187,000
Forestry, fishing, and related activities		(D)
Mining		(D)
Utilities		(D)

Personal Income Calculation		**Amount**
Construction	$	66,056,000
Manufacturing	$	14,825,000
Durable goods manufacturing	$	2,424,000
Nondurable goods manufacturing	$	12,401,000
Wholesale trade		(D)
Retail trade	$	69,336,000
Transportation and warehousing	$	62,101,000
Information	$	15,025,000
Finance and insurance	$	27,266,000
Real estate and rental and leasing	$	14,436,000
Professional, scientific, and technical services		(D)
Educational services	$	886,000
Healthcare and social assistance	$	91,338,000
Arts, entertainment, and recreation	$	30,628,000
Accommodation and food services	$	28,353,000
Other services, except public administration	$	33,737,000
Government and government enterprises	$	658,396,000
Federal, civilian	$	108,703,000
Military	$	47,089,000
State and local	$	502,604,000

(D) Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

Source: BEA (2010).

Figure 2-9: City and Borough of Juneau Personal Income by Industry, 2010



Source: BEA (2010).

2.1.1.6 Basic Industries

Basic industries are those that draw income into the community from sources outside the local economy. Key basic industries for the CBJ are State government, federal government, mining, tourism, and seafood, including commercial fishing and seafood processing.

State Government

Government is by far the largest employer in Juneau, representing more than 40 percent of jobs, compared to the 25 percent government share of statewide employment. In particular, Juneau's position as the state capital of Alaska is not only a major source of identity for the community but its major economic activity as well. The ADOLWD reported that 4,272 workers were employed with State government in 2011 (Table 2-5). These workers earned $223 million in 2011, 27 percent of total wage and hourly earnings in the CBJ (see Table 2-3).

State government's role in the economy has declined since 1980 when the State accounted for nearly 36 percent of all Juneau employment. Total State employment increased from 3,877 jobs in 1980 to 4,272 in 2011, yet the State government accounted for 23.7 percent of Juneau employment in 2011.

Table 2-5: City and Borough of Juneau State Government Employment, Select Years, 1980–2011

Year	Total Juneau Employment	State Employment	Percent of Total Juneau Employment
1980	10,838	3,877	35.8
1990	13,772	4,535	32.9
1997	16,518	4,232	25.6
1998	16,461	4,237	25.7
1999	16,660	4,271	25.6
2000	17,047	4,288	25.2
2001	17,288	4,444	25.7
2002	17,331	4,541	26.2
2011	18,057	4,272	23.7

Source: ADOLWD (2012c).

Federal Government

Federal agencies provide services of national interest to the Southeast Alaska region and throughout the state. The Coast Guard is the largest federal employer in Juneau (350 uniformed and civilian workers), followed by the U.S. Forest Service (USFS; 198 jobs[1]), the National Oceanic and Atmospheric Administration (98 jobs), and others. Federal government employment declined from a high of almost 1,300 in the early 1990s to about 838 workers in 2011 (see Table 2-3). Federal government employment is important in Juneau because the jobs are stable, year-round, and pay about 88 percent more than the community average. Over the long term, federal employment is expected to remain reasonably stable, with growth in proportion to the state's population and economy.

Mining

The Greens Creek Mine operated by Hecla Mining Company is Juneau's single largest private sector employer. The mine employs 337 year-round employees. Located on Admiralty Island, the mine is one of the nation's largest silver producers. Greens Creek employees live in Juneau and commute to the mine on a daily basis. In 1996, Congress passed, and President Clinton signed into law, a land exchange with the USFS that provides Greens Creek with access and mineral rights to an additional 7,500 acres surrounding the property. In return, the USFS received private property equal to a value of $1 million. This land, which was previously closed to exploration, has good mineral potential and may extend Greens Creek's reserves and mine life. In 2012, Hecla Mining Company received approval to begin exploration for new ore deposits adjacent to the mine. The discovery of new ore deposits, together with expansion of the tailings disposal facility, could extend the life of the Greens Creek Mine an additional 30 to 50 years.

In addition, Juneau's mining industry grew by about 207 year-round employees and 38 contract employees in 2011 because of a new extraction operation at the Kensington Mine. The Kensington Gold Project is located approximately 45 air miles north of Juneau and is owned by Coeur d'Alene Mines Corporation. The mine site is within the CBJ and the Tongass National

[1] This includes the Regional Office, Admiralty Monument, Juneau Ranger District, and Pacific NW Research Station.

Forest. The Kensington Mine has an expected life of about 12 years, though additional ore discovery could extend the operating life of the mine.

Tourism

With 2,171 workers in 2011, tourism is responsible for much of Juneau's private sector employment (Juneau Economic Development Council [JEDC], 2012). Tourism, as a whole, is one of Juneau's largest generators of private-sector employment. The JDEC estimates that 1.3 million passengers disembarked in Juneau by airplane, cruise ship, or ferry in 2010. In addition to spending money on guided tours and excursions, these visitors spend money in restaurants, hotels, retail businesses, at art and entertainment businesses, and for transportation services. Because residents also spend considerable amounts at these same businesses, it is impossible to tell precisely how much total employment is attributable to visitors. One way to see the impact of tourism is an examination of the seasonal swings of employment in tourism related sectors. As an example, jobs in transportation in 2009 more than doubled from a low of 722 in January to a high of 1,505 in July. Jobs in arts, entertainment, and recreation also roughly doubled during that period, from 268 jobs to 527.

A 2000 McDowell Group study, using input-output modeling, estimated that the cruise industry generated 748 jobs and $15.2 million in payroll in Juneau in 1999 (McDowell Group, 2000). A 2001 McDowell Group study found that cruise passengers spend an average of $122 per person while in Juneau during their typical one-day stay. Airline passengers spend an average of $344 per person per trip, with an average 7.2 nights spent in Juneau (McDowell Group, 2001).

In general, the independent visitor market has been flat in Alaska over the last several years; however, some growth in Juneau's visitor industry has occurred. For example, employment in hotels increased by about 125 jobs between 1994 and 2001. Employment in Juneau's visitor industry in 2002 was estimated at about 1,650 jobs, with total annual payroll of approximately $30 million.

The tourism industry has been Juneau's fastest growing industry. Juneau cruise passenger volume has grown by more than a factor of 10 over the last 20 years, from 87,358 passengers in 1982 to almost 925,000 passengers in 2012. The Juneau Convention and Visitors Bureau (JCVB) estimates that between 100,000 and 150,000 visitors arrive annually by non-cruise modes of travel (JCVB, 2012).

The size and condition of Juneau's independent visitor market (those visitors arriving by air or ferry) is difficult to measure. The last survey research measuring independent visitor traffic to Juneau was in 1993. At that time 86,400 independent visitors came to Juneau. Trends in the independent market since 1993 are not well understood, but are reflected in airline and ferry arrival data. Between 1993 and 2011, airline passenger traffic increased by about 7 percent, while ferry passenger traffic increased by only 8 percent. During the same period, Juneau's population increased by about 12 percent. See Table 2-6 for a summary of airline and ferry passenger traffic between 1993 and 2011. The increase in air travel to Juneau is likely the result of a combination of increased resident travel (from population growth) and increased visitor arrivals. In any case, these data suggest only slow growth in Juneau's independent visitor market.

Table 2-6: Airline and Ferry Passenger Traffic to Juneau, 1993–2011

Year	Ferry Passengers	Airline Passengers
1993	69,683	200,066
1994	73,833	233,917
1995	72,074	246,620
1996	71,577	234,720
1997	68,552	235,402
1998	71,377	239,648
1999	80,660	243,414
2000	75,463	255,292
2001	64,334	258,615
2002	72,782	271,397
2003	67,640	279,945
2004	68,009	287,596
2005	66,618	294,738
2006	66,038	300,793
2007	74,540	309,283
2008	82,957	290,880
2009	73,189	264,073
2010	77,991	285,838
2011	76,027	291,215

Source: NEI using DOT&PF (2004), and AMHS (2012).

Note: Numbers are from disembarking ferry passengers and arriving jet passengers. Airline passenger data obtained from JIA manager's office.

Based on Alaska Visitor Statistics Program (AVSP) data (McDowell Group, 2012a), Alaska summer visitor traffic included an estimated 1.6 million out-of-state visitors between May 1 and September 30, 2011. Of these visitors, 883,000 were cruise ship passengers, 604,500 were air visitors (entered/exited the state by air), and 69,300 were highway/ferry visitors (entered/exited the state by highway or ferry). This total number of summer visitors represents an increase of 2 percent over summer 2010, but is 5 percent below summer 2006 volume and 9 percent below the peak year of 2007 (1.7 million summer visitors). The 2011 volume is 22 percent higher than the 2002 volume. The number of visitors arriving by highway or ferry has declined steadily, as has the number of cruise passengers; however, the number of air passengers has increased. Visitor volume is expected to rebound from its recession era slump.

The outlook for Juneau's independent visitor market, in the absence of improved transportation infrastructure, is also for slow growth. In summer 2011, Juneau was the most visited destination in the state at 61 percent of Alaska's independent visitor market, or 917,000 visitors. The same market capture rate has persisted, and will persist, in the absence of improved access to Juneau.

Juneau's visitor market includes a relatively small number of recreational vehicle (RV) travelers. In 2010, a total of 597 RVs disembarked in Juneau (this includes Juneau-resident-owned RV travel), according to AMHS data. That represents approximately 17 percent of AMHS RV traffic on Southeast Alaska (Gerrish, personal communication, 2012). Juneau's capacity to serve RVs is limited, but adequate to meet current demand. It includes 78 parking sites at private parks, plus up to 124 sites at the Mendenhall Campground (which are available for camping and RV parking).

Cruise Market Growth

Between 1991 and 1997, the number of cruise passengers arriving in Juneau grew at a rate of between 2 and 22 percent each year (lowest growth in 1995 to highest growth in 1994 and 1996). Between 1998 and 2005, the annual rate of growth slowed to between 5 and 14 percent (lowest growth in 1999 and 2003 and highest growth in 2004). Between 2006 and 2012, the rate of growth was minimal (0 to 4.8 percent) with a decline in 2009 and 2010. Table 2-7 shows Juneau Cruise Ship Passenger Traffic between 1982 and 2012. Several factors contributed to market growth, including:

- **Increased Juneau port capacity.** Private sector development of the South Franklin Street Dock and the Seadrome Marine Complex allowed Juneau to accommodate more ships during the summer season. Both facilities were online by the mid-1990s.
- **Increased Northwest port capacity.** Cruise ship berth and airlift constraints in Vancouver previously limited Alaska market growth. The development of three cruise ship piers in Seattle has nearly doubled capacity and simplified the logistics of moving people and luggage on and off ships.
- **Expanded summer season.** Until the early 1990s, cruise ship lines began their Alaska calls in the fourth week of May. The cruise industry, tour operators, and local marketing organizations worked together to expand the season into early May and late September. The additional weeks expanded overall port capacity by nearly 20 percent.
- **Increased vessel size.** The average passenger capacity of large cruise ships calling Juneau in 2003 was 1,646 passengers. In 1993, the average capacity was 1,060. The increased vessel size is the result of technological advances in the industry that allow cruise ships to increase overall vessel size without increasing the required draft. A 6 percent growth in vessel berth capacity was projected for 2012.
- **Redeployment of ships.** Following the terrorist activities in September 2001, several ships were redeployed to Alaska from other destinations, including Europe. Itinerary changes continued through the 2002 and 2003 summer seasons.

Table 2-7: Juneau Cruise Ship Passenger Traffic, 1982–2012

Year	Lines	Ships	Calls	Projected*	Actual**	Projected* % Change	Actual** % Change	Note
1982					87,358			
1983					99,706		14	
1984					118,570		19	
1985					161,973		37	
1986					181,422		12	
1987					200,410		10	
1988			269		203,517		2	
1989			227		193,813		-5	
1990	12	21	287		237,070		22	
1991	13	25	351		248,428		5	
1992	15	23	349		269,428		8	
1993	10	23	355		306,600		14	
1994	14	30	418		372,923		22	
1995	17	34	464		380,529		2	
1996	18	34	487		464,484		22	
1997	15	36	549	513,181	524,842		13	
1998	14	38	547	568,348	568,524	11	8	
1999	13	36	565	591,958	595,959	4	5	
2000	17	40	543	632,265	640,477	7	7	
2001	16	41	539	683,077	690,648	8	8	
2002	14	39	555	718,747	741,512	5	7	
2003	18	44	581	771,857	776,991	7	5	(with small ship approx. 11,075)
2004	15	40	580	850,703	883,572	10	14	(with small ship approx. 12,000)
2005	14	42	586	915,000	949,601	8	7	(includes small ship and non-rev pass)
2006	13	37	613	919,893	953,009	1	0.4	
2007	11	40	646	957,000	999,052	4	4.8	
2008	11	40	647	969,354	1,032,274	1	3.3	
2009	13	38	581	962,573	1,020,706	-1	-1.1	
2010	14	31	496	825,916	875,593	-14	-14.2	(includes small ship and non-rev passengers)
2011				816,188	875,900	-1	0.0	
2012	12	30	469	857,000	Est. 925,000			

*Projected numbers are based on 2-person lower berth capacity.

** Actual numbers are based on total persons in cabins.

Source: JCVB (2012).

Seafood Industry

The seafood industry, including commercial fishing and seafood processing, represents a substantial component of Juneau's economy. Juneau's commercial fishing fleet harvests a wide variety of seafood including salmon, halibut, black cod, rockfish, shrimp, crab, herring, and groundfish. Most permit holders fish in Southeast Alaska, but permit holders also fish elsewhere in the state, such as Bristol Bay. The processing sector includes several smokeries and fresh fish buyers. Juneau grocery stores and restaurants also buy a substantial volume of seafood from local fishermen. Direct sales from fishermen to consumers are common as well.

According to Alaska Commercial Fisheries Entry Commission (CFEC) 2010 data, 315 Juneau-based commercial fishermen fished 313 permits and harvested 15.8 million pounds of fish with an estimated gross income of $16.9 million. Earnings per permit fished averaged $53,967. Salmon comprised the majority of the landed fish at 11.1 million pounds, followed by halibut at 1.2 million pounds. Crab landings totaled more than 600,000 pounds for the year and landed sablefish were 470,541 pounds. Smaller quantities of herring, other groundfish, and other shellfish were also landed. Seafood prices have generally been favorable in recent years, and though it is difficult to predict fishery success, the industry remains a sustainable and important source of income in the area.

The Douglas Island Pink and Chum (DIPAC) salmon enhancement program is also an important part of Juneau's commercial seafood, sport fish, and tourism industries. The private nonprofit salmon hatchery currently produces four species of Pacific salmon: chum, sockeye, Chinook, and coho—from two hatchery facilities and several remote release sites. Chum and sockeye are produced for commercial fleets operating in northern Southeast Alaska, while Chinook and coho are produced primarily for the Juneau, Haines and Skagway sport fishing fleets (McDowell Group, 2009). In 2008, DIPAC generated an average of 42 jobs, including staff at both the Macaulay and Snettisham hatcheries, with total payroll of approximately $1.4 million annually (McDowell Group, 2009).

Based on 2011 data, approximately 760 Juneau residents fish commercially, as permit holders or crew, landing 22.7 million pounds of fish with a value of $26.4 million. According to the JEDC, eight shore-based seafood processing facilities in Juneau processed 15.9 million pounds of product, with a wholesale value of $50.3 million in 2011 (JEDC, 2012).

2.1.1.7 Support Sector Industries

Support sector industries are those that provide services to local residents and businesses. Industries such as local government, retail trade, healthcare services, and transportation fall in this category.

Local Government

Local government accounted for 2,272 jobs in Juneau in 2011, 12.6 percent of all employment and a 185-job increase from the 2,087 jobs in 2002. This includes employment associated with city government administration, the school district, and Bartlett Regional Hospital. Local government accounted for $110 million in annual earnings in 2011, a $30 million increase from the $80 million annual earnings in 2002.

Retail Trade

The private industry with the highest employment is retail trade, with an average employment of 1,994 workers earning a total annual payroll of $52 million in 2011. Large retail chain stores, such as Fred Meyer, Walmart, and Safeway, are among the top 10 private employers. Retail trade in Juneau includes both basic and support sector industry activities. The basic industry component offers retail goods to visitors to the community. The retail trade support sector is composed of businesses offering goods to Juneau's resident population.

Healthcare Services

The health services industry, as with retail trade, serves both basic and support industry functions. The healthcare and social assistance industry had average annual employment of 1,797 in 2011, representing about 10 percent of the wage and hour employment in the area and $65 million in annual payroll. Healthcare providers and social service networks are also some of the largest employers in Juneau, making up 4 of the 10 largest firms. Many healthcare and social services organizations provide services to residents of outlying communities as well as the Juneau resident population. The largest healthcare provider in the region is the Southeast Alaska Regional Health Consortium (SEARHC). SEARHC is a non-profit tribal consortium that provides health and wellness services to Native Alaskans and their families. SEARHC has approximately 200 employees in Juneau.

The Bartlett Regional Hospital in Juneau is the region's next largest healthcare provider. The hospital has a staff of 407 full-time equivalent employees. Bartlett is considered part of local government in employment statistics.

Transportation

The CBJ is a transportation hub for all of Southeast Alaska (Abrahamson, 2011). Alaska Airlines provides direct jet service to and from Seattle, Anchorage, Sitka, Ketchikan, Wrangell, Petersburg, and Yakutat. Local air carriers serve the region's smaller communities, and the AMHS transports people and freight to destinations as far flung as Bellingham and Dutch Harbor (Abrahamson, 2011).

Juneau has four major harbors in addition to several boat launch facilities. The CBJ operates two cruise ship docks. A third dock is privately owned, with a fourth private facility planned for next season. The AMHS terminal is located at Auke Bay, approximately 13 miles north of downtown Juneau and 3 miles from the airport. Juneau International Airport (JIA) accommodates passenger and cargo jets and a large number of commuter, charter, and private aircraft. The airport includes a pond for float planes.

Juneau's transportation sector, including air, water, trucking, and warehousing, generated employment of 1,052 and payroll of $40 million in 2011. Air transportation alone account for 380 of those jobs. The transportation industry provides services to residents and non-residents and is heavily influenced by visitors traveling to, from, and within Juneau. Juneau is unique in that the population must rely upon air or water-borne transportation services to enter and exit the community. With limited access options, the transportation industry in Juneau is a critical component of the economy. This sector will also continue to grow according to the demands of the local population and growth in the visitor industry.

Water transportation is the primary method of moving freight to and from Juneau, with Seattle being the primary port of origin and destination. Juneau currently has two times weekly service from Seattle, with barges arriving every Monday and Wednesday from Alaska Marine Lines (AML). Juneau also receives regular fuel barge service. According to the Department of the Army Corps of Engineers report *Waterborne Commerce of the United States for Calendar Year 2010*, total imports at Juneau Harbor included 28,969 tons of groceries, 6,068 tons of lumber and wood products, and 65,591 tons of manufactured equipment, machinery, and products (such as vehicles, boats, machinery, etc.). Juneau also imported 92,338 tons of petroleum products. Outbound freight leaving Juneau by barge included 16,071 tons of alcoholic beverages, 5,886 tons of fish, and 1,194 tons of groceries. The largest categories for outbound freight were manufactured equipment and machinery (34,142 tons) and food and farm products (27,172 tons) (USACE, 2010).

JIA has played an important role in the past development of Juneau and will play an even more important role in future development. Air transportation in Juneau is critical for the movement of goods and people. Much of the commerce in Juneau passes through the airport as cargo or as business people traveling to or from the capital city. Further, the airport serves as a hub for northern Southeast Alaska. In 2009, approximately 18 million pounds of airfreight was shipped to and from Juneau. These totals include 8.8 million pounds of mail shipped in and out of Juneau (NEI and Parametrix, 2011). These totals include freight shipped by Alaska Airlines, Evergreen and Empire Air. These totals do not include freight shipped to and from Juneau by local air taxi operators.

2.1.1.8 Housing and Real Estate

According to the CBJ Community Development Department, there were 13,057 housing units in the community in 2011, with a vacancy rate of 5 percent. Single-family homes comprise 58 percent of Juneau's housing inventory, while multi-family and condominiums/townhouses make up another 34.5 percent (see Table 2-8).

Table 2-8: City and Borough of Juneau Housing Assessment, 2009–2011

Housing Type	Total Units	Percent of Total	Vacancy Rate	Occupied Units
Single Family (Detached/ Attached)	7,563 (+/- 743)	58%	2.7% (~ 357)	7,206 (+/- 1032)
Multi-Family (including condos/townhomes)	4,502 (+/- 1,199)	34.5%	1.75% (~229)	4,273 (+/- 1555)
Mobile Homes	934 (+/- 196)	7%	0.46% (~60)	874 (+/- 352)
RVs/ Boats/ etc.	58 (+/-61)	0.5%	0%	58 (+/- 68)
Total	**13,057 (+/- 136)**	**100%**	**5% 646 (+/- 243)**	**95% 12,411 (+/-243)**

Source: ADOLWD (2011b).

As of 2011, there were 32,290 people living in the CBJ. Population projections for the year 2050 predict a population decrease of 210 to 32,080. Therefore, it is predicted that no additional housing would be needed.

Real property valuations as of January 1, 2011, were $3.8 billion for all real property in the CBJ (locally assessed value; ADCCED, 2011).

2.1.1.9 Municipal Revenues and Expenditures

The 2010 Comprehensive Annual Financial Report for the CBJ reports total revenues of approximately $134 million. The majority of general fund revenues collected by the CBJ are derived from taxes (60.9 percent of 2010 total revenues; see Table 2-9). Most State of Alaska revenue is for public school funding.

The CBJ has a mill rate that ranges from 8.23 (for residents off the road system with no fire protection) to 10.51. Real property taxes generated almost $41 million in 2010. The CBJ assesses a 5 percent sales tax, which generated approximately $38 million in 2010. A 7 percent bed tax (based on gross room receipts), a 3 percent liquor tax, and a $1 per pack tobacco tax contributed another $2.9 million for 2010 (ADCCED, 2010).

Table 2-9: City and Borough of Juneau Municipal Revenues, 2010

Source of Funds	Revenue Amount ($)	Percent of Revenue Base
Taxes	81,627,008	60.9
State sources	23,636,855	17.6
Licenses, permits, and fees	10,397,941	7.8
Federal sources	5,877,007	4.4
Investment and interest income	4,653,977	3.5
Charges for services	3,613,972	2.7
Local sources	1,000,878	0.7
Fines and forfeitures	818,189	0.6
Contracted services	483,100	0.4
Rentals	401,198	0.3
Land sales	301,506	0.2
Special assessments	124,407	0.1
Other	1,008,339	0.8
Total revenues	**133,944,377**	**100.0**

Source: CBJ (2010a).

About 35 percent of budget expenditures for the CBJ in 2010 were allocated to Bartlett Regional Hospital, and another 13 percent to education. Public works and public safety accounted for 14 percent of municipal expenditures. The remaining budget is split between other programs ranging from debt service to administration (see Table 2-10).

Table 2-10: City and Borough of Juneau Municipal Expenditures, 2010

Program Expenses	Expenses ($)	Percent of Total Expenses
Education	25,632,800	16.1
Public safety	19,150,232	12.4
Public works	7,504,271	4.9
Recreation	6,295,881	4.1
Public transportation	5,751,267	3.7
Community development and lands management	3,476,588	2.3
Administration	3,816,268	2.5
Finance	3,538,679	2.3
Libraries	2,261,970	1.5
Tourism and conventions	1,879,013	1.2
Legislative	3,199,967	2.1
Legal	1,521,167	1.0
Engineering	661,098	0.4
Affordable housing	100,000	0.1
Special assessments	135,068	0.1
Other	288,426	0.2
Debt Service	18,601,207	12.1
Capital Projects	50,473,977	32.7
Total expenditures	**154,287,879**	**100.0**

Source: CBJ (2010a).

2.1.2 Haines Borough

Following is an overview of the Haines Borough[2] area economy, including past trends and current economic conditions. The Haines area population is predicted through 2050.

2.1.2.1 Demographics

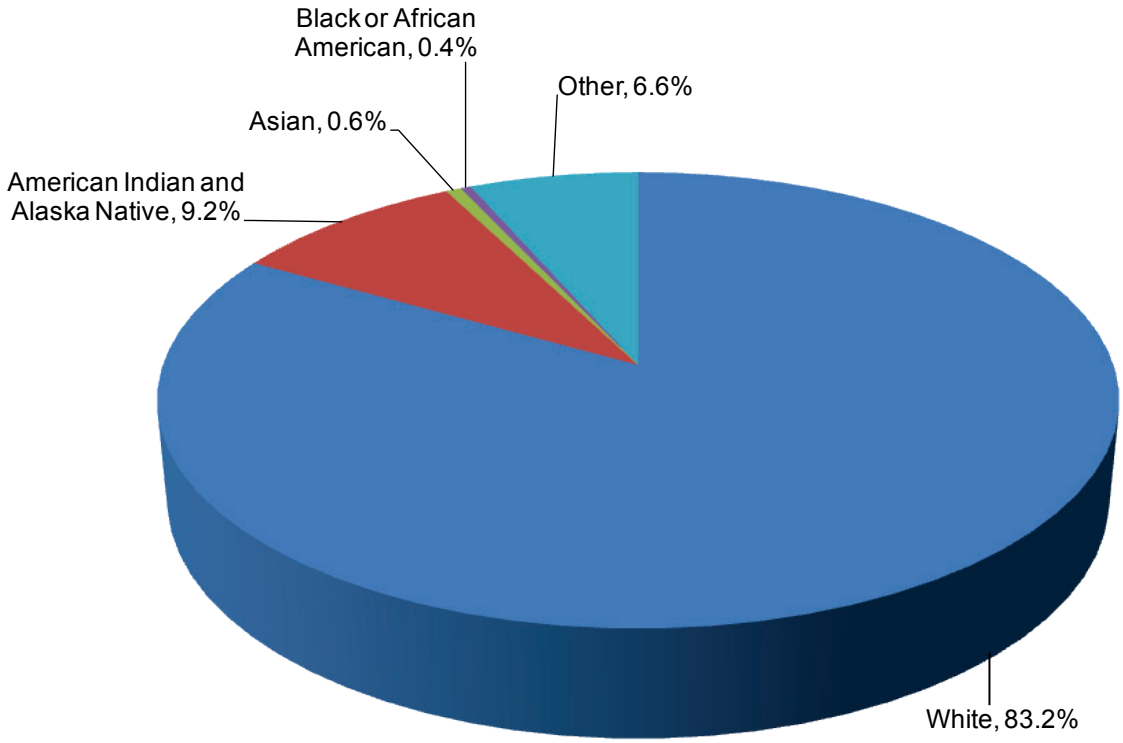
The 2010 Census counted 2,508 individuals living in the Haines Borough, averaging 3.4 persons per household. More than three-fourths (80 percent) of the individuals in Haines are 18 years of age or older (2,009 individuals). Males outnumber females slightly, 50.8 percent to 49.2 percent, respectively. In comparison, the 2000 Census counted 2,392 individuals living in the Haines Borough, averaging 2.4 persons per household. Approximately three-fourths (74 percent) of the

[2] In this section of the document, Haines refers to the Haines Borough, not the city of Haines.

individuals in Haines were 18 years of age or older (1,779 individuals). Males outnumbered females slightly, 50.6 percent to 49.4 percent, respectively.

According to the 2010 Census, 83.2 percent of Haines's population is White and 9.2 percent is American Indian and Alaska Native. Another 0.6 percent is Asian, and the rest are Native Hawaiian and Other Pacific Islander, Black or African American, or some other race (see Figure 2-10). According to the 2000 Census, 83 percent of Haines's population was White and 15 percent was American Indian and Alaska Native. Another 1 percent was Asian, and the rest were Native Hawaiian and Other Pacific Islander, Black or African American, or some other race.

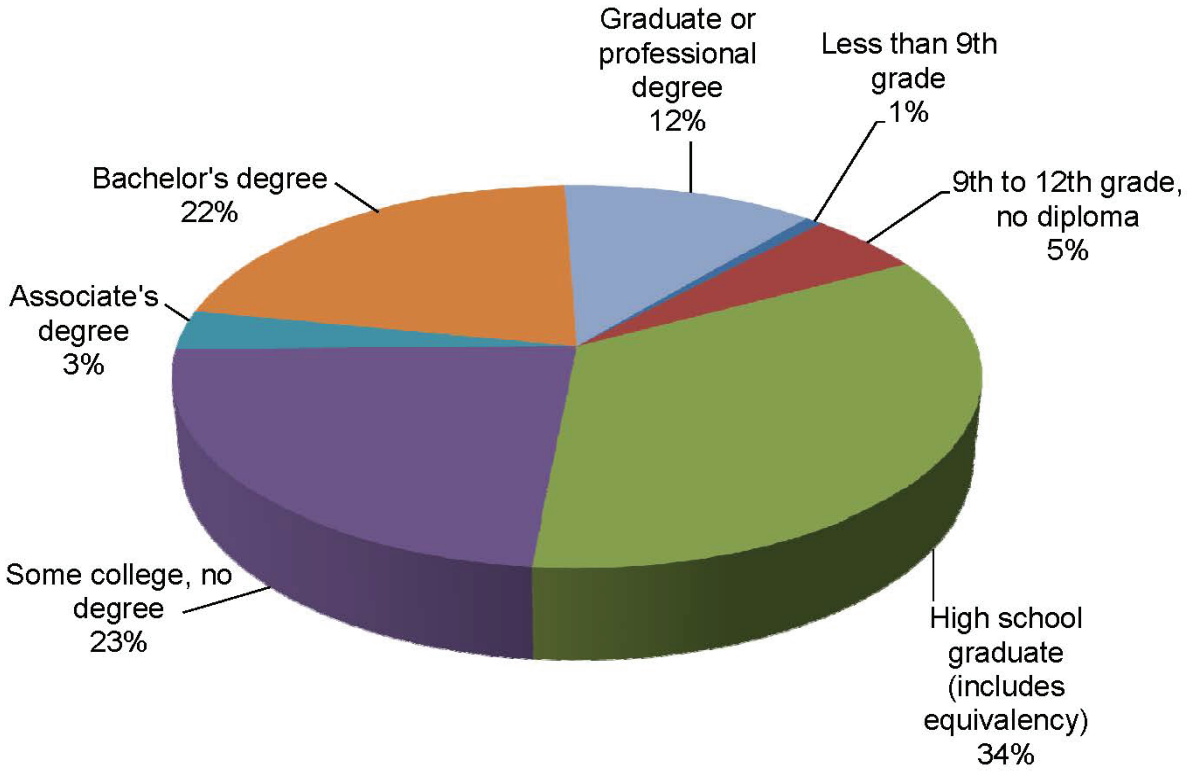
Figure 2-10: Haines Borough Racial Composition of Population, 2010



Source: U.S. Census Bureau (2010a).

Educational achievement data indicate that 94 percent of Haines residents have completed high school. More than 36 percent of the local population holds at least an associate's degree and 34 percent holds a bachelor's degree or higher (see Figure 2-11). This compares to the 1990 Census, when 23 percent of the population had at least an associate's degree and 17 percent held a bachelor's degree or higher, and the 2000 Census, when 30 percent of the population had at least an associate's degree and 23 percent held a bachelor's degree or higher.

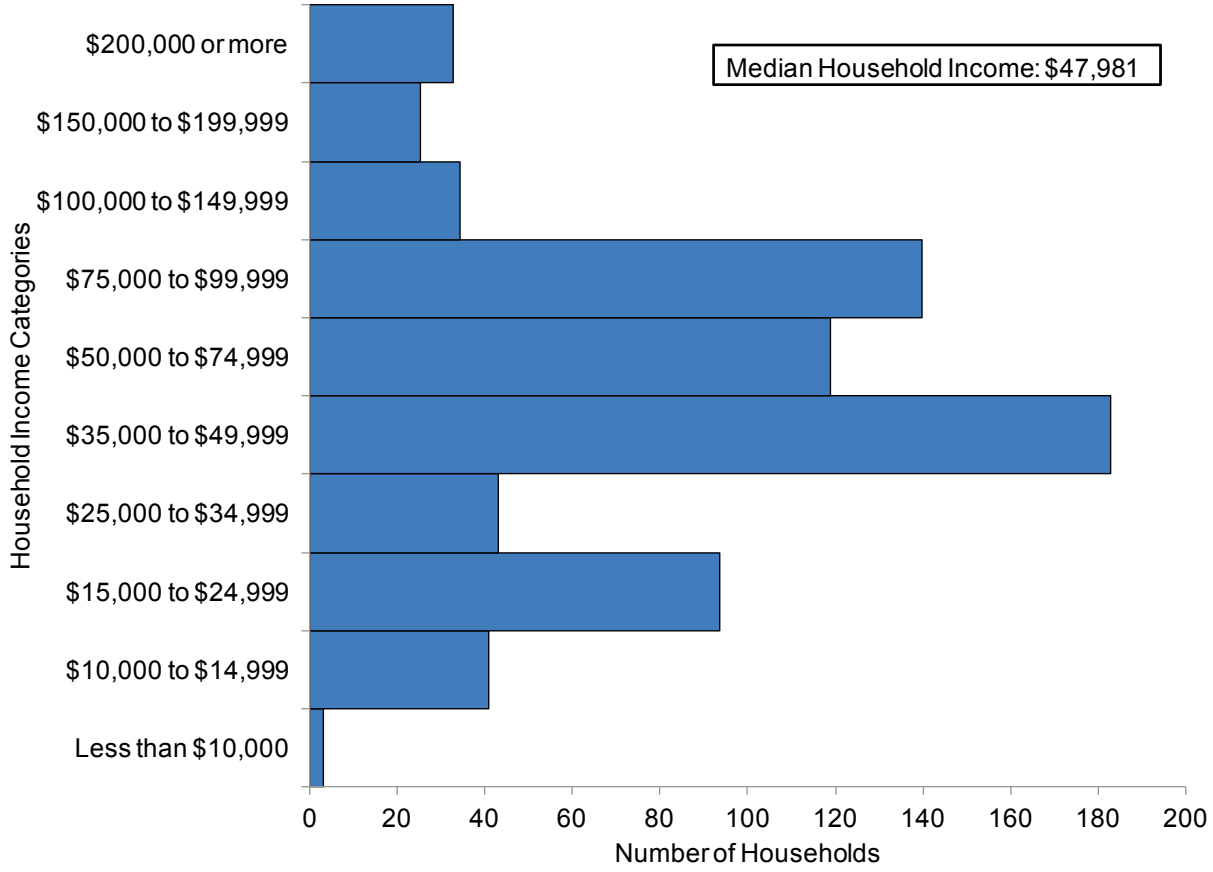
Figure 2-11: Haines Borough Educational Attainment of Population, 2010



Source: U.S. Census Bureau (2010a).

There were 744 households counted in Haines in the 2010 American Community Survey. Among Haines households, more than 18 percent had incomes less than $25,000 (in 2010) and 14.4 percent of all Haines residents had incomes below the poverty line in 2010. Forty-seven (47) percent of Haines households had incomes of more than $50,000, with 31 percent earning $75,000 and more. Median household income was $47,981 (see Figure 2-12) and per capita income was $27,979. In comparison, the 2000 Census included 985 households. More than 30 percent of households had incomes less than $25,000 and 11 percent of all Haines residents had incomes below the poverty line. Forty-one percent of Haines households had incomes of more than $50,000, with 21 percent earning $75,000 and more. Median household income was $40,772 and per capita income was $22,090.

Figure 2-12: Haines Borough Annual Household Income, 2010



Source: U.S. Census Bureau (2010b).

2.1.2.2 Population

According to ADOLWD estimates, the Haines Borough population totaled 2,620 residents in 2011. The population of Haines has grown at an average annual rate of 1.4 percent since 1980. In particular, the local population increased over the previous 5 years, from 2,357 in 2006 to 2,620 in 2011. Average annual population growth in the last 10 years from 2001 through 2011 was 0.9 percent (see Table 2-11).

Historically, Tlingit Indians were the original inhabitants of the Chilkat Valley (Haines Chamber of Commerce, N.d.). These Alaska Natives controlled the trade routes between the coast and the interior. In the late 1800s, Sheldon Jackson, a Presbyterian missionary in Sitka, was asked by the Tlingits to build schools for each of the local villages. In 1879, missionary S. Hall Young and naturalist John Muir traveled to Yendustucky (the village near Haines airport), where the site for a mission was chosen. The area was known as Dei Shu meaning "end of the trail." It was later renamed Haines in honor of the Secretary of the Presbyterian Women's Executive Society of Home Missions, Mrs. F.E. Haines, who had raised funds for the mission.

Well-known historical figure and entrepreneur Jack Dalton, following the Tlingit trade route, established a freight trail to the gold fields of the interior during the mid-1890s. The Dalton Trail, as it became known, reached over the Chilkat Pass and followed the same general route now driven on the Haines Highway. At the beginning of the Klondike Gold Rush, Haines grew as a mining supply center. When the U.S.-Canada boundary dispute heated up during the Klondike Gold Rush, Fort William H. Seward was commissioned as a military presence. Garrisoned in 1903, the Army post became a major component of Haines' economy until it was deactivated after World War II. Today, the Army post is a National Historic Landmark.

Table 2-11: Haines Borough Historical Population, 1980–2011

Year	Population	Annual Number Change	Annual Percent Change	5-Year Rate of Change	10-Year Rate of Change	20-Year Rate of Change
1980	1,680					
1981	1,803	123	7.3			
1982	1,886	83	4.6			
1983	1,950	64	3.4			
1984	2,051	101	5.2			
1985	2,034	(17)	-0.8			
1986	2,036	2	0.1	2.5%		
1987	1,971	(65)	-3.2			
1988	1,956	(15)	-0.8			
1989	2,058	102	5.2			
1990	2,117	59	2.9			
1991	2,242	125	5.9	1.9%	2.2%	
1992	2,230	(12)	-0.5			
1993	2,293	63	2.8			
1994	2,331	38	1.7			
1995	2,280	(51)	-2.2			
1996	2,352	72	3.2	1.0%	1.5%	
1997	2,404	52	2.2			
1998	2,461	57	2.4			
1999	2,475	14	0.6			
2000	2,392	(83)	-3.4			
2001	2,405	13	0.5	0.4%	0.7%	1.5%
2002	2,412	7	0.3			
2003	2,391	(21)	-0.9			
2004	2,343	(48)	-2.0			
2005	2,312	(31)	-1.3			
2006	2,357	45	1.9	-0.4%	0.0%	0.7%
2007	2,387	30	1.3			
2008	2,464	77	3.2			
2009	2,453	(11)	-0.4			
2010	2,508	55	2.2			
2011	2,620	112	4.5	2.1%	0.9%	0.8%

Source: Table developed by NEI using population data from ADOLWD.

2.1.2.3 Population Forecast

The population of Haines has grown slightly in the past 10 years, with an annual average growth rate of 0.9 percent. During the 2012 cruise season (May–September), 30,991 cruise passengers visited Haines, along with some 13,388 crew members. These visits are down from 41,770 passengers in 2008 (HCVB, 2012). The seafood industry in Haines has been struggling with weak salmon prices, and the timber industry, once a mainstay of the local economy, is essentially non-existent. The only real growth in Haines is in the retirement community. Retirees are moving to Haines based on lifestyle decisions rather than local economic opportunities.

Within this relatively unstable economic environment, it is particularly difficult to predict population growth in the short-term, let alone over the next 40 years. NEI developed low-, medium-, and high-case population forecasts using historical rates of population. The medium case is an average resulting from a logarithmic regression using historic data trends. By 2050, Haines' population would reach about 2,067 in the low case, 2,613 in the medium case, and 3,159 in the high case. These projections are illustrated in Table 2-12 and Figure 2-13. For further information regarding population forecasts for cities and Census-Designated Places (CDP) in the Haines Borough by year, see Appendix B (AMHS Lynn Canal Market Data and Population Forecast) of Appendix AA (2014 *Traffic Forecast Report*) of the JAI Project Draft SEIS.

Table 2-12: Population Forecasts for the Haines Borough, 2012–2050

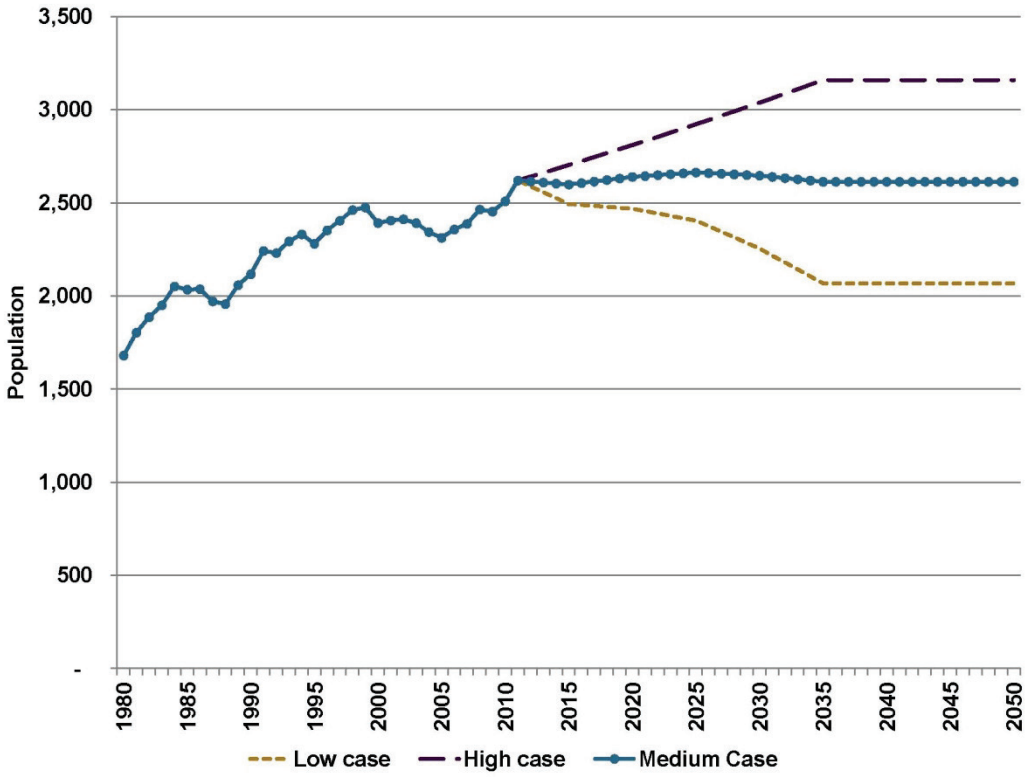
Year	Mid-Range Population Forecast	Annual Number Change	Annual Percent Change	Low-End Population Forecast	High-End Population Forecast
2012	2,614			2,588	2,640
2013	2,609	(6)	-0.2	2,557	2,661
2014	2,603	(5)	-0.2	2,525	2,682
2015	2,598	(5)	-0.2	2,493	2,703
2016	2,606	8	0.3	2,488	2,724
2017	2,614	8	0.3	2,483	2,745
2018	2,623	8	0.3	2,478	2,767
2019	2,631	8	0.3	2,473	2,788
2020	2,639	8	0.3	2,468	2,810
2021	2,644	5	0.2	2,455	2,832
2022	2,649	5	0.2	2,443	2,854
2023	2,653	5	0.2	2,430	2,877
2024	2,658	5	0.2	2,417	2,899
2025	2,663	5	0.2	2,404	2,922
2026	2,660	(3)	-0.1	2,374	2,945
2027	2,656	(3)	-0.1	2,345	2,968
2028	2,653	(3)	-0.1	2,315	2,991
2029	2,649	(3)	-0.1	2,284	3,014
2030	2,646	(3)	-0.1	2,254	3,038
2031	2,639	(7)	-0.3	2,217	3,062
2032	2,633	(7)	-0.3	2,180	3,086
2033	2,626	(7)	-0.3	2,142	3,110
2034	2,620	(7)	-0.3	2,105	3,134
2035	2,613	(7)	-0.3	2,067	3,159
2036	2,613	-	0.0	2,067	3,159
2037	2,613	-	0.0	2,067	3,159
2038	2,613	-	0.0	2,067	3,159
2039	2,613	-	0.0	2,067	3,159
2040	2,613	-	0.0	2,067	3,159
2041	2,613	-	0.0	2,067	3,159
2042	2,613	-	0.0	2,067	3,159
2043	2,613	-	0.0	2,067	3,159
2044	2,613	-	0.0	2,067	3,159
2045	2,613	-	0.0	2,067	3,159
2046	2,613	-	0.0	2,067	3,159

Year	Mid-Range Population Forecast	Annual Number Change	Annual Percent Change	Low-End Population Forecast	High-End Population Forecast
2047	2,613	-	0.0	2,067	3,159
2048	2,613	-	0.0	2,067	3,159
2049	2,613	-	0.0	2,067	3,159
2050	2,613	-	0.0	2,067	3,159

Note: For 2012–2035 the high-end population forecast uses an annual rate of change of -0.78 percent (equal to the 20-year rate of change through 2011). The low-end population forecast is projected using the difference between the mid-range and the high-end forecasts. As the ADOLWD forecast only goes to 2035, forecasts for the years 2036-2050 will be a continuation of the forecast for the year 2035 with a zero percent growth rate.

Source: Table developed by NEI using population forecasts from ADOLWD.

Figure 2-13: Historical and Forecast Population for the Haines Borough



Note: For 2012–2035 the high-end population uses an annual rate of change of 0.78 percent (equal to the 20-year rate of change through 2011). The low-end population forecast is projected using the difference between the mid-range and the high-end forecasts.

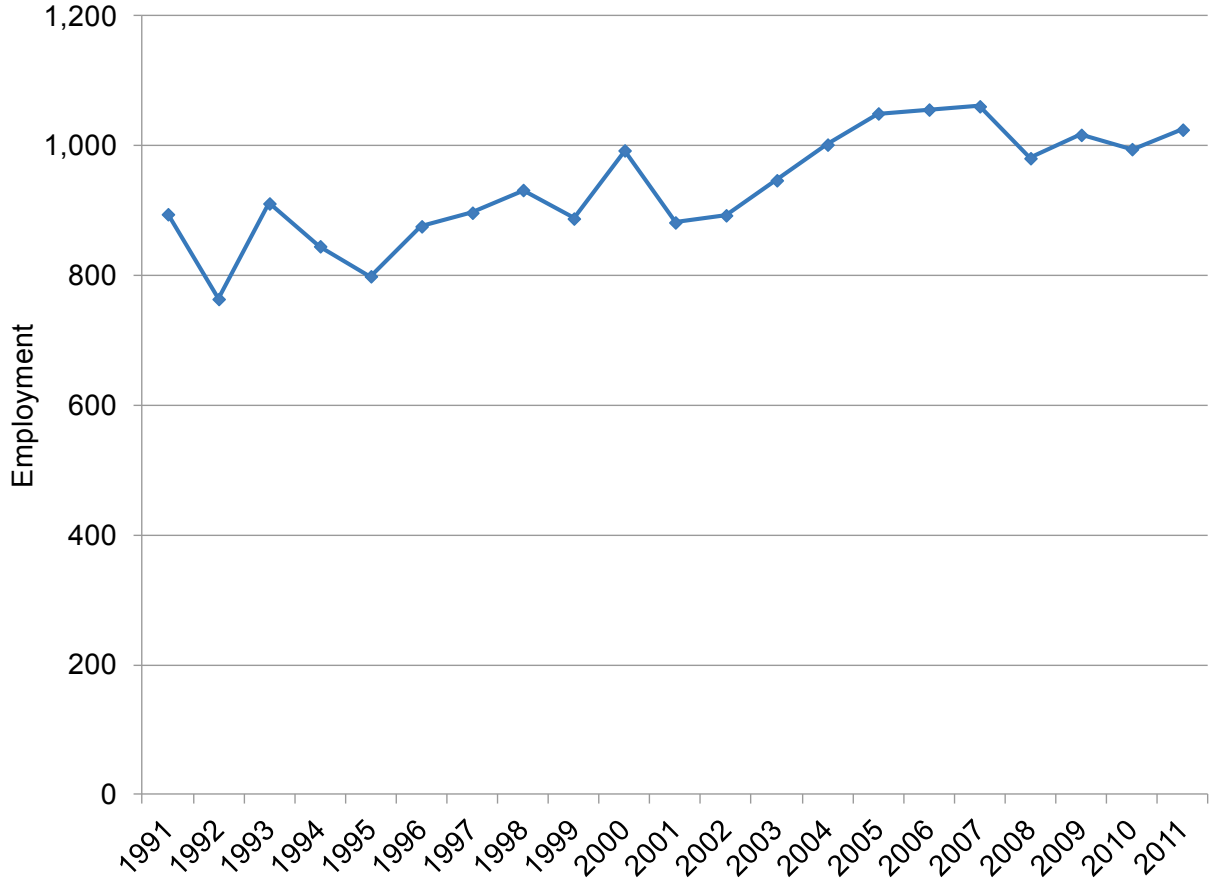
Source: Figure developed by NEI using population data and forecasts from ADOLWD.

2.1.2.4 Employment and Payroll

In 2011, the Haines economy included an annual average of 1,025 jobs (not including self-employed individuals) and $33.3 million in wages. Employment grew by 79 percent from 1980 to 2011. This is an annual average rate of growth of 1.9 percent.

Haines area employment for 1991 through 2011 is illustrated in Figure 2-14. Reporting errors may have compromised the quality of the employment data during the 1980s, so these years have not been shown. Haines area employment has increased overall since 2000, with the addition of 32 jobs.

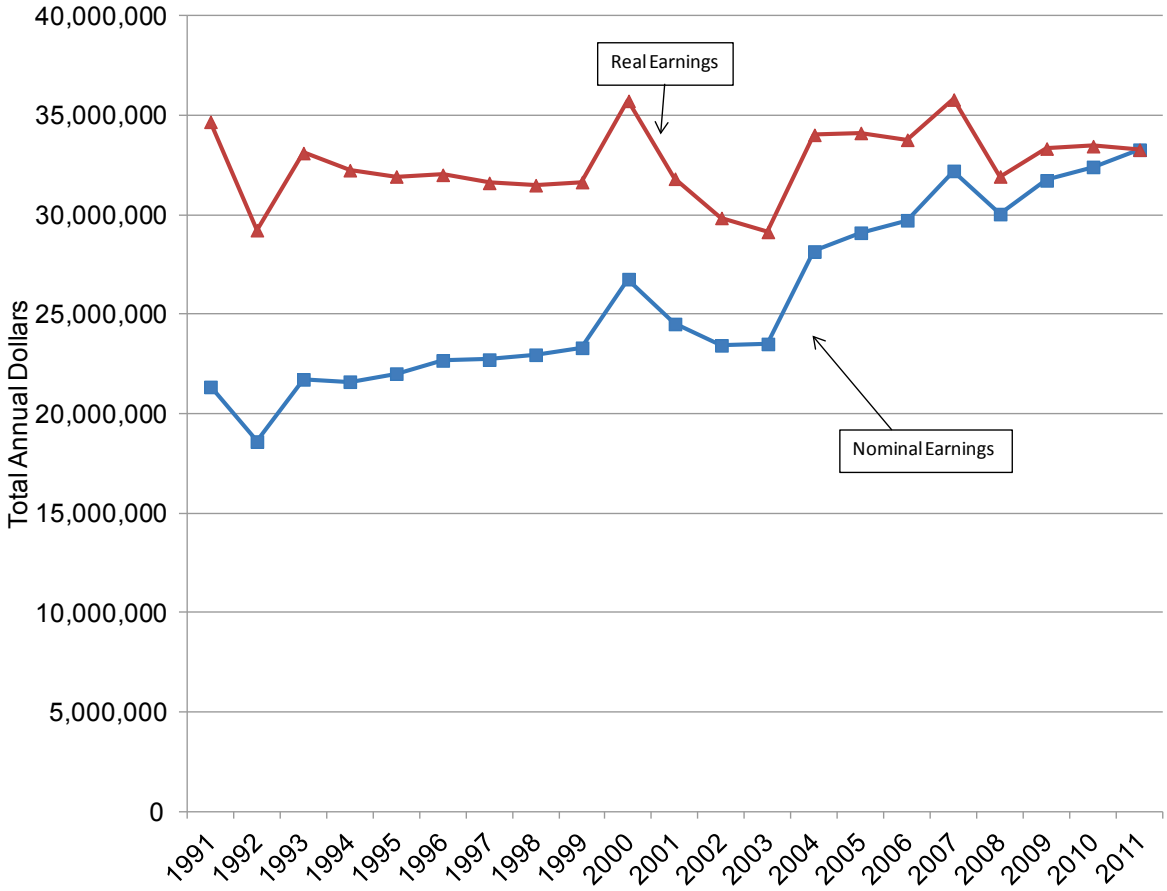
Figure 2-14: Haines Borough Average Annual Employment, 1991–2011



Source: ADOLWD (2012c).

Total Haines earnings (in 2011 dollars) decreased by 4.1 percent, from $34.7 million to $33.3 million, between 1991 and 2011. The average annual rate of decline for total earnings was approximately 0.1 percent during this 20-year period. Figure 2-15 depicts real and nominal wage and hourly earnings from 1991 through 2011.

Figure 2-15: Haines Borough Total Annual Payroll (Real and Nominal Dollars), 1991–2011



Source: ADOLWD (2012c). Conversion to real dollars (CPI-U Anchorage) was calculated by NEI.
Note: ADOLWD did not report employment data for 1990. The employment number for 1990 is the average of 1989 and 1991.

In terms of employment, the largest sector in the Haines economy is local government, with 152 jobs and almost $4.8 million in annual payroll in 2011. Retail trade accounted for 140 jobs, with $3.2 million in payroll. See Table 2-13 for a summary of 2011 employment for the Haines Borough.

The construction sector had average employment of 91 jobs, with $6.6 million in payroll. Leisure and hospitality jobs peaked at 370 in August of 2011, while offering 206 average annual jobs with annual payroll of nearly $3.8 million.

Table 2-13: Haines Borough Industry Employment and Earnings, 2011

	Average Monthly Employment	Percent of Total Employment	Total Annual Earnings	Percent of Total Annual Earnings
TOTAL INDUSTRIES	1,025	100.0	33,271,577	100.0
Total Government	208	20.3	7,909,717	23.8
Federal Government	12	1.2	1,068,123	3.2
State Government	45	4.4	2,046,260	6.2
Local Government	152	14.8	4,795,334	14.4
Private Ownership	817	79.7	25,361,860	76.2
GOODS-PRODUCING	202	19.7	10,732,133	32.3
Construction	91	8.9	6,610,115	19.9
Construction of Buildings	*		*	
Heavy Construction	*		*	
Specialty Trade Contractors	20	2.0	779,743	2.3
Manufacturing	*		*	
Food	*		*	
SERVICE-PROVIDING	615	60.0	14,629,726	44.0
Trade, Trans., & Utilities	181	17.7	4,752,397	14.3
Retail Trade	140	13.7	3,201,092	9.6
Building Material & Garden	17	1.7	544,924	1.6
Food & Beverages	61	6.0	1,288,083	3.9
Miscellaneous	8	0.8	152,960	0.5
Transportation & Warehousing	*		*	
Air Transportation	*		*	
Water Transportation	*		*	
Information	16	1.6	322,094	1.0
Publishing, except Internet	*		*	
Broadcasting, except Internet	*		*	
Telecommunications	*		*	
Financial Activities	*		*	
Finance & Insurance	*		*	
Credit Intermediation, etc.	*		*	
Real Estate, Rental & Leasing	*		*	
Real Estate	*		*	
Professional & Business Svcs.	19	1.9	397,556	1.2
Administrative & Waste Svcs.	*		*	
Administrative & Support Svcs.	*		*	

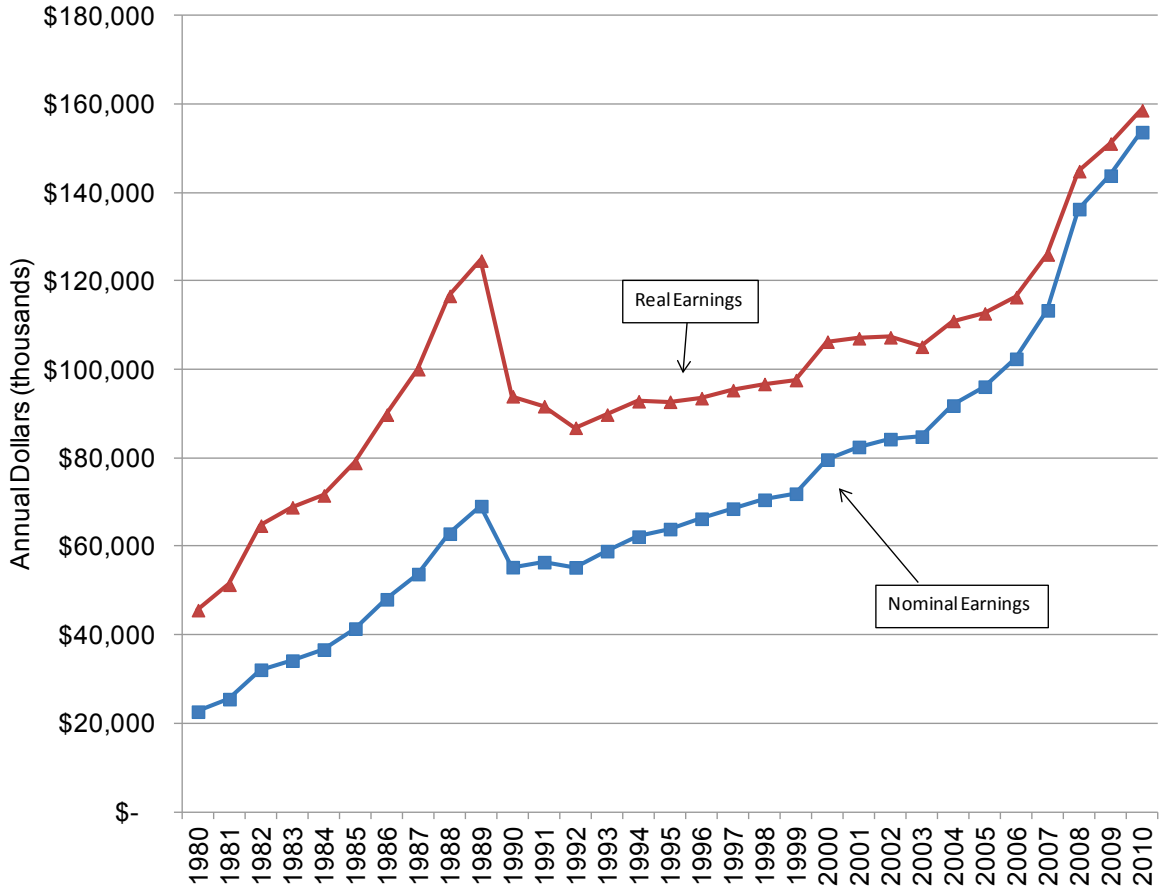
	Average Monthly Employment	Percent of Total Employment	Total Annual Earnings	Percent of Total Annual Earnings
Waste Management/Remediation	8	0.8	193,172	0.6
Educational & Health Svcs.	137	13.4	4,242,577	12.8
Healthcare & Social Assistance	*		*	
Out Patient Healthcare	94	9.2	3,161,637	9.5
Social Assistance	27	2.6	536,714	1.6
Leisure & Hospitality	206	20.1	3,799,598	11.4
Arts, Entertainment & Recreation	100	9.8	2,175,189	6.5
Amusements, Gambling, Recreation	*		*	
Accommodation & Food Svcs.	107	10.4	1,624,409	4.9
Accommodation	46	4.5	802,683	2.4
Food Services & Drinking Places	60	5.9	821,726	2.5
Other Services	43	4.2	650,215	2.0
Membership Organizations, etc.	37	3.6	533,702	1.6

* Data non-disclosable for confidentiality reasons.
Source: ADOLWD (2012c).

2.1.2.5 Personal Income

Haines personal income (in 2011 dollars) increased by approximately 85 percent between 1980 and 2010, rising from $22.6 million to almost $153.7 million, averaging an annual growth rate of 4.2 percent. Figure 2-16 illustrates Haines Borough personal income from 1980 through 2010.

Figure 2-16: Haines Borough Personal Income (Real and Nominal Dollars in Thousands), 1980–2010



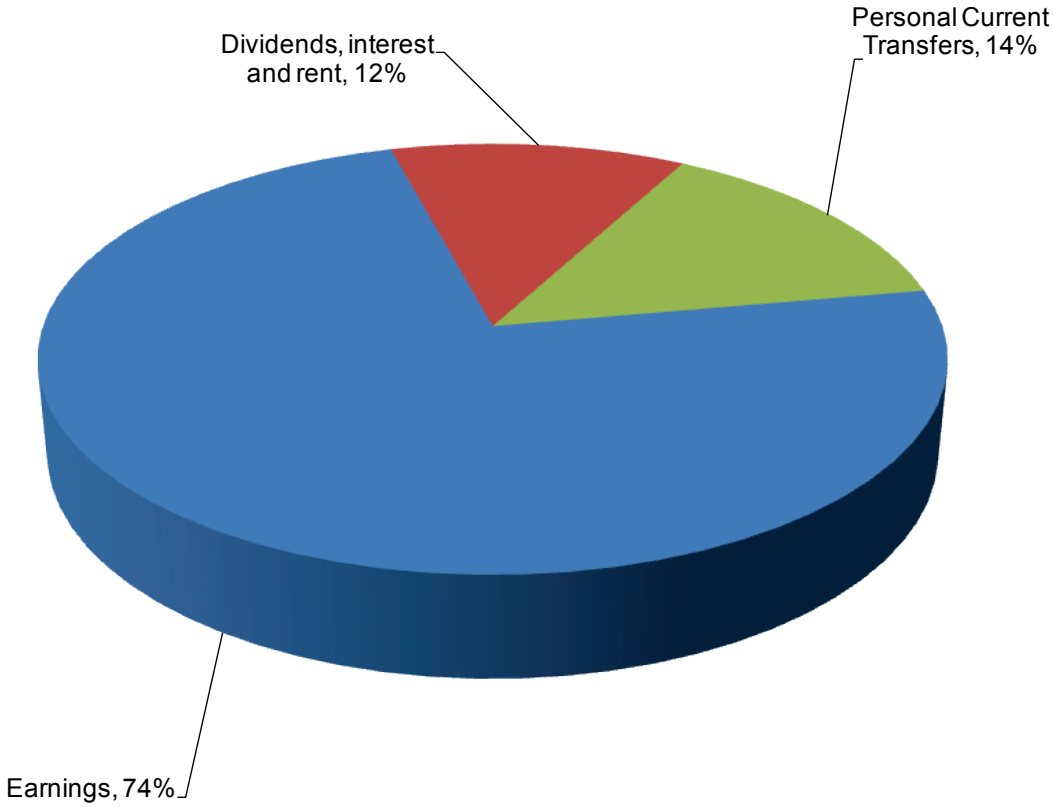
Note: Nominal income is the actual dollar amount received as income; real income accounts for the effect of inflation.

Source: Nominal Personal Income is provided by the BEA (2010). Conversion to real dollars (CPI-U Anchorage) was calculated by NEI.

The BEA develops personal income figures based on data received from the ADOLWD. As in the case for employment and earnings, the BEA historical personal income is probably overstated for the late 1980s due to reporting errors.

For many Alaska communities, a large percentage of personal income is attributable to dividends, interest, rents, and transfer payments. Approximately 26 percent of Haines' residents' total personal income was derived from these sources (see Figure 2-17).

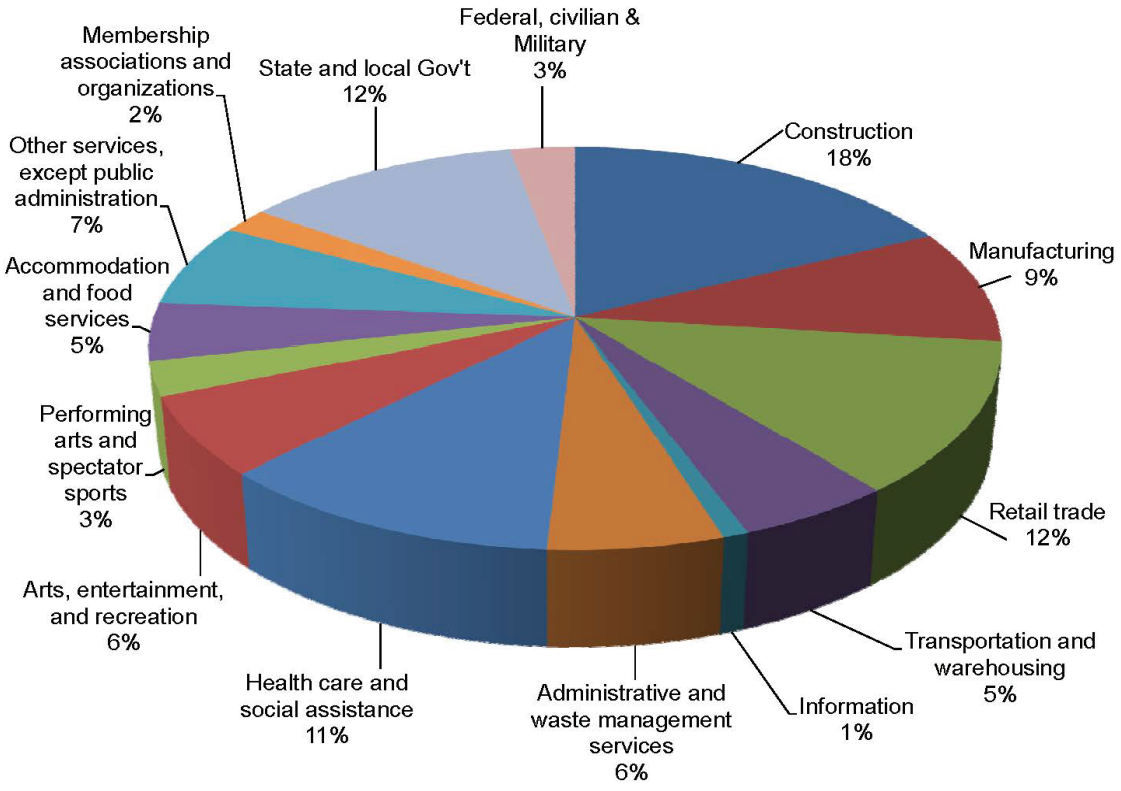
Figure 2-17: Haines Borough Personal Income by Source, 2010



Source: BEA (2010).

Construction was the largest source of personal income at 18 percent, followed by government and retail trade at 12 percent, healthcare and social assistance at 11 percent, and manufacturing at 9 percent of total personal income in Haines. Figure 2-18 illustrates personal income by industry for Haines Borough in 2010.

Figure 2-18: Haines Borough Personal Income by Industry, 2010



Source: BEA (2010).

The most recent personal income data available from the BEA are for 2010 and are presented in Table 2-14.

Table 2-14: Haines Borough Personal Income, 2010

Personal Income Calculation	Amount
Personal income	$153,665,000
Nonfarm Personal Income	$109,950,000
Population	2,508
Per capita personal income	$ 61,270
Derivation of total personal income	
Earnings by place of work	$109,950,000
Less Personal contributions for social insurance	$ (8,749,000)
Plus adjustment for residence	$ 11,883,000
Equals net earnings by place of residence	$113,084,000
Plus dividends, interest, and rent	$ 18,670,000
Plus transfer payments	$ 21,911,000
Equals total Personal Income	
Components of Earnings	
Wage and salary disbursements	$ 35,467,000
Supplements to wages and salaries	$ 11,185,000
Proprietors' income	$ 63,298,000
Farm proprietors' income	$ 0
Nonfarm proprietors' income	$ 63,298,000
Earnings by place of work	$109,950,000
Earnings by Industry	
Nonfarm earnings	$109,950,000
Private earnings	$ 96,213,000
Forestry, fishing, and related activities	(D)
Forestry and logging	$ 1,093,000
Mining	(D)
Utilities	(D)
Construction	$ 16,202,000
Manufacturing	$ 8,350,000
Retail trade	$ 11,108,000
Transportation and warehousing	$ 4,713,000
Information	$ 773,000
Finance and insurance	(D)
Administrative and waste management services	$ 5,260,000
Educational services	$ 542,000
Healthcare and social assistance	$ 10,513,000
Arts, entertainment, and recreation	$ 5,797,000

Personal Income Calculation	Amount
Performing arts and spectator sports	$ 2,546,000
Accommodation and food services	$ 4,150,000
Other services, except public administration	$ 6,146,000
Membership associations and organizations	$ 1,876,000
Government and government enterprises	$ 13,737,000
Federal, civilian	$ 1,724,000
Military	$ 866,000
State and local	$ 11,147,000
State government	$ 3,073,000
Local government	$ 8,074,000

(D) Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.
Source: BEA (2010).

2.1.2.6 Basic Industries

Key basic industries in Haines are tourism, seafood, and transportation, as well as government.

Tourism

The visitor industry is the largest industry in Haines by number of employees. Among other jobs, this includes visitor-related transportation employment, tours, and leisure and hospitality (restaurants, lodging) businesses. These jobs stem from local spending by visitors to the community, including cruise ship passengers, visitors traveling to and through Haines via ferry or highway, and visitors arriving by air or ferry to participate in special activities (for example, to attend the fair, take a guided hunt, view eagles, etc.).

Visitor-related employment in Haines includes three basic components: direct wage and salary employment, proprietorships, and indirect employment. Leisure and hospitality accounted for 20.1 percent of total wage and salary employment and 11.4 percent of total wages during 2011.

In addition to the wage and salary jobs, the visitor industry in Haines generates other employment and income in the local economy for self-employed individuals or proprietorships. This includes bed and breakfast owner/operators, charter fishing businesses, guides, taxi drivers, and others who operate their own businesses but do not report themselves as employees of the business.

The visitor industry indirectly creates additional jobs in the Haines support sector. Visitor industry businesses and their employees spend money in the community, generating additional economic activity, including additional employment and income. Previously, McDowell Group estimated indirect employment multipliers for Haines of 1.3 (McDowell Group, 2002a). This means that for every direct job created in the visitor industry, another 0.3 jobs are created in the support sector. Based on this employment multiplier, the visitor industry in Haines accounted for a total (direct and indirect) of approximately 300 jobs in Haines in 2001.

Unlike many places in Southeast Alaska where tourism is significant, Haines does not have multiple cruise ships per day, but instead generally has just one per week. The number of cruise ship passengers visiting the Borough dropped dramatically between its peak of 195,600 passengers in 2000 to 31,611 in 2012 (Table 2-15). In 2001, the predominant cruise ship company, representing 79 percent of Haines cruise ship visitors in 2000, ceased visits to Haines (Associated Press, 2001). While not all ferry traffic is tourist-related, ferry traffic has also decreased. For example, ferry traffic in 1992 included 45,300 disembarking passengers and 15,100 vehicles. In 2011, disembarking traffic totaled 33,284 passengers and 12,204 vehicles (AMHS, 2012). This decrease in ferry traffic, as well as recent decreases in cruise ship passenger traffic, has been detrimental to some sectors of the Haines visitor industry, as well as to the local economy as a whole (Haines Borough, 2012). Visitor arrivals by air, however, have increased in recent years from 5,641 in 2002 to 9,636 in 2011 (RITA, 2013a), but still not to levels recorded in the 1990s.

Table 2-15: Haines Cruise Ship Passenger Traffic, Select Years, 2000–2012

Year	Passengers
2000	195,466
2005	30,832
2006	32,896
2007	27,659
2008	50,121
2009	43,550
2010	32,259
2012	31,611
% Change 2000–2012	-83.80%

Source: HCVB (2012).

Despite receiving few cruise ships in port, Haines benefits from Skagway cruise ship ports of call because Haines businesses and the Haines Convention and Visitors Bureau (HCVB) worked to develop opportunities for cruise passengers to visit Haines during their stay in Skagway. In 2011, approximately 28,500 cruise ship passengers visited Haines via the fast ferry from Skagway. These visitors spent an average of $135 per person in Haines during their stay in 2011, or $3.8 million. Dependable fast ferry runs between these communities is essential to capture this business (Haines Borough, 2012).

The long-term outlook for cruise traffic to Haines is uncertain. Haines is likely to remain a secondary port of call. It lacks the tour and excursion opportunities that it needs to be popular with passengers and cruise lines (which are looking to maximize commission revenues from on-board tour sales). Cruise traffic will probably continue to be erratic, as lines add or drop the port, depending on availability of other ports of call.

Commercial Fishing

According to CFEC preliminary data, 81 Haines-based commercial fishermen fished 130 permits in 2010 and harvested 6.4 million pounds of fish with an estimated gross income of $7 million. This is an increase in revenue from 2000, when 97 Haines-based commercial fishermen fished 152 permits and harvested 7 million pounds of fish with an ex-vessel value, or value before processing, of $3.8 million. Salmon comprised the majority of the landed fish in 2010 at 4.9 million pounds, followed by halibut at 457,000 pounds. Small quantities of crab, herring, other shellfish, and sablefish were also landed.

The largest private employer in the Haines Borough is Ocean Beauty Seafoods, a seafood processing plant in Excursion Inlet. There are four other seafood processing facilities in the Borough. Although tourism is the largest industry, seafood processing contributes a significant number of jobs, about 400 in 2009. However, most of the jobs are seasonal and are not filled by Haines residents.

Transportation

While not providing as many jobs or work-related income as trade, transportation is a significant economic development opportunity area for Haines Borough with its ice-free deep-water port and year-round road access to Canada, Interior Alaska, and the continental U.S. on the Haines and Alaska highways. The transportation industry in Haines accounted for an average of 29 jobs in 2010, with peak employment of 49 workers in 2010, according to ADOLWD. Payroll totaled approximately $0.8 million, and personal income (including payroll) totaled $4.7 million.

Haines is one of three communities in Southeast Alaska with road access to the contiguous U.S. and to Canada (the other two communities are Skagway and Hyder). Haines links to the Alaska Highway in Canada via the 146-mile Haines Highway. Since 2002, the State has been working to improve the Haines Highway to a 55-mph road with wider shoulders and to implement a long-term solution to the debris flow problems near Mileposts 19 and 23. This, as well as ensuring that the road can support industrial loads, is important to Haines' success at carrying an increased share of freight to and from the Yukon and Interior Alaska. Though not a large part of the economy, several Haines residents are employed hauling freight vans between Haines and Interior Alaska. In 2008, a total of 702 trucks traveled on the Haines Highway. Truck traffic has been declining steadily since its peak in 1995, when 1,484 trucks traveled north from Haines.

Haines is a northern terminus of the AMHS. In 2011, 553 vans travelled between Juneau and Haines (average of 11 per week) and 153 vans travelled between Haines and Skagway (average of 4 per week). AMHS van traffic in Haines included 517 disembarking vans in 2002 and 546 embarking vans. Approximately 82 percent of the embarking van traffic was destined for Juneau, and approximately three-quarters of the vans disembarking in Haines originated in Juneau.

Borough-owned port and harbor facilities include the Lutak Dock and Boat Launch (Haines Municipal Dock); Lentikof Cove Small Boat Harbor, launch ramp, and float; Port Chilkoot Dock and its attached Lightering Dock; Portage Cove Small Boat Harbor; and a moorage float at Swanson Harbor near Couverden in Lynn Canal. Contiguous with the Borough's Lutak dock is the AMHS ferry dock and terminal. Waterborne freight arrives in Haines on a weekly basis

through AML barge service. During the summer months, Haines receives approximately 30 to 50 cargo vans per week, dropping in the winter to between 15 and 20.

The State-owned airport, with its 4,000-foot paved runway and daily scheduled flights to Juneau and Skagway, brings regular air service to Haines.

Government

Government is a critical source of both employment and personal income in Haines. Collectively, local, State, and federal government accounted for 208 jobs in Haines, 20 percent of total employment and 24 percent of total wage and salary earnings in 2011. Local government accounts for the majority of these jobs with 152 workers, followed by State government (45 workers) and federal government (12 workers). The Haines Borough School District is the single largest source of government employment in Haines. The BEA reports personal income in government and government enterprises at $13.7 million for 2010.

Government also generates income for Haines residents through capital (construction) project funding, grants to non-profit organizations, and others. When indirect income effects are added, government accounts for approximately 40 percent of local personal income.

2.1.2.7 Support Sector Industries

Retail Trade

Employment in Haines' retail trade sector for 2011 averaged 140 jobs with $3.2 million in total annual payroll. The retail sector in Haines is particularly dependent on non-resident spending. This is reflected in the seasonal increase in retail employment. In 2011, retail employment peaked at 158 jobs in August, compared to January employment of 120.

To a large degree, Haines retailers compete against Juneau stores. Leakage from the Haines economy, which occurs when local consumers purchase goods and services from outside the community, has been an important issue for Haines merchants.

Educational and Healthcare Services

In 2011, educational and healthcare services generated average employment of 137 jobs and annual payroll of $4.2 million. Educational and healthcare services accounted for 13 percent of the jobs in Haines in 2011 and 13 percent of the wage and hourly earnings.

Construction

The construction industry accounted for an average of 91 jobs in 2011, with peak employment of 124 workers. Payroll totaled $6.6 million and personal income (including payroll) totaled $16.2 million. Most of this employment (more than two-thirds) is in heavy construction, rather than residential or commercial, and includes employment in projects outside the Haines area.

2.1.2.8 Housing and Real Estate

According to the 2010 Census, there were 1,631 housing units in Haines, of which 1,149 units were occupied. Vacant housing units numbered 482 (30 percent), and 345 of these were classified as seasonal, recreational, or occasional use units.

According to the Haines Chamber of Commerce, rentals range from $500 per month for a studio-type apartment, including utilities, to $1,200 per month for a two- or three-bedroom house, not including utilities.

Real property valuations for the Haines Borough as of January 1, 2012, were $286 million ($178 million for the Haines Townsite Service Area and $108 million for the remainder of the borough; Stuart, personal communication, 2012). The real property valuation for the Haines Borough in 2011 was $259 million (locally assessed value). This compares to the 1994 assessed real property valuation of $102 million.

2.1.2.9 Municipal Revenues and Expenditures

Haines Borough's revenues for the fiscal year ending June 30, 2010, were $14.1 million. State revenue sources comprised the bulk of these revenues (48.5 percent), followed by taxes (34.4 percent total). Real property tax revenues were $2.3 million in fiscal year 2010. The mill rate for Haines Borough ranges from 7.19 to 12.05 mills.

The Haines Borough collects a 5.5 percent sales tax, with revenues in 2010 of more than $2.5 million. Haines Borough assesses a 4 percent bed tax, which added approximately $74,000 to municipal revenues for the year (ADCCED, 2010). Table 2-16 summarizes Haines Borough revenues for 2010.

Table 2-16: Haines Borough Municipal Revenues, 2010

Source of Funds	Revenue Amount ($)	Percent of Revenue Base
State intergovernmental	6,818,146	48.5
Sales taxes	2,543,070	18.1
Property taxes	2,297,107	16.3
Investment earnings	749,343	5.3
Federal intergovernmental	589,519	4.2
Service and admission fees	508,562	3.6
Payments in lieu of taxes	359,766	2.5
Contributions and other	96,650	0.7
Rentals	66,653	0.5
Licenses and permits	38,163	0.3
Local Improvement District payments	601	0.0
Total revenues	**14,067,580**	**100.0**

Source: Haines Borough (2010).

Borough expenses for the fiscal year ending June 30, 2010, were $12.3 million. Public works and streets made up 22.9 percent of expenditures, followed by education at 21.4 percent (see Table 2-17).

Table 2-17: Haines Borough Municipal Expenditures, 2010

Program Expenses	Expenses ($)	Percent of Total Expenses
Governmental activities:		
Public works and streets	2,823,495	22.9
Education	2,639,266	21.4
General Government	1,662,573	13.5
Culture, recreation, and library	1,130,348	9.2
Public safety	1,036,018	8.4
Interest on long-term debt	734,785	6.0
Port operations	501,560	4.1
Economic Development	432,703	3.5
Total governmental activities	**10,960,748**	**89.0**
Business-type activities:		
Sewer	538,980	4.3
Small boat harbor	483,686	3.9
Water	342,019	2.8
Total business-type activities	**1,364,685**	**11.0**
Total primary government	**12,325,433**	**100.0**

Source: Haines Borough (2010).

2.1.3 Skagway

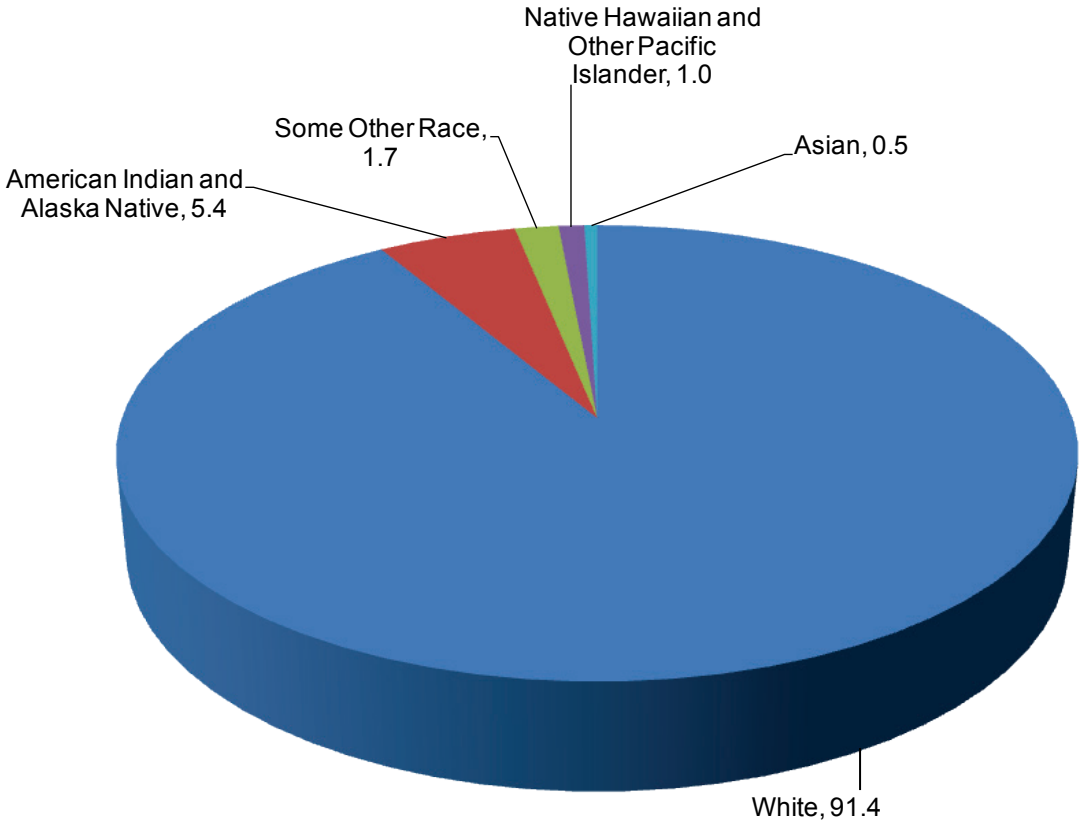
Following is an economic overview of the Municipality of Skagway Borough. Economic data are limited, so wherever possible, reasonable estimates of past and present economic conditions in Skagway are presented. This overview includes population projections for Skagway to the year 2050.

2.1.3.1 Demographics

The 2010 Census counted 968 residents living in the Municipality of Skagway, averaging 2.5 persons per household. Almost 84 percent of Skagway residents are 18 years of age or older (816 individuals). This is an increase from the 2000 Census, which counted 862 residents living in the Municipality of Skagway, averaging 2.2 persons per household with almost 80 percent of residents 18 years of age or older (685 individuals). Males outnumber females, 52 percent to 48 percent, respectively.

According to the 2010 Census, 91.4 percent of Skagway's population is White and 5.4 percent is American Indian and Alaska Native. Another 1.0 percent is Native Hawaiian and Other Pacific Islander, 0.5 percent is Asian, and the remainder is some other race (see Figure 2-19). This is comparable to the 2000 Census, which reported 92 percent as White, 5 percent American Indian and Alaska Native, 2.0 percent Asian, and the rest Native Hawaiian and Other Pacific Islander.

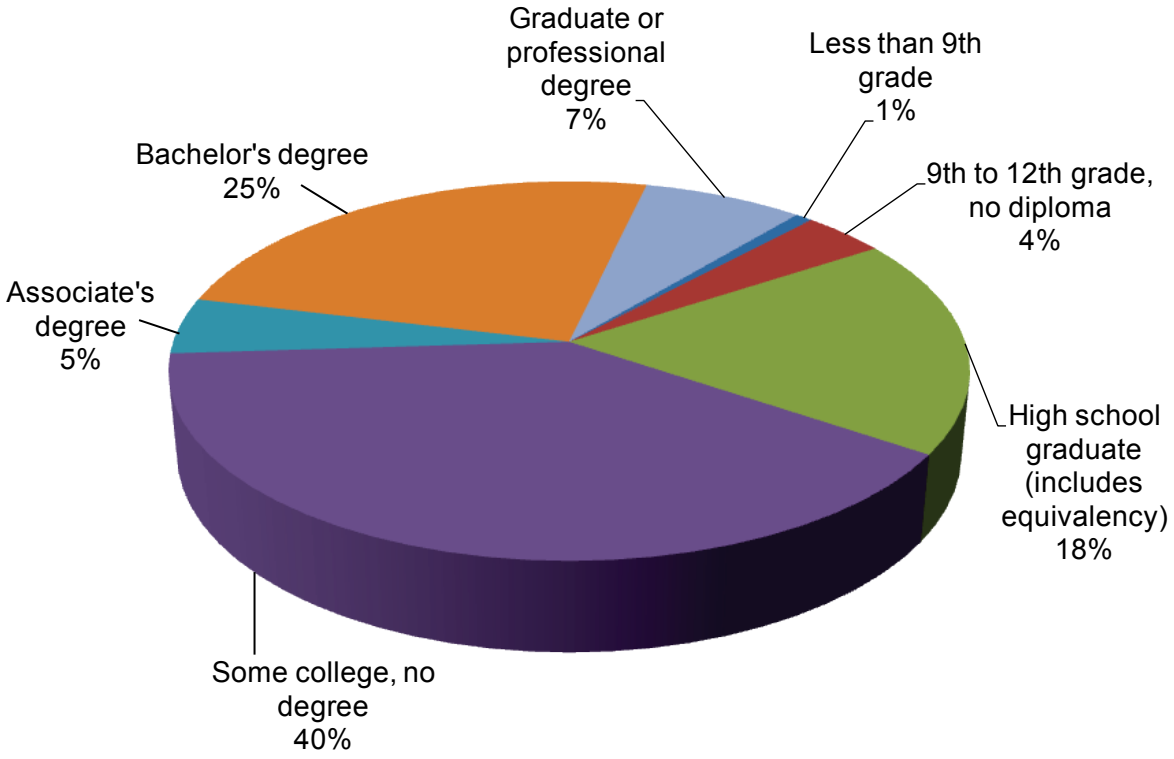
Figure 2-19: Municipality of Skagway Racial Composition of Population, 2010



Source: U.S. Census Bureau (2010a).

Educational data indicate that 95 percent of Skagway's residents had completed high school (or more) in 2010. Thirty-seven percent held at least an associate's degree and 32 percent held a bachelor's degree or higher (see Figure 2-20). This compares to the 1990 Census, when 28 percent of the population had at least an associate's degree and 21 percent of the population held a bachelor's degree or higher, and the 2000 Census, when 38 percent of the population had at least an associate's degree and 25 percent of the population held a bachelor's degree or higher.

Figure 2-20: Municipality of Skagway Educational Attainment of Population, 2010

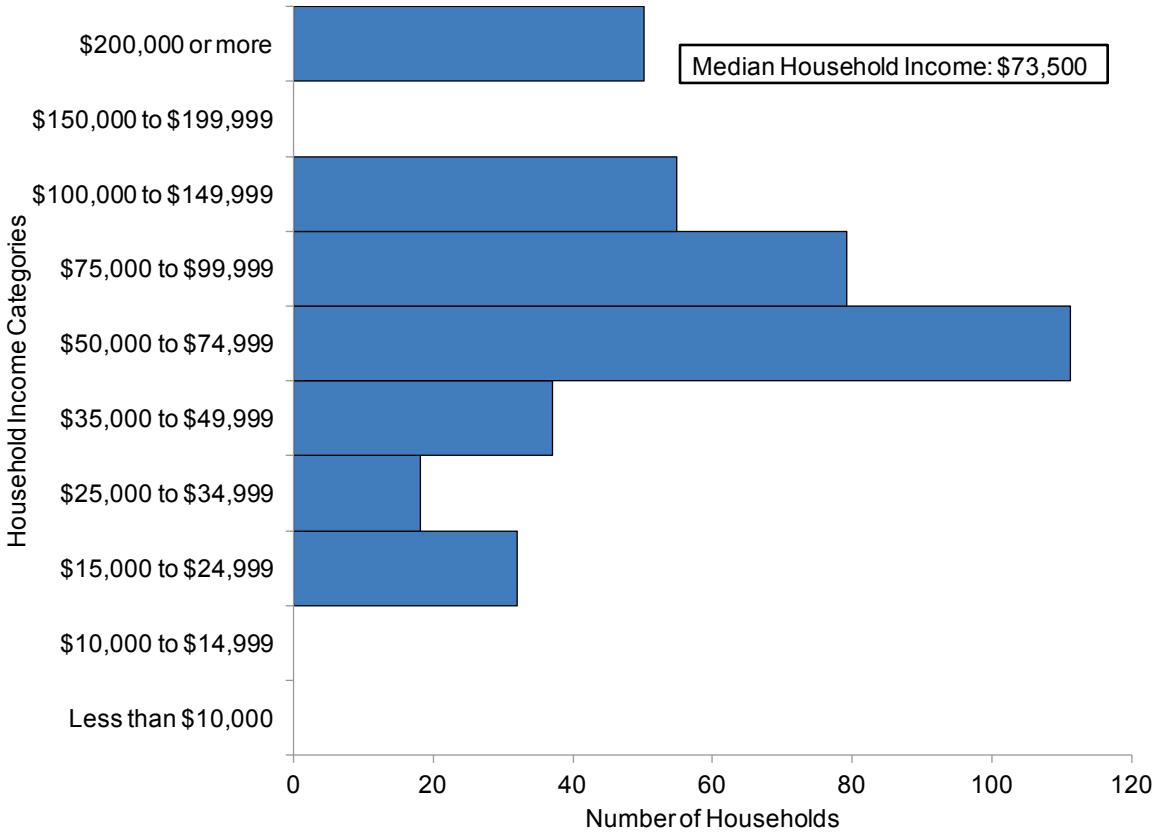


Source: U.S. Census Bureau (2010a).

There were 386 households counted in Skagway in the 2010 American Community Survey. Among Skagway households, approximately 8.3 percent had incomes less than $25,000 (in 2010) and 20.1 percent of all Skagway residents had incomes below the poverty line. Just over three-quarters, 76.5 percent, of local households had incomes of more than $50,000, and 47.7 percent of the households earned $75,000 or more. Median household income was $73,500 (see Figure 2-21) and per capita income was $57,832.

During the 2000 Census, there were 398 households. Among these households, approximately 17 percent had incomes less than $25,000 (in 2000) and 3.7 percent had incomes below the poverty line. Just under half, 49.5 percent, of local households had incomes of more than $50,000, and 26 percent of the households earned $75,000 or more. Median household income was $49,375 and per capita income was $27,700.

Figure 2-21: Municipality of Skagway Annual Household Income, 2010



Source: U.S. Census Bureau (2010a).

2.1.3.2 Population

According to ADOLWD, Skagway's population in 2011 was 965. Skagway's population has grown slowly over the past 20 years at an annual rate of 1.4 percent. Over the past 10 years the annual growth rate was 1.3 percent, and the 5-year growth rate was also 1.3 percent (see Table 2-18). The latest population data show a slight decline in Skagway's population of three

residents (0.3 percent). Population estimates available from the Census and the ADOLWD are as of April each year, and essentially represent year-round residents. However, Skagway experiences a large influx of seasonal workers employed in the visitor industry.

Historically, Skagway's position as the northernmost point on the Inside Passage led many gold seekers in the late 1800s to this community. According to a North West Mounted Police report, Skagway grew to a town of about 20,000 people in October 1897. The population base decreased just as rapidly as it began once the gold rush was over, and by 1900, when the Census Bureau started gathering population information, the town had shrunk to 3,177 residents. The community continued to contract through the 1980s, while the 1990s and 2000s saw modest growth in population.

Table 2-18: Municipality of Skagway Historical Population, 1980–2011

Year	Population	Annual Number Change	Annual Percent Change	5-Year Rate of Change	10-Year Rate of Change	20-Year Rate of Change
1980	768					
1981	819	51	6.6			
1982	790	(29)	-3.5			
1983	782	(8)	-1.0			
1984	652	(130)	-16.6			
1985	610	(42)	-6.4			
1986	714	104	17.0	-2.7%		
1987	709	(5)	-0.7			
1988	704	(5)	-0.7			
1989	718	14	2.0			
1990	692	(26)	-3.6			
1991	726	34	4.9	0.3%	-1.2%	
1992	758	32	4.4			
1993	786	28	3.7			
1994	798	12	1.5			
1995	775	(23)	-2.9			
1996	778	3	0.4	1.4%	0.9%	
1997	815	37	4.8			
1998	811	(4)	-0.5			
1999	825	14	1.7			
2000	862	37	4.5			
2001	848	(14)	-1.6	1.7%	1.6%	0.2%
2002	861	13	1.5			
2003	868	7	0.8			
2004	907	39	4.5			

Year	Population	Annual Number Change	Annual Percent Change	5-Year Rate of Change	10-Year Rate of Change	20-Year Rate of Change
2005	875	(32)	-3.5			
2006	905	30	3.4	1.3%	1.5%	1.2%
2007	900	(5)	-0.6			
2008	911	11	1.2			
2009	944	33	3.6			
2010	968	24	2.5			
2011	965	(3)	-0.3	1.3%	1.3%	1.4%

Note: The population numbers for the years 1980–2006 include the City of Skagway and the "remainder population of the Skagway Census Sub-area." In 2007 the City of Skagway was dissolved, and the Municipality of Skagway Borough was formed. The new borough includes the entirety of the former Skagway Census Sub-area, including the former City of Skagway (now a CDP).

Source: Table developed by NEI using population data from ADOLWD.

2.1.3.3 Population Forecast

Over the long-term, Skagway's population is expected to continue growing slowly. Summer population growth is likely to out-pace year-round population growth, as a result of the recovery in the visitor industry. Projecting past trends into the future provides an indication of where the community's population could be in 40 years. Based on past trends, a low-range forecast for Skagway would be 894 year-round residents, the mid-range forecast would be 1,126 residents, and the high-range forecast would be 1,358 (Table 2-19 and Figure 2-22). For further detail regarding population forecasts for the Municipality of Skagway Borough by year, see Appendix B (AMHS Lynn Canal Market Data and Population Forecast) of Appendix AA (2014 *Traffic Forecast Report*) of the JAI Project Draft SEIS.

As usual, it is not possible to identify in advance the forces that will drive population change. Availability of affordable land, mine development in the Yukon Territory, and a turnaround in the Alaska highway visitor market are a few factors (unrelated to the JAI Project) that could have an impact on the local economy.

Table 2-19: Population Forecasts for the Municipality of Skagway Borough, 2012–2050

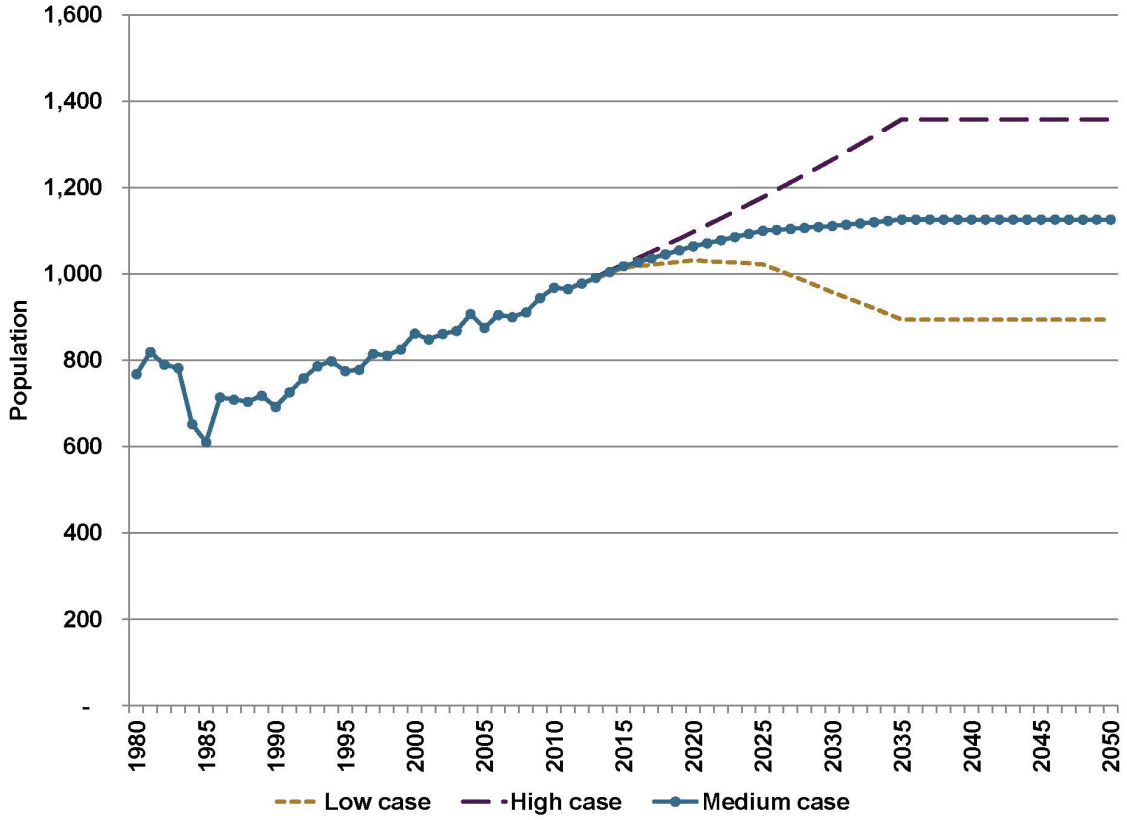
Year	Mid-Range Population Forecast	Annual Number Change	Annual Percent Change	Low-End Population Forecast	High-End Population Forecast
2012	978			977	979
2013	991	13	1.3	989	993
2014	1,004	13	1.3	1,002	1,007
2015	1,018	14	1.3	1,014	1,022
2016	1,027	9	0.9	1,018	1,036
2017	1,036	9	0.9	1,021	1,051
2018	1,045	9	0.9	1,025	1,066

Year	Mid-Range Population Forecast	Annual Number Change	Annual Percent Change	Low-End Population Forecast	High-End Population Forecast
2019	1,055	9	0.9	1,028	1,081
2020	1,064	9	0.9	1,031	1,097
2021	1,071	7	0.7	1,030	1,113
2022	1,078	7	0.7	1,028	1,129
2023	1,085	7	0.7	1,026	1,145
2024	1,093	7	0.7	1,024	1,161
2025	1,100	7	0.7	1,022	1,178
2026	1,102	2	0.2	1,010	1,195
2027	1,104	2	0.2	997	1,212
2028	1,107	2	0.2	984	1,229
2029	1,109	2	0.2	971	1,247
2030	1,111	2	0.2	957	1,265
2031	1,114	3	0.3	945	1,283
2032	1,117	3	0.3	933	1,301
2033	1,120	3	0.3	920	1,320
2034	1,123	3	0.3	907	1,339
2035	1,126	3	0.3	894	1,358
2036	1,126	-	0.0	894	1,358
2037	1,126	-	0.0	894	1,358
2038	1,126	-	0.0	894	1,358
2039	1,126	-	0.0	894	1,358
2040	1,126	-	0.0	894	1,358
2041	1,126	-	0.0	894	1,358
2042	1,126	-	0.0	894	1,358
2043	1,126	-	0.0	894	1,358
2044	1,126	-	0.0	894	1,358
2045	1,126	-	0.0	894	1,358
2046	1,126	-	0.0	894	1,358
2047	1,126	-	0.0	894	1,358
2048	1,126	-	0.0	894	1,358
2049	1,126	-	0.0	894	1,358
2050	1,126	-	0.0	894	1,358

Note: For 2012–2035 the high-end population uses an annual rate of change of 1.43 percent (equal to the 20-year rate of change through 2011). The low-end population forecast is projected using the difference between the mid-range and the high-end forecasts. As the ADOLWD forecast only goes to 2035, forecasts for the years 2036–2050 will be a continuation of the forecast for the year 2035 with a zero percent growth rate.

Source: Table developed by NEI using population forecasts from ADOLWD.

Figure 2-22: Historical and Forecast Population for the Municipality of Skagway Borough



Note: The population numbers for the years 1980–2006 include the City of Skagway and the "remainder population of the Skagway Census Sub-area." In 2007 the City Skagway was dissolved, and the Municipality of Skagway Borough was formed. The new borough includes the entirety of the former Skagway Census Sub-area, including the former City of Skagway (now a CDP).

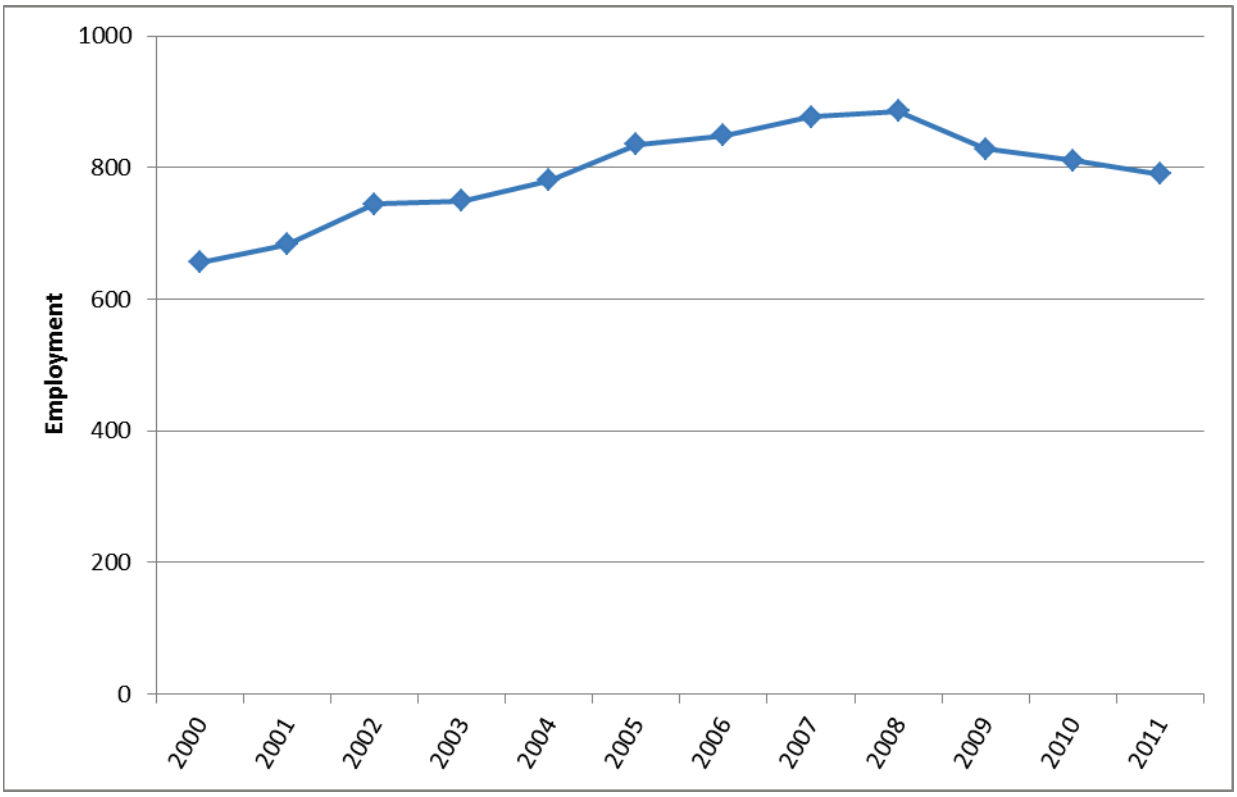
For 2012–2035 the high-end population uses an annual rate of change of 1.43 percent (equal to the 20-year rate of change trough 2011). The low-end population forecast is projected using the difference between the mid-range and the high-end forecasts.

Source: Figure developed by NEI using population data and forecasts from ADOLWD.

2.1.3.4 Employment and Payroll

According to the ADOLWD, employment in Skagway included the annual average of 790 jobs in 2011. Employment grew by 120 percent between 2000 and 2011, at an annual average rate of 1.6 percent. Skagway employment is highly seasonal. In July 2011, Skagway employment totaled 1,288 jobs. In November 2011, the total was 476 jobs. See Figure 2-23 for an illustration of average annual employment.

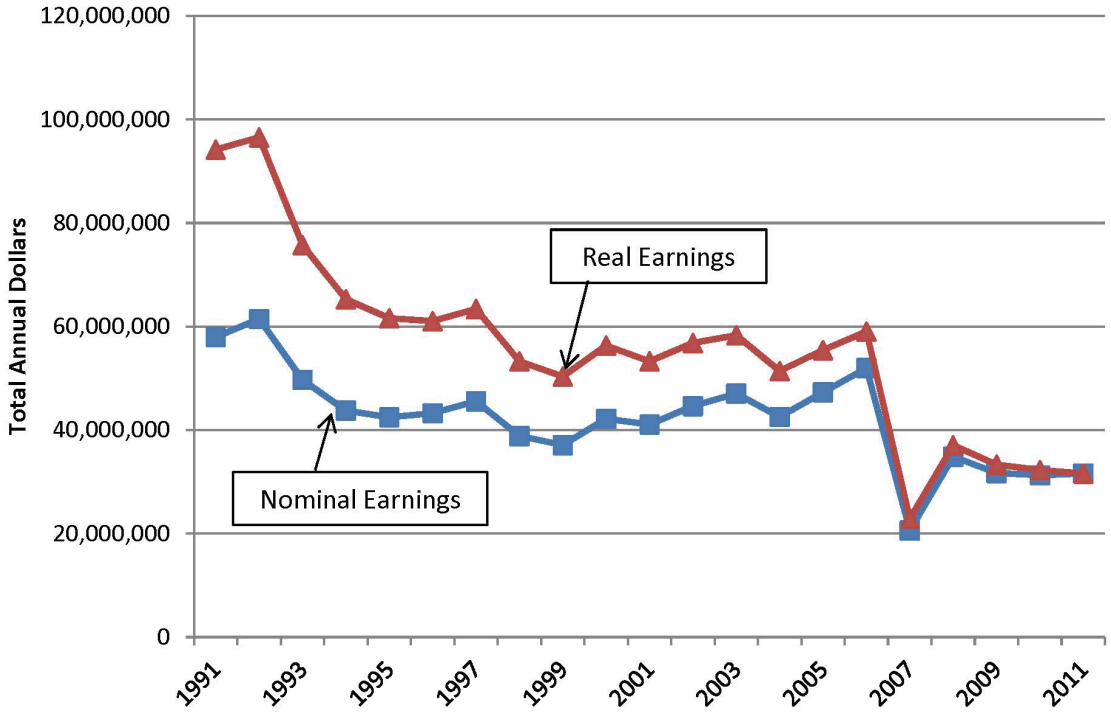
Figure 2-23: Municipality of Skagway Average Annual Employment, 2000–2011



Source: ADOLWD (2012d).

Total Skagway wage and hourly earnings increased at a higher rate than employment (approximately 184 percent, in 2011 dollars), from $17 to $32 million from 2000 to 2011. This is an average annual rate of 5 percent over the period. (See Figure 2-24 for an illustration of real and nominal earnings.)

Figure 2-24: Municipality of Skagway Total Annual Payroll (Real and Nominal Dollars), 2000–2011



Source: ADOLWD (2012c). Conversion to real dollars (CPI-U Anchorage) was calculated by NEI.

Note: ADOLWD did not report employment data for 1990. The employment number for 1990 is the average of 1989 and 1991.

Approximately 100 employers reported wage and hour earnings for workers in Skagway[3]. Private industry accounts for the majority (74 percent) of all employment in Skagway. Employment and payroll by industry is provided in the following table (see Table 2-20).

Table 2-20: City of Skagway Industry Employment and Earnings, 2011

	Average Monthly Employment	Percent Of Total Employment	Total Annual Earnings	Percent of Total Annual Earnings
TOTAL INDUSTRIES	790	100	31,596,207	100
Total Government	168	21	8,248,312	26
Federal Government	56	7	3,628,486	11
State Government	14	2	625,635	2
Local Government	98	12	3,994,191	13
Private Ownership	622	79	23,347,894	74
GOODS-PRODUCING	50	6	3,296,335	10
Construction	*	*	*	*
Manufacturing	*	*	*	*
SERVICE-PROVIDING	572	72	20,051,559	63
Trade, Trans., & Utilities	344	44	13,659,212	43
Wholesale Trade	*	*	*	*
Retail Trade	164	21	4,687,763	15
Food & Beverages	26	3	731,542	2
Clothing & Clothing Accessories	32	4	975,726	3
Miscellaneous	82	10	2,236,468	7
Transportation & Warehousing	*	*	*	*
Utilities	*	*	*	*
Financial Activities	16	2	624,212	2
Finance & Insurance	*	*	*	*
Real Estate, Rental & Leasing	*	*	*	*
Professional & Business Svcs.	*	*	*	*
Administrative & Waste Svcs.	*	*	*	*
Educational & Health Svcs.	*	*	*	*
Healthcare & Social Assistance	*	*	*	*
Social Assistance	7	1	143,321	0

[3] If 50 percent or more of the workers in an industry are represented by one employer, the wage information is considered confidential. Average monthly employment, on the other hand, can be revealed.

	Average Monthly Employment	Percent Of Total Employment	Total Annual Earnings	Percent of Total Annual Earnings
Leisure & Hospitality	164	21	4,780,207	15
Arts, Entertainment & Recreation	81	10	2,673,652	8
Amusements, Gambling, Recreation	64	8	2,211,464	7
Accommodation & Food Svcs.	83	11	2,106,555	7
Other Services	34	4	526,192	2
Membership Organizations, etc.	34	4	526,192	2

* Data non-disclosable for confidentiality reasons.
Source: ADOLWD (2012c).

2.1.3.5 Personal Income

ACS reports that per capita income in Skagway was $57,832 in 2010, approximately 44.7 percent above the Alaska average of $31,944.

2.1.3.6 Basic Industries

The visitor industry is, by far, Skagway's most important industry. Skagway's summer tourism industry has also continued to grow, in particular the cruise ship sector. Skagway cruise ship visits continue to increase with each passing year: from approximately 48,000 passengers in 1983 to 708,000in 2011. While not all travelers use the highway, the AMHS, and airplanes are tourists, many tourists do choose these forms of transportation to reach Skagway. Summer visitors (between May and September) arriving by highway continue to decline from the 80,000 reported in 2002 to 64,368 in 2011. Summer visitors arriving on the AMHS (ferry) have also declined from 26,224 in 2002 to 16,393 in 2011. Summer visitor arrivals by air, however, have increased from 5,641 in 2002 to 6,419 in 2011. Tourism remains Skagway's main economic engine.

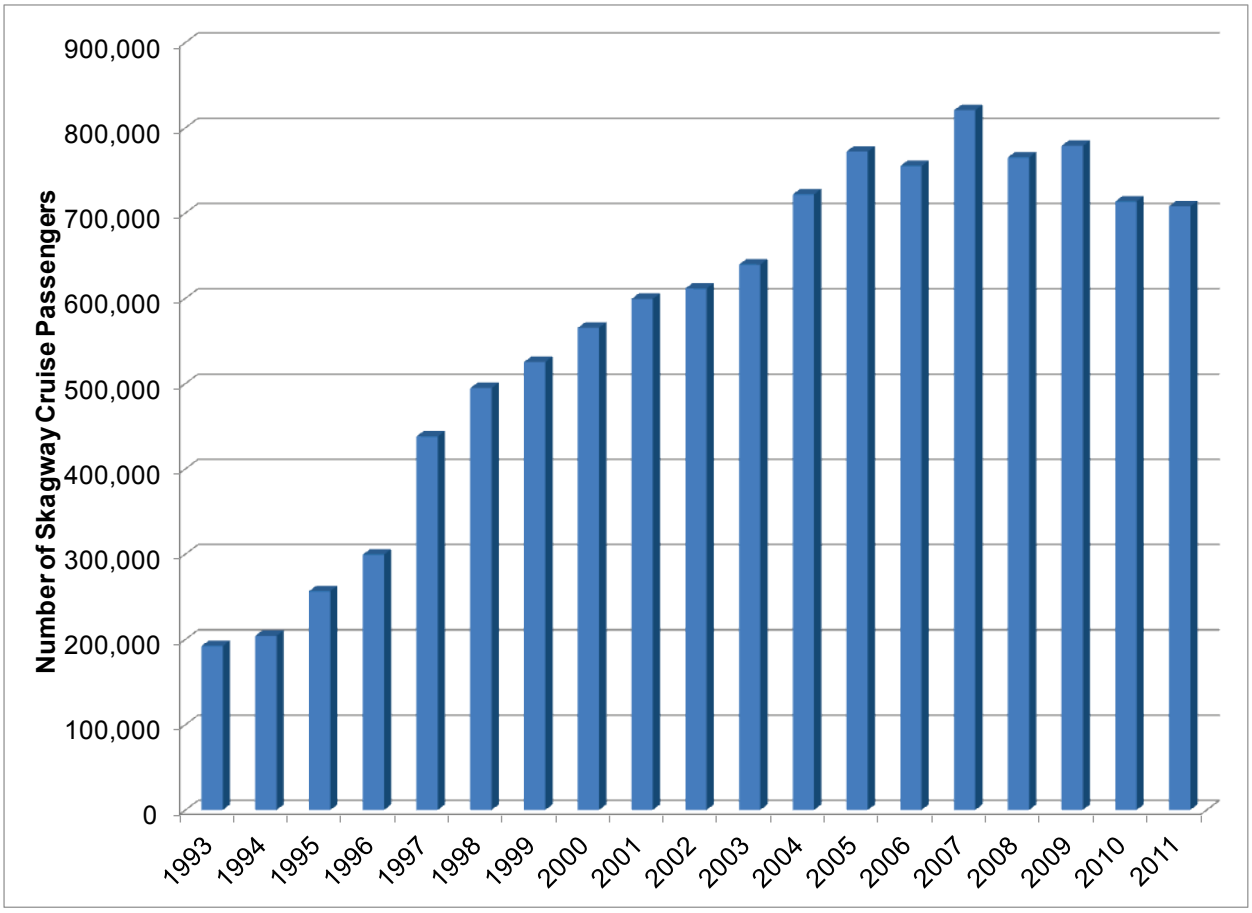
Visitor Industry

According to a 2000 study prepared for the then City of Skagway, visitors accounted for about $60 million in local spending (Southeast Strategies and Dean Runyon Associates, 2000). Visitor spending included $44 million by cruise ship passengers and $15 million by independent travelers. Visitor spending generated 900 summer season jobs and $7.7 million in payroll. Winter employment related to visitor spending totaled 119 jobs, with an annual average of 453 jobs.

That study also noted that only about $9 million of that spending actually stays in the economy. City of Skagway tax and fee revenues from the visitor industry totaled $4.7 million, according to the same study.

The number of cruise visitors to Skagway has more than tripled in the last 15 years, from 260,000 in 1996 to almost 820,000 in 2007 before falling back to 708,000 in 2011 (see Figure 2-25).

Figure 2-25: Skagway Cruise Ship Passenger Traffic, 1993–2011



Source: Skagway Convention and Visitors Bureau (2012).

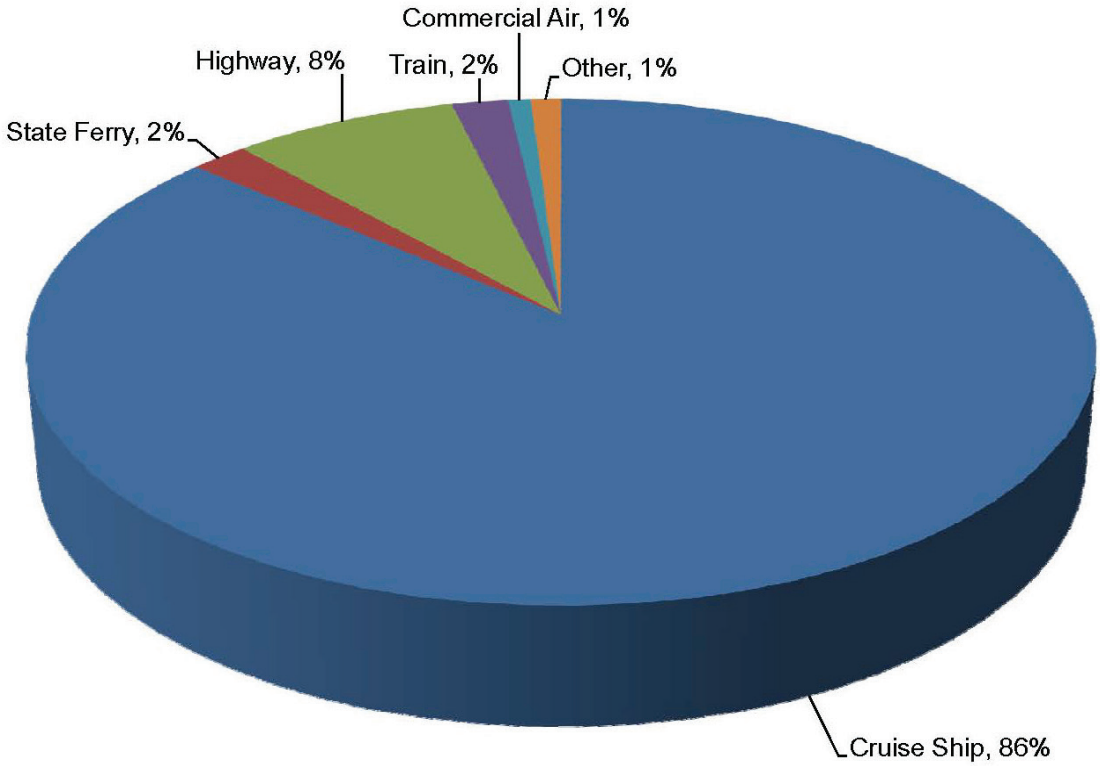
Cruise ship traffic to Skagway is expected to increase along with regional growth in the industry. Skagway is a very popular stop among cruise ship passengers and is profitable (in terms of tour and excursion sales commissions) for the cruise lines. Independent visitor travel to Skagway includes travelers arriving by ferry, air taxi, and highway. In 2011, 73,013 travelers arrived in Skagway in a personal vehicle according to the border crossing data. Another 130,309 people arrived via tour bus.

Ferry traffic has also declined in recent years. The number of disembarking passengers in Skagway was more than 40,000 in 1995 and years prior to that, but totaled only 21,216 passengers in 2011.

Air taxi passenger arrivals are also down somewhat from historic levels. In 2011, air traffic from Juneau totaled 7,532 passengers, slightly up from 2000 (6,700 passengers) and below the 1998 total of about 8,100 passengers.

The distribution of visitor traffic in 2011 by mode of transportation is presented in Figure 2-26.

Figure 2-26: Municipality of Skagway Visitor Traffic by Mode of Transportation, 2011



Sources: Skagway Convention and Visitors Bureau (2012).

Transportation

The visitor industry-dominated transportation industry employed 239 workers in Skagway in 2007[4], about 24 percent of the total employment for the area, and these workers captured nearly 33 percent of the total earnings for the year. The transportation and warehousing sector accounted for 4 percent of personal income in 2010. Transportation workers are employed primarily with the White Pass and Yukon Railroad. The railroad was built initially to supply goods to the interior gold mining camps. The railroad prospered during World War II when the trains hauled freight for the war effort. Today the railway connects Skagway with Fraser, in British Columbia, during the summer months. The railroad trip from Skagway to Fraser and back is one of the most popular visitor excursions in Alaska. In addition to the round trip, passengers can make bus connections to Whitehorse and northern Alaska.

[4] Due to changed confidentiality standards, 2007 was the last year that employment data were reported for this sector.

The port of Skagway serves several important functions in the city's economy. Inbound general cargo and petroleum products pass through the port. Outbound ore concentrates have been shipped all over the world from Skagway. Most important, the port serves the cruise industry and its 708,000 passengers, and is a northern terminus for the AMHS.

The Skagway harbor had freight traffic of 166,000 tons in 2010. According to AML, 43 percent of Skagway general freight went on to the Yukon in 2002. The Petro Marine Services bulk fuel plant handles the petroleum products passing through Skagway. Once-a-month service in the off season increases to twice monthly during the summer months. The fuel originates in Vancouver with separate blended mixes for the U.S. and Canadian markets. About 75 percent of the petroleum products arriving in Skagway were bound for the Yukon in 2002 (12–18 million gallons of the 22–24 million gallons annually).

The volume of freight (excluding ore concentrates) moving through Skagway has been declining, but may have stabilized in 2002. According to border crossing data, 2,660 trucks passed through the border northbound in 2008, up from truck traffic in 1999 (2,196), 2000 (1,753), 2001 (1,370), and 2002 (1,646), but below 1998 (3,110). Similarly, the number of trucks southbound totaled 2,596 in 2008, up from 1999 (2,262), 2000 (2,080), 2001 (1,639), and 2002 (1,800), but below traffic in 1998 (3,147 trucks).

2.1.3.7 Support Sector Industries

Retail Trade

The Retail Trade industry in Skagway employed an average of 164 workers in 2011. Many of these positions are seasonal jobs. During the month of June, 314 workers were employed in this sector. Employment fell sharply during the winter months when, in 2011, only 57 workers were employed during January. Skagway's retail sector, like the economy overall, is highly dependent on visitor spending.

Similar to Haines, a large share of Skagway household spending occurs in Juneau. The 1994 *Juneau Access Household Survey* (McDowell Group, 1994) found that Skagway households spent an average of $1,600 in retail purchases, including $1,100 in groceries, the previous year. Leakage from the Skagway economy has likely increased since then, as a result of improved ferry service to Juneau. Future changes in the transportation infrastructure in Lynn Canal will affect this leakage.

Government

As in most Southeast communities, public sector employment plays an important role in Skagway's economy. Local government employment averaged 98 in 2011, followed by federal government employment at 56, and State government at 14. Collectively, government workers made up 21 percent of the local workforce and earned 26 percent of the total wages in 2011.

Local government employment includes municipal and school district employees. Federal government workers are employed with the National Park Service, customs, and the local Post Office. Future federal employment is expected to be stable. State employment in Skagway is also

expected to remain stable. However, like all communities in Alaska, Skagway may be faced with State employment reductions if State budget shortfalls cannot be resolved.

Seafood Harvesting

According to CFEC records for 2010, all of the five active permit holders in Skagway participated in commercial fishing activities. Halibut, herring, and salmon were harvested. Total pounds landed and estimated gross earnings data were not released due to confidentiality reasons.

Salmon Enhancement

Prior to 2000, two local hatcheries released small numbers of Chinook salmon smolt in the Skagway area for several years. These releases peaked in 1993 and 1994 and helped support a sport fishing charter industry. Skagway and Haines residents requested assistance from the Alaska Department of Fish and Game (ADF&G) to increase hatchery Chinook salmon return to Taiya Inlet. Taiya Inlet is located approximately 4 miles north of Haines and includes the Skagway boat harbor.

The project is executed via a cooperative agreement between ADF&G and the DIPAC Hatchery. The project, which is expected to cost $150,000 over 10 years, is funded by a sport fishing license surcharge that began in 2006. As of 2010, the department's aim was to provide for an additional annual harvest of 2,000 Chinook salmon in the Skagway and Haines marine boat sport fisheries and to generate 4,000 angler-days of fishing effort per year at the terminal release area in Taiya Inlet. Actions taken to produce these results have been to stock up to 250,000 Chinook smolt in the Taiya Inlet each year and to tag up to 30,000 (or 10 percent, whichever is greater) of Taiya Inlet releases.

The process for increasing Chinook salmon fishing stock requires imprinting the salmon in net pens, located in Pullen Creek, and relocating the fish to saltwater net pens in Taiya Inlet prior to release. Returning adults are available to anglers fishing near Haines and in Taiya Inlet, a popular terminal area, and the shoreline adjacent to Pullen Creek is easily accessible from Skagway (ADF&G, 2010).

2.1.3.8 Housing and Real Estate

Municipality of Skagway assessed real property value for 2011 was $316 million (locally assessed value) for all properties (ADCCED, 2011). According to the 2010 Census, there were 636 housing units in Skagway, of which 436 units were occupied. Vacant housing units numbered 200 (31 percent) but 48 of this number were classified as seasonal, recreational, or occasional use units. Also, this vacancy rate does not reflect housing market conditions in the summer, when there are typically fewer housing vacancies. According to the *2020 Skagway Comprehensive Plan*, there is a critical housing shortage of affordable homes for first-time home buyers and a lack of seasonal employee housing (Municipality of Skagway, 2009).

The summer housing situation is limited, with seasonal workers frequently camping and staying in travel trailers. Many summer employees live in tents or trailers in seasonal camping facilities and RV parks. Skagway currently has three private RV parks and one public facility (Skagway Convention and Visitors Bureau, 2012), all of which are near capacity.

2.1.3.9 Municipal Revenues and Expenditures

The Municipality of Skagway generated $14.8 million in revenue for the fiscal year ending June 30, 2010 (see Table 2-21). More than 55 percent of these revenues was generated from sales and real property taxes (about $6.3 million and $1.9 million, respectively). Skagway's mill rates for real property taxes ranged from 1.44 to 8.00 for 2010. The sales tax rate is 3 percent or 5 percent, with the higher rate in effect April through September to cover tourist season (ADCCED, 2010).

Skagway also levied an 8 percent bed tax in 2010, resulting in $158,000 in revenues (ADCCED, 2010).

Table 2-21: Municipality of Skagway Municipal Revenues, 2010

Source of Funds	Revenue Amount	Percent of Revenue Base
Sales taxes	6,343,995	42.9
Excise taxes	3,741,005	25.3
Property taxes	1,855,473	12.6
Intergovernmental	1,666,910	11.3
Contributions and other	363,338	2.5
Investment earnings	271,021	1.8
Service and admission fees	232,435	1.6
Rentals	218,017	1.5
Payments in lieu of taxes	63,476	0.4
Licenses and permits	20,132	0.1
Total revenues	**14,775,802**	100.00

Source: Municipality of Skagway (2010).

General fund expenditures for the Municipality of Skagway represented more than 66 percent of all expenses in 2010. Public safety and public works and streets accounted for more than one-quarter of expenses (see Table 2-22).

Table 2-22: Municipality of Skagway Municipal Expenditures, 2010

Program Expenses	Expenses ($)	Percent of Total Expenses
Governmental activities:		
General government	2,369,328	21.5
Public safety	1,852,909	16.8
Public works and streets	1,178,188	10.7
Culture, recreation, and library	1,009,378	9.1
Education	640,653	5.8
Legal settlement	170,000	1.5
Interest on long-term debt	97,087	0.9
Health Services	13,001	0.1
Total governmental activities	**7,330,544**	**66.4**
Business-type activities:		
Health clinic	1,601,449	14.5
Garbage	718,989	6.5
Water and sewer	702,517	6.4
Port	684,802	6.2
Total business-type activities	**3,707,757**	**33.6**
Total primary government	**11,038,301**	**100.0**

Source: Municipality of Skagway (2010).

2.1.4 Klukwan CDP

2.1.4.1 Population

Klukwan CDP experienced a significant net decrease of one third of its population from 1986 (151) to 2011 (98). The population has decrease at an average annual rate of change of -1.9 percent in the last 5 and 10 years, and -1.4 percent for the last 20 years (see Table 2-23).

Table 2-23: Klukwan Historical Population, 1986–2011

Year	Population	Annual Number Change	Annual Percent Change	5-Year Rate of Change	10-Year Rate of Change	20-Year Rate of Change
1986	151	151				
1987	153	2	1.3%			
1988	151	(2)	-1.3%			
1989	189	38	25.2%			
1990	129	(60)	-31.7%			
1991	129	0	0.0%	-3.1%		
1992	130	1	0.8%			
1993	135	5	3.8%			
1994	140	5	3.7%			
1995	165	25	17.9%			
1996	140	(25)	-15.2%	1.7%	-0.8%	
1997	160	20	14.3%			
1998	141	(19)	-11.9%			
1999	136	(5)	-3.5%			
2000	142	6	4.4%			
2001	119	(23)	-16.2%	-3.2%	-0.8%	
2002	105	(14)	-11.8%			
2003	112	7	6.7%			
2004	118	6	5.4%			
2005	104	(14)	-11.9%			
2006	108	4	3.8%	-1.9%	-2.6%	-1.7%
2007	94	(14)	-13.0%			
2008	75	(19)	-20.2%			
2009	76	1	1.3%			
2010	95	19	25.0%			
2011	98	3	3.2%	-1.9%	-1.9%	-1.4%

Source: Table developed by NEI using population data from ADOLWD.

2.1.4.2 Population Forecast

Table 2-24 shows that there is considerable variability in the historic data for Klukwan's population, which increases the uncertainty in the forecasts for the next 40 years. Keeping this limitation in mind, the analysis suggests that by 2050 there would be fewer than 50 residents under the mid-range and low-end forecast. The medium case scenario is the result of a logarithmic regression using historic data trends. Table 2-24 and Figure 2-27 summarize the Klukwan population forecasts for 2012 through 2050. For further detail regarding population forecasts for Klukwan by year, see Appendix B (AMHS Lynn Canal Market Data and Population Forecast) of Appendix AA (2014 *Traffic Forecast Report*) of the JAI Project Draft SEIS.

Table 2-24: Population Forecasts for Klukwan, 2012–2050

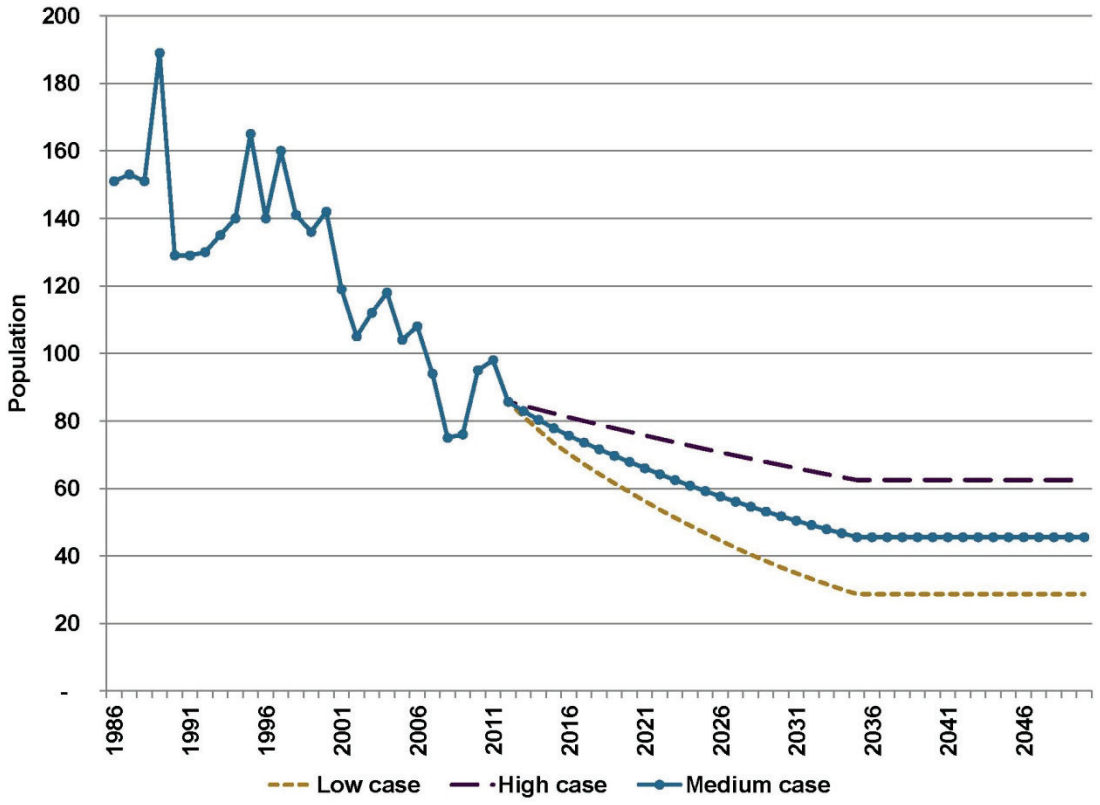
Year	Mid-Range Population Forecast	Annual Number Change	Annual Percent Change	Low-End Population Forecast	High-End Population Forecast
2012	86			86	86
2013	83	(3)	-3.2%	81	85
2014	80	(3)	-3.2%	77	83
2015	78	(2)	-3.1%	73	82
2016	76	(2)	-2.8%	70	81
2017	74	(2)	-2.7%	67	80
2018	72	(2)	-2.7%	64	79
2019	70	(2)	-2.7%	62	78
2020	68	(2)	-2.6%	59	77
2021	66	(2)	-2.7%	56	76
2022	64	(2)	-2.7%	54	75
2023	62	(2)	-2.7%	51	74
2024	61	(2)	-2.7%	49	73
2025	59	(2)	-2.6%	47	72
2026	58	(2)	-2.7%	45	71
2027	56	(2)	-2.7%	42	70
2028	55	(1)	-2.7%	40	69
2029	53	(1)	-2.6%	38	68
2030	52	(1)	-2.6%	37	67
2031	50	(1)	-2.5%	35	66
2032	49	(1)	-2.5%	33	65
2033	48	(1)	-2.5%	32	64
2034	47	(1)	-2.5%	30	63
2035	46	(1)	-2.5%	29	62
2036	46	-	0.0%	29	62
2037	46	-	0.0%	29	62
2038	46	-	0.0%	29	62
2039	46	-	0.0%	29	62
2040	46	-	0.0%	29	62
2041	46	-	0.0%	29	62
2042	46	-	0.0%	29	62
2043	46	-	0.0%	29	62
2044	46	-	0.0%	29	62
2045	46	-	0.0%	29	62
2046	46	-	0.0%	29	62

Year	Mid-Range Population Forecast	Annual Number Change	Annual Percent Change	Low-End Population Forecast	High-End Population Forecast
2047	46	-	0.0%	29	62
2048	46	-	0.0%	29	62
2049	46	-	0.0%	29	62
2050	46	-	0.0%	29	62

Note: For 2012–2035 the high-end population uses an annual rate of change of -1.36 percent (equal to the 20-year rate of change through 2011). The low-end population forecast is projected using the difference between the mid-range and the high-end forecasts. As the ADOLWD forecast only goes to 2035, forecasts for the years 2036–2050 will be a continuation of the forecast for the year 2035 with a zero percent growth rate.

Source: Table developed by NEI using population forecasts from ADOLWD.

Figure 2-27: Historical and Forecast Population for Klukwan



Note: For 2012-2035 the high-end population uses an annual rate of change of -1.36 percent (equal to the 20-year rate of change trough 2011). The low-end population forecast is projected using the difference between the mid-range and the high-end forecasts.

Source: Figure developed by NEI using population data and forecasts from ADOLWD.

2.1.4.3 Klukwan Municipal Revenues and Expenditures

Klukwan is not organized as a city and is governed by the Chilkat Indian Village of Klukwan, an Indian Tribe with a seven-member Tribal Council (Chilkat Indian Village, N.d). Financial information for the tribe is confidential and unavailable.

2.2 Public Utilities Conditions

2.2.1 City and Borough of Juneau

Public utility services offered in the CBJ include water, wastewater treatment, solid waste, hazardous waste and electrical power. Water and wastewater treatment are provided by the CBJ Utility Department. Solid waste is handled by Arrow Refuse, Inc. and Capital Disposal, two private corporations. Hazardous material collection is done during events scheduled throughout the year by Waste Management. Electric power is provided by the Alaska Electric Light & Power Company (AEL&P).

2.2.1.1 Water

Two watersheds supply Juneau's drinking water: the well field in the Last Chance Basin of Gold Creek and the Salmon Creek reservoir. When both sources are operational, residents south of Hospital Drive and all of Douglas Island are supplied by Last Chance Basin and residents north of Hospital Drive and along North Douglas Highway are supplied by water from the Salmon Creek system. The treated water is stored in nine reservoirs with a total capacity of 13.6 million gallons. The public water system services 31,000 customers, and accounts for more than 90 percent of Juneau households (ADCCED, 2012).

The primary source for Juneau drinking water is the Last Chance Basin well on Gold Creek. Average supply from this well is about 3 million gallons per day (MGD). This water source was constructed in 1959 and upgraded in 1976 and 1990. The water is chlorinated but otherwise receives no treatment.

The secondary source for the water system is Salmon Creek. This source is provided in conjunction with AEL&P's Salmon Creek power generation plant. The power plant is fed by a reservoir located in the upper reaches of the Salmon Creek watershed; the AEL&P generator is located near sea level. The CBJ pumps water after it passes through the generator facility. Treatment includes chlorination, and pH and alkalinity adjustment with soda ash, before the water enters the distribution system. This source came online in 1984 when AEL&P rehabilitated the lower Salmon Creek power house. Salmon Creek is an intermittent source due to seasonal high turbidity and annual maintenance on the generator by AEL&P. Salmon Creek typically supplies about one-third of the water area-wide when online.

Source production capacity for both systems is 19 MGD. Current water demand is 5 MGD. The system as designed and installed is not intended to support large demand industrial users.

2.2.1.2 Wastewater Treatment

The CBJ utilizes a complex system of 125 miles of gravity feed sewer mainlines, serving almost 80 percent of Juneau's residents with the remainder utilizing individual septic tanks (ADCCED,

2012). The CBJ operates three wastewater treatment plants: Juneau-Douglas Treatment Facility, Mendenhall Treatment Facility, and Auke Bay Treatment Facility.

The Juneau-Douglas Treatment Facility is approximately 30 years old. The average daily flow through the plant is approximately 1.8 MGD, with peak flow generally occurring in the fall at 5.5 MGD. Annual flow is approximately 657 million gallons. The Juneau-Douglas Treatment Facility's capacity for average volume is 2.76 MGD and a peak capacity is 7.25 MGD. Based on design flow, the facility operates at approximately 80 percent of capacity annually.

The Mendenhall Treatment Facility was substantially expanded in the 1980s and now has the capacity to treat wastewater from the entire valley area as well as the area between the valley and the service area of the Juneau-Douglas wastewater treatment plant. In the early 1990s, a sewage sludge incinerator was completed. The incinerator reduces sludge from both of the main treatment plants to inert ash that is easily disposed of and eliminates the need to place the much higher volume of unburned hazardous sludge in landfills. The capacity is 4.9 MGD with peak flows up to 7.81 MGD. Based on design flow, the facility operates at approximately 66 percent of capacity.

The Auke Bay Treatment Facility was expanded in 2000 when a larger clarifier was added. The facility's capacity for average volume is 0.16 MGD. Based on design flow, the facility operates at approximately 75 percent of capacity.

2.2.1.3 Solid Waste

Solid waste is collected by Arrow Refuse Inc., a subsidiary of Alaska Pacific Environmental. Solid waste is hauled to the landfill facility in the Lemon Creek area. The landfill is operated by Capital Disposal, a subsidiary of Waste Management. The landfill operation has a predicted 20- to 23-year life. Arrow Refuse Inc. offers curbside pickup of recyclable material for a fee. In addition, cardboard, newsprint, aluminum, glass, tin, and white office paper are accepted for recycling at the Juneau Recycling Center in Lemon Creek operated by Waste Management.

2.2.1.4 Hazardous Waste

The CBJ contracts for the collection of hazardous materials. There are six collection events annually for households and small commercial entities, which are funded through a portion of the monthly Waste Management utility fee. Larger businesses and government agencies bringing materials to collection events are charged separately based on material quantities and types.

2.2.1.5 Electricity

The privately owned AEL&P distributes electricity throughout the CBJ. AEL&P serves 14,500 customers, consuming more than 293 million kilowatt-hours of electrical energy each year.

AEL&P gets most of its power from the Snettisham hydropower facility, which is owned by the State. AEL&P operates and maintains the facility under the provisions of a long-term power sales agreement. The Snettisham facility is located 25 miles south of downtown Juneau, but it also generates power from hydropower facilities on Salmon Creek, Annex Creek, Gold Creek, and Lake Dorothy. The Snettisham facility has a maximum generating capacity of 78 megawatts (MW), Salmon Creek has a generating capacity of 6.7 MW, Gold Creek has a generating capacity of 1.6 MW, Annex Creek has generating capacity of 3.6 MW, and Lake Dorothy has a

generating capacity of 14.3 MW. AEL&P also maintains a wide assortment of standby generating facilities for when the primary hydropower source is unavailable. The standby facilities include 14 diesel generators and 4 jet turbine-powered generators with a capacity to provide 91 MW of hydropower and more than 100 percent of that available in diesel backup.

2.2.2 Haines Borough

The City of Haines owns and operates the water and wastewater systems. The City and two privately owned companies provide solid waste disposal. A hazardous waste collection is conducted annually and sponsored by the Haines Borough and Southeast Conference. Electric power is primarily supplied by the Alaska Power and Telephone Company (AP&T).

2.2.2.1 Water

Haines' primary public drinking water source is Lily Lake at 650 feet elevation on the Chilkat Peninsula. The capacity for water treatment limits total water flow to 400 gallons per minute (GPM). Lily Lake drinking water is supplemented by a small groundwater spring-fed system north of Piedad Road. In addition, in 2010, the Borough acquired the Crystal Cathedral groundwater aquifer system from a private firm, which is tapped by two wells off Sawmill Creek Road. The Crystal Cathedral water system will be connected to the main water distribution system. Haines Borough has a pump station at Barnett Drive and Young Street and water storage tanks at Barnett Drive (100,000 gallons), Young Road (280,000 gallons), Skyline Drive (50,000 gallons), Tower Road (320,000 gallons), and FAA Road (630,000 gallons). According to 2000 U.S. Census data, 16 percent of occupied housing units in the Haines Borough are without complete plumbing facilities (RCAP, 2004).

Currently, there are approximately 534 residential and 168 commercial users of water in Haines Borough. Both Lily Lake and the water treatment plant have the capacity to handle current and expected water demand for the next 20 years (Haines Borough, 2012).

2.2.2.2 Wastewater Treatment

A secondary treatment plant was rebuilt into a primary plant in 1993. The plant operates under an Environmental Protection Agency (EPA) 301(h) waiver from secondary treatment for ocean discharges. The plant has a permitted capacity of 1.9 MGD as a monthly average and a daily maximum of 2.9 MGD. Actual plant capacity is based on individual components and the limiting factor is the clarifier, which has an average capacity of about 615,000 gallons per day (GPD), with a peak flow of about 925,000 GPD. Typical flows are in the range of 250,000 to 275,000 GPD. Rarely, in the wettest weather, the system can exceed 1 MGD. The system is adequate to handle expected demand for the next 20 years (Haines Borough, 2012).

2.2.2.3 Solid Waste

The community's landfill is owned and operated by Community Waste Solutions (CWS), a private company. The approximately 45-acre site was originally selected with municipal involvement 25 years ago. The landfill operation has a predicted 25+-year life (Haines Borough, 2012).

In addition to CWS, Acme Transfer, a private company, began accepting solid waste in the mid-2000s for disposal 3 days per week. Acme Transfer, which is located on an approximately 3-acre

parcel of land, either recycles or ships out collected solid waste. A non-profit group operates the recycling center in Haines (Haines Borough, 2012).

2.2.2.4 Hazardous Waste

The Southeast Conference administers a hazardous waste collection program in Haines. Under an agreement with Southeast Conference, Carson Dorn, Inc. provides services for household hazardous waste collection and disposal. The program serves 12 communities in Southeast and Southcentral Alaska, including Haines. Each community holds at least one day-long household hazardous waste collection event each year. The communities schedule their event dates such that the contractor and equipment can move from community to community in the most cost-effective manner.

2.2.2.5 Electricity

Electric power within Haines is supplied by two entities: AP&T and the Inside Passage Electric Cooperative (IPEC; formerly the Tlingit Haida Regional Electric Authority).

AP&T purchased the Haines utility from AEL&P in 1997. AEL&P purchased the utility from Haines Power and Light. AP&T also purchased another small local utility, Mud Bay Utility Co., in 1997. AP&T provides power for both Haines and Skagway from its Goat Lake and Kasidaya Creek hydropower facilities located near Skagway. The Goat Lake facility began operation in 1997, and the submarine cable intertie with Haines was completed in 1999. Goat Lake has the capacity to generate 4 MW of hydropower and 3.2 MW of diesel power. The Kasidaya Creek hydropower project, which came online in 2008, has a peak capacity of 3 MW. AP&T also operates the Lutak hydropower project, which has an installed capacity of 250 kilowatts. AP&T has diesel generators located in Haines that are used when demand exceeds generating capacity, which sometimes occurs in the winter.

Unlike Skagway, where peak demand typically occurs in the summer when tourist-oriented businesses are open and the population more than doubles, Haines peak usage occurs in the winter months, when it is cold and dark, with average usage of 1 million kilowatt-hours per month. This is a reason for the shared electrical generation and use between the two communities. Increased demand in Skagway during the summer months combined with Haines normal usage draws close to 100 percent of the capacity of Goat Lake.

The Kasidaya Creek hydropower project is intended to help offset the load demand of both Skagway and Haines. A benefit of Kasidaya is that it provides AP&T the opportunity to “bank” water, which will decrease its use of diesel-based energy during the winter months, when the water levels are decreased due to harsh weather conditions.

In 2000, a private company, Southern Energy, Inc. (SEI), developed and constructed a small run-of-river hydropower project located near Mile 10 on the Haines Highway. In 2007, IPEC interconnected with the facility. SEI is capable of generating 600 kilowatts of hydropower and 417 kilowatts of diesel power. It currently operates at less than 50 percent of capacity, and low water levels can at times be a problem for the hydropower facility. In 2011, IPEC received a State grant to purchase SEI's hydropower project.

IPEC, located on Mosquito Lake Road, has the capacity to generate 1,160 kilowatts of diesel power. The generators are brought on line occasionally to supplement SEI power during times of low water or maintenance shut-downs. IPEC currently serves 1,286 customers.

2.2.3 Skagway

The Municipality of Skagway provides water, wastewater treatment, and solid waste utility services. Electric power is supplied by AP&T.

2.2.3.1 Water

The Skagway municipal water system is comprised of three wells that tap an aquifer beneath the Skagway River. The wells have been in use since 1966. Skagway has a storage capacity of 300,000 gallons in two 150,000-gallon cedar tanks. Most of Skagway's population is served by municipal water. Residents and businesses beyond the Klondike Highway Bridge generally rely on private wells, as they are not currently served by municipal water.

Average daily usage in non-peak season (fall, winter, spring) is approximately 400,000 GPD. Daily peak summer demand is about 800,000 GPD. Cruise ship water usage has a great impact on the daily flow and water levels. Skagway allows the cruise ships to deplete the water supply down to 40 percent of total reserves. At that point, the water supply is automatically shut off until the reserve is restored to above 40 percent. There are no functioning water meters in town except at the cruise ship docks. Skagway installed water meters and began charging for water use at the cruise ship docks in 1997.

Design work is underway for a booster station for north end users above 15th Street. This project would install another well with a 550-GPM capacity and increase water pressure in the area.

2.2.3.2 Wastewater Treatment

Skagway built a secondary treatment facility that closed in 1978. At that time, Skagway transitioned to a screen and discharge system. In 1991, a primary treatment plant opened, operating on an EPA 301(h) waiver from secondary treatment for ocean discharges. Average daily flow is approximately 200,000 to 300,000 GPD. During summer, the wastewater volumes are higher due to the large number of visitors in town and the commercial bus lines that empty their wastewater systems for processing in Skagway. Similar to the water utility, Skagway's sewer utility rates cover operational expenses, but not capital upgrades such as facility replacement costs, future line extensions, or any proposed plant modifications not currently covered in sewer rates.

2.2.3.3 Solid Waste

Skagway capped the city-owned landfill in 1997. An incinerator was built in 1998 at Mile 5.6 on the Klondike Highway. The incinerator is adequate for non-peak demand but use is maximized during the summer peak. Maximum demand during summer is approximately 8 tons per day and averages between 8 and 16 tons per week for the remainder of the year. Scrap metal is collected and barged out for recycling approximately once per year. Only a small amount of trash is collected directly from small cruise ships. Large cruise ships do not currently leave solid waste in Skagway.

2.2.3.4 Hazardous Waste

The Southeast Conference administers a hazardous waste collection program in Skagway. Under an agreement with Southeast Conference, Carson Dorn, Inc. provides services for household hazardous waste collection and disposal. The program serves 12 communities in Southeast and Southcentral Alaska, including Skagway. Each community, including Skagway, holds at least one day-long household hazardous waste collection event each year. The communities schedule their event dates such that the contractor and equipment can move from community to community in the most cost-effective manner.

2.2.3.5 Electricity

Hydropower for the Municipality of Skagway is generated by AP&T from the Goat, Dewey Lake, and Kasidaya Creek facilities. AP&T provides service to 952 residential and commercial customers. Summer demand approaches 100 percent of generating capacity. Goat Lake hydropower facility began operating in 1997 and is the primary source. Access to the facility is at Mile 7 on the Klondike Highway, 10 miles north of Skagway. Goat Lake provides power to the City of Haines as well as Skagway, and is capable of generating 4 MW of power, with a diesel back-up capacity of 2.4 MW. Dewey Lake is decades old, with a 940-kilowatt capacity. The Dewey Lake system operates intermittently based on water levels, producing approximately 3 million kilowatt hours per year.

The Kasidaya Creek hydropower project, which came online in 2008, has a peak capacity of 3 MW. The new facility helps to offset AP&T's need to use diesel generation in Skagway and Haines.

2.2.4 Klukwan

The Chilkat Indian Village Council provides water, wastewater treatment, and solid waste utility services. Electric power is supplied by IPEC.

2.2.4.1 Water

Water is derived from a groundwater infiltration gallery and is stored in a 126,000-gallon tank. Approximately 90 percent of homes are connected to the piped water and sewer system and are fully plumbed with the remainder utilizing a community septic tank (ADCCED, 2012).

2.2.4.2 Wastewater Treatment

Wastewater treatment is provided by a community septic tank.

2.2.4.3 Solid Waste

The Village Council operates a refuse collection system and Class 3 landfill. A recycling center is also available.

2.2.4.4 Hazardous Waste

There are no hazardous waste disposal sites available in Klukwan.

2.2.4.5 Electricity

Electric power in Klukwan is supplied by IPEC. IPEC is a is a non-profit, tax-exempt, consumer-owned and governed electric utility serving more than 1,200 members in Angoon, Hoonah,

Kake, Klukwan, and the Chilkat Valley. Currently, the cooperative serves 60 members in Klukwan. The village is supplied with hydropower purchased by IPEC from SEI and AP&T. This source is supplemented by power from an IPEC-owned diesel plant. Klukwan has no backup generation.

2.3 Social Environment

This chapter provides information on education, healthcare and social services, public safety, and quality of life in the JAI Project area. The chapter is separated into sections for the CBJ, Borough of Haines, Municipality of Skagway Borough, and City of Klukwan.

2.3.1 City and Borough of Juneau

2.3.1.1 Education

Juneau School District

The Juneau School District serves primary and secondary educational needs within the boundaries of the CBJ. Within the Juneau School District, there are a total of 14 schools: 6 elementary, with 2 offering pre-school classes; 2 middle schools; and 3 high schools. There is also a home school program and a correspondence program, as well as grades 9-12 offered through the Johnson Youth Center. In addition, the regional center for higher education is based in Juneau. The University of Alaska Southeast (UAS) also has a Juneau campus.

Enrollment: Table 2-25 shows enrollment from 2002–2012 for pre-elementary and elementary, middle, and high school students. Total enrollment for the 2011–2012 school year was 5,043 and has slowly declined by 500 students since the 2002–2003 school year.

As of spring 2011, the UAS Juneau campus had an enrollment of 1,856 part-time and 615 full-time students.

Table 2-25: Juneau School District Enrollment, 2002–2012

School Year	Pre-Elementary & Elementary	Junior High	High School	Total
2002-2003	2,854	931	1,758	5,543
2003-2004	2,764	969	1,742	5,475
2004-2005	2,678	871	1,802	5,351
2005-2006	2,562	862	1,849	5,273
2006-2007	2,555	848	1,812	5,215
2007-2008	2,555	741	1,813	5,109
2008-2009	2,567	731	1,738	5,036
2009-2010	2,614	735	1,716	5,065
2010-2011	2,638	741	1,715	5,094
2011-2012	2,685	741	1,617	5,043

Source: State of Alaska (2014), enrollment totals.

Budget: The 2011 Fiscal Year (FY2011) budget was $88.6 million. The FY2012 amended budget was $91.5 million, with a projected actual budget of $94 million. The approved budget for FY2013 is $90.8 million, with 26 percent ($24.4 million) coming from CBJ direct appropriations and 64 percent from State sources (CBJ, 2012a).

Programs and resources: The Juneau School District offers a comprehensive educational program for kindergarten through 12th grade, including vocational education and a number of alternative learning programs to address students' varied needs. The district also serves students who experience some type of disability. As of October 1, 2011, the number of students with disabilities was 853.

During the course of a school year, district staff and students travel out of town by ferry, a combination of ferry/car/bus, or jet to a variety of events and activities. These include academic and extracurricular activities such as debate, foreign language fairs, drama, athletic competitions, and student government conferences. Most student travel occurs at the high school level, but elementary and some middle school classes take field trips via ferry. For example, a number of classes visit the Alaska Chilkat Bald Eagle Preserve in Klukwan during the eagle concentrations. On any given mid-semester weekend, it is likely that several teams or groups of students and teachers or coaches will be traveling out of town. Often, additional days of school are missed because of travel time. Staff travels primarily to Anchorage for conferences, meetings, and staff development activities.

The Juneau School District is involved in cooperative efforts with a number of State and local agencies and private groups to address the wide-ranging needs of students. These include providing access to healthcare, mental health counseling, substance abuse treatment, and programs for emotionally disturbed children. The district also provides teacher and education services to youth who are in the residential and day treatment programs at Miller House and youth in detention at Johnson Youth Center. Youth from throughout Southeast Alaska are placed at Miller House and the Johnson Youth Center.

In addition to traditional neighborhood schools, there are four preschool programs, five elementary schools, two middle schools, and two high schools. The Juneau School District also provides alternative options, such as the Juneau Community Charter School, the Tlingit Culture classrooms at Harborview, and Montessori Borealis, in which students can be enrolled via an application and a wait list. Homeschooling is also offered through the HomeBRIDGE program, which provides support for parents to design their own lesson plans or use a "boxed" curriculum for their elementary/middle school-aged children. At the high school level, the HomeBRIDGE program provides curriculum given by accredited correspondence providers. In addition to the wide variety of public school options, there are three private elementary/middle schools: the Faith Community School, the Juneau Seventh-Day Adventist Christian School, and the Thunder Mountain Academy.

The Juneau office of the University of Alaska Fairbanks (UAF) Cooperative Extension Service is the base for many programs which cover the entirety of Southeast Alaska. Agents work in the areas of 4-H Positive Youth Development; Agriculture and Horticulture; and Health, Home, and

Family Development. In addition, educators and specialists focus on Nutrition Education and Integrated Pest Management.

2.3.1.2 Healthcare and Social Services

Juneau is a regional center for northern Southeast Alaska health and human services. Residents of outlying communities travel to Juneau for emergency and longer term medical, mental health, hospice, prenatal and elder care, and family counseling services, as well as emergency shelter and crisis intervention.

The Bartlett Regional Hospital has 55 inpatient beds. The 54-member credentialed medical staff, representing 22 medical specialties, provides a full range of inpatient and outpatient services. A 2-year renovation and expansion project of the facility was completed in 2010. Bartlett Regional Hospital supports community health centers in Gustavus, Skagway, Tenakee Springs, and Yakutat. Medevac transports are provided by Airlift Northwest, which has an air ambulance based in Juneau full-time. The hospital also offers chemical dependency programs and operates the Juneau Recovery Unit, an inpatient detoxification, counseling and educational program with 17 beds. Bartlett Regional Hospital is the destination of choice for most medical evacuations from outlying communities.

The Juneau Public Health Center is operated by the State of Alaska and provides a wide variety of home health, family planning, family and individual treatment, screening, and education services. SEARHC operates a large clinic in Juneau, which offers medical, dental, mental health, chemical dependency, and social work services to Alaska Natives and their dependents.

Private medical practitioners in Juneau cover a wide range of medical specialties, including alternative medicine. Shanti is a private non-profit serving AIDS and HIV patients. Cornerstone Home Health and Catholic Community Service's Hospice and Home Care of Juneau offer home care and nursing for patients, including terminally ill patients. The Juneau Family Birth Center offers midwifery, birthing facilities, and childbirth preparation classes. Physical therapy is available through, among others, Juneau Physical Therapy and Action Rehab.

The Juneau Alliance for Mental Health, Inc. provides clinical and residential services to mentally ill patients. The Juneau Teen Health Center continues to offer health education and counseling, medical, and mental health services, primarily to high school students. Juneau Youth Services is a private nonprofit providing a range of counseling and emergency youth services, including a 16-bed residential treatment facility.

Help for victims of domestic violence is offered by Aiding Women in Abuse and Rape Emergencies (AWARE). Juneau has a number of alcohol treatment programs. The largest outpatient provider is the non-profit Gastineau Human Services, which also operates programs for individuals transitioning out of the correctional system. Food and temporary shelter for homeless services are provided by the Juneau Homeless Coalition, a partnership of local agencies and non-governmental organizations working together to solve homelessness in Juneau. St. Vincent de Paul and the Salvation Army assist needy families.

Juneau has two larger, long-term care (nursing and/or assisted living) facilities for Alaska seniors: the Juneau Pioneers' Home and Wildflower Court. Altogether, Juneau offers approximately 70 assisted living and 44 nursing home beds. A variety of home and day services for the elderly are available. Catholic Community Service's Southeast Senior Services is the largest program provider and also operates a senior center.

The Central Council Tlingit and Haida Indian Tribes of Alaska (CCTHITA) offers a wide range of social services to Alaska Natives in Juneau and outlying communities throughout Southeast Alaska. REACH (Resources Empowerment and Advocacy in the Community and Home) provides residential services, vocational placement and training, and independent living and training opportunities. SAIL (Southeast Alaska Independent Living) assists people with disabilities.

2.3.1.3 Public Safety

Fire Protection and Emergency Medical Services

Capital City Fire Rescue (CCFR) is the agency responsible for providing fire suppression, emergency medical services (EMS), airport rescue, and firefighting services within the CBJ. These services are provided from five fire stations, three (Auke Bay, Douglas, and Lynn Canal) that are unstaffed volunteer response stations and two (Glacier and Juneau) that are staffed. CCFR has 33 career staff, 70 volunteers, and 9 administrative staff. CCFR serves a population of more than 31,000 residents. The fire service area covers 386 square miles on Douglas Island and the Juneau area out to Mile 20 of the Veterans Memorial Highway.

CCFR also provides EMS and rescue services to areas outside of the fire service area. CCFR operates a full-service Air Medevac Program serving communities surrounding Juneau including: Angoon, Bartlett Cove, Elfin Cove, Excursion Inlet, Haines, Hoonah, Skagway, and Tenakee Springs. CCFR provides Advanced Life Support EMS with four ambulances and two Advance Life Support equipped engines and is staffed with 12 full-time paramedics, 21 full-time emergency medical technicians (EMTs), and approximately 55 EMS volunteers. During the summer months, CCFR hires 4 EMTs to run a Basic Life Support ambulance to facilitate medical transports from the cruise ships, Bartlett Regional Hospital, and private air ambulance services.

Police Protection

The Juneau Police Department (JPD) is headquartered at Lemon Creek and responds to calls throughout the Juneau road system, as far north as Cascade Point, covering an area of 3,081 square miles and a population nearing 31,000. There are 50 sworn officers and 45 civilian staff. The department consists of two divisions: Administrative Support Services and Operations. Within these divisions, there are five units: Patrol, Investigations, Community Service, Records, and Dispatch. The department also maintains specialized teams in SWAT, Bomb Disposal, and Hostage Negotiation.

The Alaska State Troopers maintain a headquarters in Juneau. In addition, the A Detachment of Alaska Wildlife Troopers is headquartered in Juneau and covers the entire mainland and numerous islands of Southeast Alaska.

Search and Rescue

Juneau Mountain Rescue is a volunteer, nonprofit, educational corporation that responds to outdoor and wilderness emergencies requiring technical mountaineering skills. The group is affiliated with State and national mountain rescue networks and with another local organization, SEADOGS, which trains and handles search dogs.

2.3.1.4 Quality of Life

Juneau has a small-town "feel," but is geographically somewhat dispersed. In area, it is the largest of the 50 state capitals. The community has four population centers: downtown Juneau, Douglas, Lemon Creek, and the Mendenhall Valley. Of these, the Mendenhall Valley is the largest in both population and area. In recent years, residential growth has occurred in the more rural areas of north Douglas Island and along the shoreline north of Auke Bay.

Tourism activities add to the economic diversity of Juneau and the strength and vitality of the downtown area. On the other hand, expansion of tourism opportunities has the potential to impact the quality of life for local citizens. There is strong support in some sectors of the community to develop a strategy to manage the impacts of tourism (McDowell Group, 2006).

Cultural opportunities are relatively plentiful in Juneau, considering its size. The community is home to Alaska's best known regional theater, Perseverance Theater, as well as several other theater groups, a community symphony and vocal chorus, and many other musical organizations. CCTHITA and the Alaska Native Brotherhood and Sisterhood sponsor various Native cultural events throughout the year. Both the State of Alaska and the CBJ operate museums in Juneau. Juneau has three public libraries in addition to the State library and archives and the UAS library.

Recreational activities in Juneau are numerous. Sport fishing and, to a lesser extent, hunting are popular. There is a community ski area, ice rink, and swimming pool, in addition to numerous parks and trails for hiking and bicycling. A privately operated tram transports visitors to a mountaintop viewing, hiking, eating, and shopping area during the summer. Several private health clubs provide workout equipment and the largest, the Alaska Club, also has tennis and racquetball courts and will add a gymnasium this winter. The CBJ Community Schools program provides opportunities for organized competition in several sports, including volleyball, basketball, hockey, soccer, baseball, and others. Juneau's Lions Club hosts the annual Gold Medal Basketball Tournament, a week-long gathering of enthusiasts from throughout northern Southeast Alaska.

Shopping opportunities have expanded significantly during the past decade. There are "big box" retailers – Costco, Walmart, and Fred Meyer – as well as a number of smaller department and retail chain stores. According to 2003 *Juneau Access Household Survey* results (McDowell Group, 2003), 72 percent of Juneau residents foresaw making extra trips to or through Haines or Skagway primarily for recreation. Juneau residents expressed the need for improved transportation between Juneau, Haines, and Skagway as very important (46 percent) and important (32 percent). Other popular trip purposes include visiting friends and relatives, business and recreation, shopping, business, and medical.

2.3.2 Haines Borough

2.3.2.1 Education

Haines Borough School District

The Haines Borough School District serves primary and secondary educational needs within the boundaries of the Haines Borough. Within the Haines Borough School District there are four schools: Mosquito Lake Elementary School (kindergarten through 5th grade), Haines Elementary/Middle School (kindergarten through 8th grade), Haines High School (9th grade through 12th grade), and Haines Home School (kindergarten through 12th grade correspondence).

Enrollment: Table 2-26 shows enrollment from 2002–2012 for pre-elementary and elementary, middle, and high school students. Total enrollment has declined slightly from 331 for the 2002–2003 school year to 310 for the 2011–2012 school year with middle and high school enrollment declining and pre-elementary and elementary enrollment increasing.

Table 2-26: Haines Borough School District Enrollment, 2002–2012

School Year	Pre-Elementary & Elementary	Junior High	High School	Total
2002-2003	151	63	117	331
2003-2004	162	70	96	328
2004-2005	148	50	102	300
2005-2006	148	50	97	295
2006-2007	150	48	105	303
2007-2008	155	57	107	319
2008-2009	157	54	101	312
2009-2010	164	46	102	312
2010-2011	153	45	112	310
2011-2012	159	44	107	310

Source: State of Alaska (2014), Haines Borough enrollment totals.

Budget: In FY2011, 56 percent of the Haines Borough School District's $5.7 million budget came from the State of Alaska, 30 percent from Haines Borough, 12 percent from Special Revenue, and the balance from other sources. The approved budget for FY2013 is approximately $5.9 million. Seventy-two percent of the total revenue will come from the State of Alaska, 27 percent from Haines Borough, and the balance from other sources (HBSD, 2012).

Programs and resources: Students and staff from Haines travel to a variety of school-related events around the state. There is usually a team or group of students traveling every weekend starting in October and continuing through May. Most travel occurs by plane or ferry. Students and teachers lose class time to travel schedules and, not uncommonly, to weather delays.

The Haines Borough School District also serves students who experience some type of disability. As of October 1, 2011, the number of students with disabilities was 48.

The Haines Borough School District makes school facilities available for community educational and recreational purposes, providing funding and personnel as well as the use of facilities. Occasionally, the UAF Cooperative Extension Service offers programs for Haines residents, but is not able to provide an ongoing presence in the community.

2.3.2.2 Healthcare and Social Services

Medical services are available at the Haines Medical Clinic operated by SEARHC. The clinic is able to handle most emergency care on a short-term basis, but is not equipped for procedures requiring general anesthesia. Medical evacuation is normally by air to Juneau, which takes approximately 1 hour. If weather precludes travel to Juneau, patients are sometimes transported to Whitehorse by road, which is a 6-hour trip. Clients needing inpatient care are typically transferred to SEARHC's Mt. Edgecombe Hospital in Sitka.

Demand for medical services increases substantially in the summer with the influx of visitors from cruise ships, ferries, and highway vehicles. Medical specialties such as orthopedics, endodontics, ophthalmology, and cardiology are provided by traveling physicians.

Catholic Community Service's Southeast Senior Services operates the Haines Klukwan Senior Center and provides a variety of other programs and services for seniors.

Lynn Canal Counseling Services (LCCS) provides mental health counseling and treatment services in Haines. LCCS counselors also provide substance abuse counseling and treatment.

Domestic violence services in outlying communities are provided mainly by AWARE. The Juneau-based nonprofit conducts an outreach program through volunteers in Haines and Skagway. Victims of violence are sheltered temporarily until they can be transported to Juneau.

2.3.2.3 Public Safety

Fire Protection and Emergency Medical Services

The Haines Volunteer Fire Department has a full-time training officer, full-time fire/EMS responder, fire chief, and 30 to 35 volunteer firemen. The department operates four pumper trucks, two tankers, and two fully equipped ambulances. CCFR's full-service Air Medevac Program serves communities surrounding Juneau, including Haines.

Police Protection

Within the Haines Borough limits are three levels of law enforcement agencies: federal, State, and local. The federal government operates the U.S. Customs and Border Protection, which enforces international transportation of materials and passengers through Haines.

The Haines Police Department employs a police chief, sergeant, four patrol officers, a school resource officer, and five dispatch/jail personnel. The department has 24/7 dispatch responsibility for the Alaska State Troopers, Alaska Parks Department, two volunteer fire departments (Haines and Klehini), and EMS. The department responds to calls in the Townside Service Area, which extends from just past the airport on the Haines Highway to the intersection

of Mud Bay and Small Tracts Roads to approximately 6 miles north of downtown Haines in the direction of Lutak Inlet. The Haines Police Department also operates a six-bed community jail under a contract with the State Department of Corrections.

The Alaska State government provides a District Magistrate, First Judicial District, which handles arraignments and preliminary hearings. Haines has no facilities to hold State felons, who must be either transferred to Juneau or released on their own recognizance. There is one uniformed Alaska State Trooper and one Alaska Wildlife Trooper stationed in Haines.

2.3.2.4 Quality of Life

The *Haines Household Opinion Survey* (McDowell Group, 2011a) provides an indication of how local residents perceive their quality of life. On a scale of 1 to 10, where 1 is very poor and 10 is very good, the average score that residents gave quality of life in Haines was 8.1. The top two reasons people like living in Haines are: the outdoors and natural beauty; and the small town atmosphere and community.

Haines' rich cultural history is an important part of life there. Migrating Tlingits first settled the Haines area. Klukwan, located 22 miles north of Haines, off the Haines Highway, lies at the junction of the Kleheni and Tsirku rivers. Historically the site of important Tlingit cultural artifacts and structures, Klukwan has retained much of the character of a Native village.

Haines' location has been strategic with respect both to fisheries and to transportation links with interior Alaska and Canada. The community had four canneries by 1910. Services for travelers, always an important source of jobs in Haines, became more so after the advent of the AMHS in the 1960s. A former military installation, Fort Seward, is an historic site that, together with a new Tlingit tribal house and the Sheldon Museum, lends character to the downtown area. All of this is framed against a spectacular scenic backdrop of mountains, rivers, and fjords. Today, tourism, fishing, and government are key elements of the Haines economy.

Annual events in Haines include the Alcan 200 International Snowmachine Road Rally from the Haines side of the U.S./Canada border to Dezadeash in Yukon Territory and back to the border; the Great Alaska Craftbeer and Homebrew Festival, featuring the best of regional microbrews, plus music, dinner, and awards ceremony; and the Kluane to Chilkat International Bike Relay starting in Haines Junction, Yukon Territory, and ending in Haines.

According to the 2003 *Juneau Access Household Survey* results, 79 percent of Haines residents foresaw making extra trips to Juneau primarily for shopping. Haines residents expressed the need for improved transportation between Juneau, Haines, and Skagway as very important (65 percent) and important (22 percent). Other popular trip purposes include vacation/recreation, medical, business, visiting friends and relatives, and to catch a jet.

Quality of life for Haines residents, while removed from the political climate in Juneau and close proximity to hospital care, includes a diverse arts community, smaller schools for families with children, highway access to Canadian and Interior Alaska communities, and a drier climate than Juneau has to offer.

2.3.3 Skagway

2.3.3.1 Education

Skagway School District

The Skagway School District serves primary and secondary educational needs within the boundaries of the Municipality of Skagway Borough. The Skagway School District has only one school, Skagway School, which is comprised of students from pre-elementary to 12th grade.

Enrollment: Table 2-27 shows enrollment in the Skagway School District for 2002–2012 for pre-elementary and elementary, middle, and high school students. The school district had total enrollment of 74 students for the 2011–2012 school year, which is a decrease from the total enrollment of 117 students for the 2002–2003 school year.

Table 2-27: Skagway School District Enrollment, 2003–2012

School Year	Pre-Elementary & Elementary	Junior High	High School	Total
2002-2003	58	23	36	117
2003-2004	58	22	30	110
2004-2005	57	19	33	109
2005-2006	48	20	37	105
2006-2007	47	16	35	98
2007-2008	54	17	39	110
2008-2009	47	15	38	100
2009-2010	54	14	37	105
2010-2011	57	5	34	96
2011-2012	44	8	22	74

Source: State of Alaska (2014).

Budget: In FY2011, 59 percent of the Skagway School District's $2.1 million budget came from the Municipality of Skagway, 28 percent from the State of Alaska, 12 percent from Special Revenue, and the balance from other sources. The final revised budget for FY2012 was approximately $2.6 million. Sixty-five percent of the budget came from local funding, 30 percent came from the State of Alaska, and the remaining balance came from other sources (Skagway School District, 2012).

Programs and resources: Student travel to competitions and events is generally by plane or ferry. Flying students to events is expensive and is subject to weather. Ferry travel often results in additional missed class time for students and teachers due to ferry schedules.

The Skagway School District serves students who experience some type of disability. As of October 1, 2011, the number of students with disabilities was nine.

The Skagway School District offers residents a community education and recreation program that uses district facilities.

2.3.3.2 Healthcare and Social Services

The Dahl Memorial Clinic is owned and operated by the Municipality of Skagway although it contracts management services through an agreement with Bartlett Regional Hospital. The clinic is the only healthcare provider in Skagway providing general medical, emergency care, and some special services for the community. The clinic is overseen by an administrator and staffed by two mid-level providers, a nurse practitioner, a physician′s assistant, and support staff. Itinerant doctors from Juneau visit the clinic on a rotating basis, which include a dentist, pediatrician, public health nurse, and other specialists. There are currently no beds at the facility; services are on an outpatient basis only. The clinic is a non-profit corporation receiving funding from the Municipality of Skagway, a rural health grant from the State, fees, and donations. The Municipality provides the clinic building, pays all utilities and repairs, and owns most of the equipment. The community is very supportive, as evidenced by its willingness to assist the clinic financially. The clinic is well-equipped for routine general medical care and emergencies. However, the clinic board and staff are working towards replacing the facility with a new healthcare building.

The Skagway Volunteer Fire Department (SVFD) also provides emergency medical care. EMS is provided as far as Mile 32 on the Klondike Highway. Emergency medical calls have increased in recent years as a result of increased summer cruise ship visits. Many of these calls are for heart attacks or strokes or other medical needs of elderly cruise ship clients. CCFR's full-service Air Medevac Program serves communities surrounding Juneau including Skagway. If emergency transportation to Juneau is not possible, volunteer EMTs transport the patient by ambulance to Whitehorse.

LCCS of Haines provides mental health counseling and treatment services in Skagway. LCCS counselors also provide substance abuse counseling and treatment.

The AWARE Shelter in Juneau provides an outreach program to women and children in Skagway. There are volunteers who can provide support and temporary shelter at "safe homes" until the women and children can be transported to Juneau. Catholic Community Service's Southeast Senior Services operates the Skagway Senior Center and provides a variety of other programs and services for seniors.

2.3.3.3 Public Safety

Fire Protection

Skagway's fire protection is provided by the SVFD. Originally, the organization provided only fire suppression services. SVFD currently provides fire protection, EMS and rescue services, fire and medical training, and fire prevention education. The department is also responsible for building plan review and building fire inspections. It also serves as the Civil Defense coordination center, which has response plans for natural disasters, highway disasters, railroad accidents, air disasters, power plan and fuel tank fires, and snow emergencies.

The department has two full-time employees, two part-time employees, and 34 volunteers. One of the full-time jobs is fire chief and the other is a combined EMS responder and administrative position. Fire services are provided in road-accessed areas within the Municipality of Skagway Borough and as far north as the Canadian customs office in Fraser (Mile 23 on the Klondike Highway).

Police Protection

Within the Municipality of Skagway Borough limits there are three levels of law enforcement agencies: federal, State, and local. The federal government operates the U.S. Customs and Border Protection, which enforces international transportation of materials and passengers through Skagway, and the National Park Service, which enforces federal regulations within the Klondike Gold Rush National Historical Park.

The Alaska State government provides a District Magistrate, First Judicial District, which handles arraignments and preliminary hearings. Skagway has no facilities to hold State felons, who must be either transferred to Juneau or released on their own recognizance. There are no State Troopers located in Skagway.

The local Skagway Police Department (SPD) operates with seven full-time and four seasonal employees. The SPD jurisdiction extends to the U.S./Canadian border, located at Mile 15 on the Klondike Highway.

2.3.3.4 Quality of Life

Objective information on how the residents of Skagway perceive their quality of life is not available. The 2008 Skagway Community Opinion Survey clearly shows that residents value the small town atmosphere where there is time for family and neighbors, a feeling of safety and that people care about one another, the ability to make a decent living, and the area's beauty and abundant outdoor and indoor recreation opportunities. Resident's comments on their quality of life seem to indicate that a good balance is being maintained to date. When asked to rate their quality of life in Skagway on a 1-to-10 scale, two-thirds of adults and almost half of the community's teenagers rate it an "8" or higher (McDowell Group, 2008).

Life in Skagway ranges from the winter-time quiet, when non-resident traffic is almost non-existent and only a few hundred people reside in the community, to the crowded, frantic pace of summer, when cruise ships can bring 6,000 to 8,000 visitors to the community in a single day. Tourism is the mainstay of Skagway's economy and is an integral part of the community. Skagway has welcomed tourism, while attempting to take appropriate steps to manage its impacts. The essence of this management is to ensure that tourism is conducted in a manner that is compatible with the community's needs and interests (McDowell Group, 2008).

Skagway's history has been marked by boom and bust. At the peak of the Klondike Gold Rush in 1897, Skagway was the largest city in Alaska, with a population of 20,000 people. By 1910, the population had declined to 872. The present population is approximately 840 people.

The Skagway economy in the past was very dependent on freight service provided by the White Pass and Yukon Route railroad. When the railroad shut down in 1982, many residents were put

out of work and the economy shifted to tourism. The Skagway economy is now directly linked to its location as the northern terminus in Southeast Alaska for State ferries and cruise ship operators. Tourism-related jobs are the main industry in town, including employment on the railroad that reopened in the early 1990s to serve tourists (City of Skagway, 1991).

Life changed in Skagway with the Klondike Highway construction project, which was completed in 1978. The year-round opening of the Klondike Highway between the cities of Skagway and Whitehorse in early 1986 was also significant as it made Skagway one of two cities in Southeast Alaska to have highway access to Interior Alaska and Canada. This changed regional transportation patterns and opened up use of the Skagway port for transshipment to Canada. Ferry traffic increased 15 percent during the first year-round opening of the Klondike Highway. The year-round opening of the Klondike Highway was coupled with the reopening of the White Pass and Yukon Railroad to tourists for the summer season and a shift took place in the Skagway employment from transportation/government employment to more seasonal tourism-related jobs.

Other features add to Skagway's character as a community. Skagway serves as the starting point for the historic 33-mile-long Chilkoot Trail. Annual events include the Buckwheat Ski Classic, a cross country ski race; the annual International Softball Tournament, with teams from Alaska and Canada competing; and the Klondike Road Relay, a 110-mile relay race that begins in Skagway and ends in Whitehorse, Yukon.

Life in Skagway includes few shopping opportunities. According to the 2003 *Juneau Access Household Survey* results, 58 percent of Skagway residents foresaw making extra trips to Juneau, with improved access, primarily for shopping. Most Skagway residents (73 percent) believe improved transportation between Juneau, Haines, and Skagway is important. In addition to shopping, Skagway wants better access to Juneau for vacation/recreation, medical services, business, visiting friends and relatives, and to catch a jet.

2.3.4 Klukwan

2.3.4.1 Education

Chatham School District

The Chatham School District serves primary and secondary educational needs in an area of approximately 43,000 square miles stretching from Angoon to Klukwan and beyond Haines, and is comprised of four schools in separate communities: Angoon on Admiralty Island, Tenakee Springs on Chichagof Island, Gustavus, and Klukwan.

Enrollment: Klukwan's only school is within the Chatham School District. Table 2-28 shows enrollment in the school district for 2002–2012 for pre-elementary and elementary, middle, and high school students. The Chatham School District enrollment has declined from an enrollment of 223 students for the 2002–2003 school year to an enrollment of 153 students for the 2011–2012 school year.

Table 2-28: Chatham School District Enrollment, 2002–2012

School Year	Pre-Elementary & Elementary	Junior High	High School	Total
2002-2003	109	48	66	223
2003-2004	100	38	81	219
2004-2005	93	43	71	207
2005-2006	93	45	73	211
2006-2007	93	35	74	202
2007-2008	87	21	65	173
2008-2009	83	18	56	157
2009-2010	81	23	57	161
2010-2011	83	33	42	158
2011-2012	86	32	35	153

Source: State of Alaska (2014).

Students are enrolled in kindergarten through 12th grade at Klukwan's only school. Table 2-29 shows enrollment in the school district for 2002–2012 for pre-elementary and elementary, middle, and high school students. Enrollment has shown a declining trend, with the number of students decreasing from an enrollment of 41 students for the 2002–2003 school year to 15 students for the 2011–2012 school year.

Table 2-29: Klukwan School Enrollment, 2002–2012

School Year	Pre-Elementary & Elementary	Junior High	High School	Total
2002-2003	20	14	7	41
2003-2004	19	8	12	39
2004-2005	22	7	8	37
2005-2006	22	5	11	38
2006-2007	18	3	12	33
2007-2008	11	2	10	23
2008-2009	12	2	2	16
2009-2010	9	2	7	18
2010-2011	8	3	3	14
2011-2012	8	5	2	15

Source: State of Alaska (2014).

Budget: In FY2011, 58 percent of the Chatham School District's $4.5 million budget came from the State of Alaska, 22 percent from Special Revenue, 18 percent from the federal government, and the balance from other sources.

Programs and resources: Student travel to competitions and events is generally by plane or ferry. Flying students to events is expensive to the district and is subject to weather. Ferry travel often results in additional missed class time for students and teachers due to ferry schedules.

The Chatham School District serves students who experience some type of disability. As of October 1, 2011, the number of students with disabilities was 23.

2.3.4.2 Healthcare and Social Services

SEARHC operates a physician-staffed clinic in Klukwan. Medical services at the clinic are provided by an advanced registered nurse practitioner and itinerant doctors from the Haines Health Center. Emergency services have highway, marine, and helicopter access and are within 30 minutes of a higher-level satellite healthcare facility in Haines.

LCCS of Haines provide mental health counseling and treatment services in Klukwan. LCCS counselors also provide substance abuse counseling and treatment.

The AWARE Shelter in Juneau provides an outreach program to women and children in Klukwan. There are volunteers who can provide support and temporary shelter at "safe homes" until the women and children can be transported to Juneau.

2.3.4.3 Public Safety

Fire Protection

In 2010, the Klukwan Volunteer Fire Department (KVFD) was established and registered by the State of Alaska and a new fire truck was purchased. The KVFD currently provides fire protection, EMS and rescue services, fire and medical training, and fire prevention education.

Police Protection

There are no federal, State, or local law enforcement agencies in Klukwan.

2.3.4.4 Quality of Life

Objective information on how the residents of Klukwan perceive their quality of life is not available. Klukwan is a traditional Tlingit village. The Chilkat Indians tightly controlled the trails to trade with Interior Indians. At that time, the Chilkat numbered approximately 1,000 among five area villages. In 1881, the Willard Mission and School was constructed in Haines. Four canneries were built in the area by the turn of the century. In the late 1890s, the Dalton Trail from Chilkat Inlet to Whitehorse offered an easier route for wagons and cattle to the Klondike gold fields. However, the Chilkoot Trail out of Skagway was used by most prospectors. When Klukwan created its Indian Reorganization Act government in the 1930s, it was given the title of "Chilkat Indian Village." Chilkat Indian Village is the last remaining village of the Chilkat Indians, once the most powerful of 17 Tlingit tribes. The FY11 population is approximately 98 people (Chilkat Indian Village, N.d).

Klukwan is accessible from the Haines Highway, which is connected to the Alcan Highway through Canada. The community is dependent on the transportation infrastructure of Haines for goods, services, and travel.

Logging, tourism, and Native art and crafts provide jobs and income. The community is also dependent on subsistence. Salmon, halibut, shellfish, deer, mountain sheep, bear, and berries are harvested in season.

3. Effects of Access Improvement

3.1 Economic Environment

In this analysis, the socioeconomic effects of each alternative are described. Whenever possible, these effects are quantified. Where impacts cannot be quantified, and where the relative importance of socioeconomic effects is described, the terms negligible, minor, substantial or major are used. These descriptions are somewhat subjective, but are generally defined as follows:

Negligible: There would be effects; however, they would not be noticeable and would be very small in comparison to other events or trends in the baseline socioeconomic environment.

Minor: Effects would be noticeable, but would not change a community's basic socioeconomic environment. Other events or trends in the baseline socioeconomic environment would have a greater effect.

Substantial: Effects would alter an economic sector or one or more components of a community's basic socioeconomic environment.

Major: Effects would fundamentally change the socioeconomic environment. The effect would overshadow other events or trends in the baseline socioeconomic environment.

3.1.1 General Effects of Improved Access

Important background information for this socioeconomic effects analysis is provided in the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS). The report provides traffic forecasts for each JAI Project alternative for 2020 and 2050. The report also provides traffic numbers between Juneau and Haines and between Juneau and Skagway. Total traffic, and Juneau to Haines and Skagway traffic, are summarized for each alternative in Table 3-1. Traffic is presented in terms of annual average daily traffic (ADT). Annual ADT is the average daily volume of traffic on the highway or ferry, in both directions (one-way traffic would be half the annual ADT).

Table 3-1: Juneau Access Traffic Forecasts by Alternative (between Juneau and Haines or Skagway), 2020 and 2050

Juneau Access Alternative	2020			2050		
	Annual ADT	Haines Traffic	Skagway Traffic	Annual ADT	Haines Traffic	Skagway Traffic
Alternative 1 - No Action	90	55	35	90	55	35
Alternative 1B - Enhanced Service with Existing AMHS Assets	115	60	55	115	60	55
Alternative 2B - East Lynn Canal Highway to Katzehin	835	455	380	825	450	375
Alternative 3 - West Lynn Canal Highway	655	420	235	650	415	235
Alternative 4A - FVF Service from Auke Bay	165	90	75	165	90	75
Alternative 4B - FVF Service from Berners Bay	265	145	120	265	145	120
Alternative 4C - Conventional Monohull Service from Auke Bay	100	55	45	100	55	45
Alternative 4D - Conventional Monohull Service from Berners Bay	245	135	110	245	135	110

Source: 2014 *Juneau Access Traffic Forecast Report*, (Appendix AA of the 2014 JAI Project Draft SEIS).
Note: Traffic volumes have been rounded to the nearest five.

3.1.1.1 Overview

Improved access in the Lynn Canal area will facilitate the movement of goods and people through and to the northern Southeast region. This will create closer links between the economies of Juneau, Haines, Skagway, and Whitehorse as well as the smaller communities in the area. For example, residents of Haines and Skagway will have better access to Juneau's retail and service sector, which will result in a change in the retail structure and environment in those communities. Similarly, residents of Juneau will have better access to the recreational opportunities available in Haines, Skagway, and destinations beyond those communities on the Alaska/Canada highway systems.

In the near-term, improved access to Juneau through highway construction or improved AMHS service is not expected to result in new major economic development in Alaska. For example, improved access to and from Juneau is not likely to result in a large increase in the number of visitors traveling to the State. Visitors to Alaska are unlikely to spend much more time or inject more money into the State's economy as a result of access improvements. Similarly, access improvement is not expected to result in increased forest products, mining, or other industrial activity.

Improved access to Juneau would redistribute within the State some of the economic benefits received from one of Alaska's primary basic industries, the visitor industry. Visitors could shift their travel patterns, perhaps spending more time and money in Southeast Alaska, particularly in Juneau.

The redistribution of tourism-related economic benefits might result in net economic gain in one area of the State, offset by economic loss in another. Improved access would, for example, result over the long term in an overall increase in Southeast Alaska's independent visitor market, with a possible corresponding decrease in time and money spent in other areas of the State. Likewise, on a regional basis, improved access would result in a net gain to Juneau's local retail industry, while Haines and Skagway could realize some loss in certain types of retail sales. This issue is discussed in more detail in the following sections.

Improved access would also reduce the cost of transporting certain products and materials to and from Juneau. For example, the seafood industry could realize an economic gain as a result of improved access to fresh fish markets. The magnitude of benefits such as this is highly dependent on the access improvement alternative.

3.1.1.2 General Effects of Improved Access on Commercial Fisheries

Potential impacts to commercial fishermen from the JAI Project include:

- Increased income for fishermen as a result of better access to fresh fish markets
- Increased competition by sport fishers with the alternatives that provide better access to fishing opportunities in areas that were not previously accessible to this user group

Potential impacts to commercial fish processors from the JAI Project include:

- Changes in fishermen's deliveries to processors as a result of improved access
- Alternative market delivery expansion to Canada or other Alaska areas; ability to change product form (i.e., fresh rather than frozen) due to reduced costs and improved proximity to market destination
- Increased income as a result of better access to fresh fish markets

The potential effect of the first type of impact would be a shift of fishermen's delivery to the processors from one community to the detriment of another (Haines to Juneau, for instance). The potential effect of impacts on processors would be positive in terms of expansion of markets and ability to diversify product form to meet market demands.

The relative effect of each of these impacts differs by construction alternative. The general impact of both of the alternatives that include highway construction is discussed first. This is followed with more specific information for each of the alternatives.

3.1.1.3 General Effects of Improved Access on the Transportation Industry

There are private and public components to the Lynn Canal/northern Southeast Alaska transportation infrastructure that would be affected by each of the improved access alternatives. These include:

- Air taxi operations between Juneau, Haines, and Skagway
- Major airline services
- Waterborne freight shipment patterns into and out of Juneau, Haines, and Skagway
- Private ferry services
- AMHS operations

These components of the Lynn Canal transportation infrastructure are discussed below.

2013 Air Taxi Operations[5]

Improved access to Juneau is likely to divert some traffic from the air taxi operators currently serving Lynn Canal. Although it is difficult to predict to what degree this might occur, the following section provides an overview of the different factors and possible impacts involved in improving access in Lynn Canal.

Overall, air taxi passenger traffic between Juneau, Haines, and Skagway totaled approximately 30,000 passengers in 2011, including both residents and non- residents (NEI, 2012). Both resident and non-resident air travel behavior are likely to be affected by improved access.

The level of impact will depend on a number of different factors. Trip purpose will play a major role in travelers' transportation decisions. With highway access, people traveling for pleasure or vacation purposes would be more likely to take advantage of the opportunity to travel by vehicle, and are not as time-sensitive as other travelers. Business travelers, on the other hand, are more time-sensitive *and* less cost-sensitive, and are thus more likely to continue to fly. Haines and Skagway residents traveling to Juneau for the purpose of shopping would appreciate the cargo room a vehicle offers, while those traveling to catch a jet would appreciate the airport-to-airport convenience of flying rather than driving.

It is clear that each alternative would result in different air traffic diversion levels depending on travel times and costs. While the improved ferry service alternatives (1B, 4A, and 4C) would lead to the least diversion of air traffic, the East Lynn Canal Highway would result in more air traffic diversion than the West Lynn Canal Highway, and the greatest air traffic diversion because of the resulting savings in terms of both time and traveling costs.

Much of the mail that is now carried by air between Juneau, Haines, and Skagway would be carried on a highway.

In interviews conducted in 2006 for the JAI Project, local air taxi operators noted that the addition of the Lynn Canal day ferry in 1998 reduced air passenger loads in Lynn Canal. This is supported by available data. For example, air traffic from Juneau to Haines (all carriers) totaled 10,014 passengers in 1998, and in 2001, a total of only 6,939 passengers flew from Juneau to

[5] The effects of improved access on air taxi operations are considered in Section 3.1.1.2, General Effects of Improved Access on the Transportation Industry, in the 2004 *Socioeconomic Effects Technical Report*. This narrative, prepared for Appendix W *Technical Report Addenda* of the 2006 FEIS, supplements that analysis. It has been updated to reflect current conditions.

Haines. By 2011, however, 9,135 passengers flew from Juneau to Haines (all carriers) and a total of approximately 30,000 passengers (all carriers) flew between Juneau and Haines or Skagway.

Improved access has the potential to reduce air traffic and anticipated economic impacts, including the loss of jobs and loss of air taxi business sales. In 2003, the three primary air taxi operations serving Lynn Canal employed an annual average of 118 workers (this included Wings of Alaska, LAB Flying Service [not in operation since 2008], and Skagway Air [not in operation since 2007]). The dependence of these three carriers on Lynn Canal traffic ranged from approximately 40 percent to 85 percent of total revenues. Based on these percentages, air taxi employment in the Lynn Canal market averaged 54 jobs in 2003 (this is a weighted average based on each carrier's employment and dependence on Lynn Canal). As of 2012, two airlines serve Haines and Skagway from Juneau, Juneau Air Excursions LLC (currently operating as Alaska Seaplanes) and Wings of Alaska. ADOLWD (Alaska Employers List) shows that together these airlines employ between 60 and 118 people (ADOLWD, 2013a). Employment is total employment by an air taxi company and includes employees for scheduled/charter service as well as excursions.

If 10 percent of air traffic is diverted to surface transportation, and if it is assumed that the result is a 10 percent decline in employment, the employment loss would total approximately 6 to 12 jobs. Based on a 2009 average annual salary of $38,700 for workers in the Transportation and Warehousing sector (Abrahamson, 2011), lost payroll would total between $232,200 and $464,400 annually. If 40 percent of air traffic is diverted to surface transportation, and if it is assumed that the result is a 40 percent decline in Lynn Canal air taxi employment, the employment loss would total approximately 24 to 47 jobs, along with approximately $928,800 to $1,818,900 in annual payroll.

In 2011, the Lynn Canal air taxi market, which included approximately 30,000 travelers from Juneau to Haines and Skagway and another 5,500 between Haines and Skagway, likely accounted for approximately $4.2 million[6] in total gross revenues in 2011 (Wings of Alaska, 2013; Alaska Seaplanes, 2013). A 10 percent reduction in the market would result in a $417,300 loss to carriers. A 40 percent decline in the market would cost carriers approximately $1.7 million in sales.

Some of the loss in air carrier employment and sales could be offset by commercial ground transportation services that would develop if a highway linking Juneau and Northern Lynn Canal were constructed. Further, the decline in air taxi employment and sales does not necessarily represent a net loss to the region's economy. Lower transportation costs will provide a savings to travelers. Money saved by residents through lower-cost transportation is likely to be spent in the local economy on other goods or services. Similarly, lower-cost transportation for non-resident visitors would also free up money for local spending on other goods and services (which could generate new employment in those sectors where additional spending occurs).

The impact of improved surface access could include a reduction in the frequency of air service in Lynn Canal. Service frequency could decline, though not necessarily, at about the same rate as

[6] Gross revenues were calculated using Wings of Alaska and Alaska Seaplanes (formerly Juneau Air Excursions LLC) 2013 fares (Alaska Seaplanes, 2013; Wings of Alaska, 2013).

traffic overall, that is, from 10 percent (Alternative 4C) to 40 percent (East Lynn Canal Highway). Carriers could reduce the number of flights and/or use smaller-capacity aircraft to adjust to the reduced demand for service. With a shift to smaller aircraft, service frequency may not decline.

Another factor to consider is the long-term effects of a diminished Lynn Canal air passenger market. A reduction in the demand for Lynn Canal air taxi service could affect airfares. With some reduction in economy-of-scale, the per-traveler cost to provide air taxi service in Lynn Canal could increase. Carriers may pass this increase in cost on to their customers. These measures will make the alternatives (whether highway or ferry) that much more appealing to travelers, further reducing air traffic.

In addition, individual businesses will feel the impacts differently regardless of which alternative is implemented, because they each have a different level of dependence on the Juneau-Haines-Skagway corridor. Businesses with a strong base of flightseeing customers, for example, will feel the impacts to a lesser degree, as will operators that serve communities in central Southeast Alaska in addition to Lynn Canal.

In conclusion, improved access in Lynn Canal is likely to have a negative impact, which could be substantial, on local air taxi operators. This impact will vary according to alternative, with both highway alternatives most likely to result in a substantial negative impact, and the improved ferry service resulting in moderate negative impact. The two air carriers currently operating in Lynn Canal employ between 10 and 19 (Air Excursions) and 50 and 99 (Wings of Alaska) people, and are between 40 and 90 percent dependent on the Lynn Canal market in terms of revenues (ADOLWD, 2013a).

Major Airline Traffic

Juneau has regularly scheduled northbound and southbound jet passenger and cargo flights. Alaska Airlines passenger volumes would be negligibly affected by any of the improved transportation alternatives. Cost-conscious travelers from Interior Alaska may elect to travel to Juneau if a highway were available; however, air transportation is likely to remain the primary transportation link between Juneau and Southcentral/Interior Alaska.

Over the long term, some freight that now moves by air could be diverted to a highway. For example, the U.S. Postal Service, parcel delivery services, and others might add overland trucking to their range of shipping options for Juneau. Improved ferry service alternatives are not likely to change jet air freight traffic to or from Juneau.

Improved access could also change how fresh fish is shipped out of Juneau. The volume of fish that currently moves out on commercial jets could be impacted. With a highway connection, fish that is processed in Juneau may be trucked from Juneau and sold in the fresh market, possibly displacing some of the fresh fish currently being shipped out via scheduled airline flights. Impacts on the seafood processing industry are described elsewhere in this report.

Waterborne Freight

Improved access to Juneau would change the way surface freight moves to and from Juneau, as well as between Juneau, Haines, and Skagway. Little or no change is expected because they do not provide uninterrupted highway access.

A detailed analysis of the impact of the East Lynn Canal Highway is provided in the analysis of General Effects of the East Lynn Canal Highway (Section 3.1.4.1).

Private Ferry Operations

All of the JAI Project alternatives include improved vehicle access between Haines and Skagway. For all alternatives, Haines and Skagway are linked with shuttle ferry service between the two communities.

Chilkat Cruises and Tours operate the Haines-Skagway Fast Ferry passenger service. Summer service runs mid-May to mid-September with daily trips. The ferry service is primarily for transporting Skagway cruise passengers to Haines for scheduled day tours. The Haines-Skagway Fast Ferry service is the only private ferry system currently operating between Haines and Skagway (there are no winter operations). The company operates two fast ferries, the Fairweather Express and the Spirit (Haines-Skagway Fast Ferry, LLC 2012).

Private passenger-only ferry service between Skagway and Haines would not be substantially affected by a shuttle ferry. The private ferry service can be very frequent and responsive to demand (depending on cruise ship-related traffic). In 2012, adult passenger fares were $35 one way and $68 round trip for the 45-minute high-speed catamaran trip. The shuttle ferry service will be less frequent and slower than the private fast ferry, but will be less expensive; however, relatively little private ferry traffic would be expected to divert to the shuttle. The inconvenient location of the AMHS Lutak Ferry Terminal will also constrain walk-on traffic, relative to the downtown location of the high-speed catamaran. The shuttle's primary market will be travelers with vehicles, rather than walk-ons.

Alaska Fjordlines passenger service between Skagway, Haines, and Juneau could be affected by improved access in Lynn Canal. The 65-foot Fjordland provides daily summer passenger service (mid-May to September) from Skagway and Haines to Juneau and back. The trip is sold as a roundtrip package with wildlife viewing and sightseeing in Lynn Canal plus a motorcoach tour of Juneau and Mendenhall Glacier. Improved access could reduce the demand for this particular service.

A new Lynn Canal transportation service may be initiated in the future. Pacific Seaflight plans to offer passenger service between Juneau, Haines, and Skagway in three 50-passenger "wingship marine vessels" (WSH-500). However, they announced their service would be priced at approximately 30 percent less than comparable air taxi service and would begin operations in 2013 (Pacific Seaflight, 2012). As of October 2013, Pacific Seaflight does not offer service in Lynn Canal.

Regional Ferry Service

AMHS serves passengers and vehicles moving throughout Southeast Alaska and coastal communities in Southcentral and Southwest Alaska. The impact of the JAI Project on service in other areas will depend on the alternative and on AMHS management priorities. With the marine-based alternatives, the AMHS would continue to dedicate resources to meet the demand for service in Lynn Canal. With a highway, mainline service would terminate at Auke Bay, and no mainline ferries would be used in Lynn Canal.

The net cost of providing ferry service in Lynn Canal under any of the alternatives will depend on fare structures, scheduling, and resulting traffic volumes. Ferry service in Lynn Canal does not now pay for itself, nor would it with any of the All-Marine alternatives or Alternative 1B.

The 2004 Southeast Alaska Transportation Plan (SATP) Update provides a plan for replacing mainline ferries with dedicated point-to-point ferries. The plan also includes twice-weekly mainline ferry service from Bellingham, Washington. With an all-marine alternative, mainline service will include Haines and Skagway stops. The SATP is currently being updated with a draft anticipated in 2014.

AMHS management would determine how AMHS service to other communities and regions might change with the East Lynn Canal Highway or the West Lynn Canal Highway. With Juneau serving as the northern terminus for mainline service, the AMHS would have the option to increase service frequency elsewhere in the region.

In summary, with a Lynn Canal highway (the East Lynn Canal Highway or the West Lynn Canal Highway), the AMHS would give careful consideration to the cost and revenue implications of freed-up Lynn Canal assets. In the East Lynn Canal Highway and the West Lynn Canal Highway, mainline service would not be provided in Lynn Canal, so AMHS can adjust their operations to incorporate the additional mainline ferry hours (approximately 36 hours in summer and 18 hours in winter). AMHS can use these hours to stop in additional communities during the mainline route, increase the time at port, or sail slower to reduce fuel consumption.

3.1.1.4 General Effects of Improved Access on Government

State government employment and activity in Juneau, Haines, and Skagway are likely to experience negligible to minor impacts from improved access. In Juneau, however, improved access has been an issue raised in countering efforts to move the capital. Some Juneau residents believe that providing highway access would help retain the capital in Juneau. Other residents believe that building a highway would have little or no impact on efforts to relocate the capital. To the extent that highway construction allays the capital access issue, it will assist in efforts to maintain Juneau as the capital city. In 2002, it was estimated that if the capital were moved, Juneau could lose as many as 5,000 jobs, 30 percent of all local employment, and about 8,000 residents (25 percent of the population) (McDowell Group, 2002b). More recent information is not available.

Local, State, and federal government would be affected in more direct ways as a result of improved access. Providing road maintenance and public safety services along the newly constructed highway would require government expenditures (see Section 3.1.1.7, General

Effects of Improved Access on Municipal Revenues and Expenditures). The federal government, as a key land manager in the Lynn Canal area, would incur additional land management-related costs. These and other government-related effects are discussed in more detail in the Public Services section of this report.

Operation of Day Boat ACFs in North Lynn Canal will create State government (AMHS) job opportunities in Haines and Skagway. Under Alternatives 2B, 3, 4A, 4B, 4C, and 4D, there would be State jobs in Haines associated with the new ferry between Haines and Skagway. The number of jobs would depend on the number of crew needed to operate the ferry. Under the East Lynn Canal Highway, there would be approximately 20 jobs in Skagway. Under Alternative 1B, the *M/V Malaspina* would be homeported in Skagway; however, this would not generate additional jobs in Skagway because crew members live aboard the ferry.

State government expenditures on ferry operations and road maintenance are provided in other components of the JAI Project Draft SEIS such as the 2014 *Lynn Canal Revenues and Expenditures Report*, the 2014 *User Benefit Analysis*, 2014 *Technical Alignment Report*, etc.

3.1.1.5 General Effects of Improved Access on Population

In general, negligible to minor population changes would be expected in Juneau, Haines, and Skagway with improved access. Population changes may occur as the result of changing the homeport of an AMHS ferry or additional workers needed as a result of the traffic-related increases in economic activity. Information about population changes is discussed under each alternative. For example, the No Action Alternative is associated with population changes because there will be one Day Boat ACF based in Juneau and another Day Boat ACF based in Haines. The Juneau-based Day Boat ACF will have two shifts consisting of nine crew members and three night watch while the Haines based vessel will have two shifts of nine crew members and one night watch.

It is possible, however, that improved access would enhance Haines' reputation as a retirement community (through better access to Juneau's retail and service sectors, particularly health care services and cultural activities). To the extent that this occurs, Haines population would grow as a result of improved access. Better access to Haines would also increase the number of Juneau residents with second homes or cabins in the Haines area, resulting in a seasonal increase in population.

Of the three communities, Juneau will experience the largest population growth (though still minor) due to improved access. Population growth in Juneau is discussed in detail under each of the improved access alternatives. The West Lynn Canal Highway, because it would funnel all northern Southeast surface traffic through Haines, would result in population growth in that community, as described below in Section 3.1.4.3.

There are also potential short-term population effects associated with highway construction. A very large 6-year construction project, such as would occur with the East Lynn Canal Highway or the West Lynn Canal Highway, would likely involve non-local contractors and construction workers (as well as local contractors and workers). The construction effort is anticipated to be

camp-supported, meaning that the number of people moving to Juneau, Haines, or Skagway would be small.

3.1.1.6 General Effects of Improved Access on Housing and Real Estate

Juneau

According to the most recent available data, Juneau's overall housing vacancy rate was about 5 percent, totaling up to 646 units in 2009–2011 (see Table 2-8 in Section 2.1.1.8). The *Juneau Housing Needs Assessment* found that Juneau's housing stock is inadequate to meet demand of renters and prospective owners, especially those considered "cost-burdened" (JEDC, 2012). In 2011, it was estimated that Juneau needed 170 to 230 new rental housing units and 513 to 517 new single family homes to meet the goal of a 5 percent vacancy rate. The shortage of affordable housing is a result of housing prices continuing to increase as new housing construction has slowed. The report lists five recommendations for improving the affordable housing situation. Nevertheless, the minor population increase associated with better access to the community would not substantially exacerbate the existing shortage, and the shortage of suitable and affordable housing could continue.

Haines

Improved access would enhance Haines' reputation as a retirement community through better access to Juneau's retail and service sectors, particularly health care services. To the extent that this occurs, demand for property in Haines would increase.

Further, because of land availability in Haines, it is possible that additional Juneau residents may seek seasonal or year-round homes in Haines. While the driving distance to Haines may prevent the area from becoming a "bedroom community" to Juneau, more vacation homes/cabins might be developed than is now the case. Haines offers a drier climate than Juneau's, an appealing attribute for Juneau residents looking for a conveniently located second home or cabin. (Average annual precipitation in Haines is about 52 inches, with Juneau precipitation ranging from 70 inches to over 100 inches depending on the specific location.)

There are likely to be localized effects on property values in the Haines area, depending on the alternative, depending on where highways tie into existing highway networks, and depending on how the highway alignment transects (or provides access to) private property. For example, property values in the Glacier Point area would be affected by the highway associated with the West Lynn Canal Highway. These effects are discussed in the analysis of each alternative.

Skagway

Traffic through Skagway resulting from improved access from the East Lynn Canal Highway or the West Lynn Canal Highway is likely to increase the value of commercial property in Skagway. Further, increased employment in the visitor industry (to the extent that an increase occurs) could increase the seasonal demand for housing. Overall, however, the effects on the Skagway real estate market are expected to be minor. Similar to Haines, localized Skagway property values would be affected by the specific location of the highway alternatives.

3.1.1.7 General Effects of Improved Access on Municipal Revenues and Expenditures

Local government would be affected in the following ways by improved access in Lynn Canal:

- Increased demand for public safety services in remote areas of the Juneau and Haines boroughs as well as outlying Skagway areas
- Potential increased demand for public utilities
- Changes in traffic volumes and traffic patterns, and associated highway maintenance costs
- Increases in sales and bed tax revenues from traveler-related spending
- Increases in property tax revenues

Public Safety Effects: The effects of improved access on public safety are addressed in detail in the Social Environment section of this report.

Demand for Public Utilities: Potential effects on public utilities are addressed in the Public Utilities Impacts section of this report. In summary, the effects of improved access on Juneau's public utilities are expected to be negligible. The East Lynn Canal Highway or the West Lynn Canal Highway would affect Haines and Skagway utilities.

Changes in Traffic Volumes and Traffic Patterns: Increased traffic in the region, notably RV traffic—a peak of nine RVs per day were reported in 2010 during the busiest week of the summer—would increase congestion, particularly on Juneau's already crowded downtown streets (2014 Juneau Access *Traffic Forecast Report*, Appendix AA of the 2014 JAI Project Draft SEIS). Overall, however, the additional 745 vehicles per day that improved access would bring (the East Lynn Canal Highway) would be distributed widely throughout each community and therefore would not be noticeable on primary roadways, many of which in Juneau now carry 10,000 or more vehicles daily.

Highway development would also increase the demand for services related to recreation-related public facilities, particularly RV parks, dump stations, etc. Haines and Juneau currently have excess capacity for RV traffic. The impacts of increased RV traffic in Juneau are addressed elsewhere in this report.

Tax Revenues: Sales tax revenues to local governments would be affected in a number of ways, including:

- Increased Haines, Skagway, and Whitehorse spending in Juneau (which would mean lower levels of resident spending in those communities and possibly lower sales tax revenues for those local governments)
- Increased Juneau resident spending in Haines, Skagway, and Whitehorse (which would mean lower resident spending in Juneau and, possibly, lower sales tax revenues for the CBJ)
- Increased non-resident (tourist) spending in all communities.

The net effect, in each community, is very difficult to predict and depends (to a degree) on each alternative. Additional analysis is provided under each alternative.

Property Tax Revenues: Local governments would also expect some increase in property tax revenues as a result of increased assessments on privately-held land along the portion of the highway constructed within each community. These revenue impacts would be particularly important for Juneau. Kensington Gold Mine is currently taxed at the roadless area rate, which is much lower than tax rates on property with road access.

Overall, the economic impacts of highway construction on local government revenues and expenditures in Juneau and Haines are expected to be low. No JAI Project-related highway construction is anticipated for Skagway.

3.1.1.8 General Effects of Improved Access on the Health Care Industry

Improved access would affect the health care industry in several ways. First, to the extent that access is improved, Haines and Skagway residents would have better access to Juneau's well-developed health care sector. This would mean less reliance on local health care providers and/or less reliance on Whitehorse health care providers.

Juneau currently serves as a regional health care center for northern Southeast Alaska, with facilities such as SEARHC and Bartlett Regional Hospital, for example, providing services to Haines and Skagway residents. Juneau's role in this regard would grow with improved access.

The effect of improved access to Juneau's health care industry would also be directly linked with anticipated changes in population in Juneau, Haines and Skagway. As discussed above, no substantial changes in population are anticipated with any of the alternatives, though there is the potential for some population growth in Juneau, Skagway, and Haines associated with the East Lynn Canal Highway and the West Lynn Canal Highway due to the stationing of AMHS crews and visitor-related population growth.

Overall, health care providers in Haines and Skagway would see some decrease in the demand for routine services with improved access to Juneau. However, provision of EMS is a key function of clinics in Haines and Skagway. Demand for these kinds of services would increase as non-resident traffic through these communities increases.

3.1.1.9 General Effects of Improved Access on Other Industries

Improved highway access to northern Southeast Alaska would be expected to have minor or negligible impacts on other segments of the region's economy. The manufacturing sector in Juneau, for example, would benefit from better access to markets in Haines, Skagway, Whitehorse, and elsewhere. Better access to the Alaska/Canada highway system would also improve the economics associated with serving markets in Interior Alaska.

The region's wholesale trade sector would benefit from lower-cost of transportation between Juneau, Haines, and Skagway. Currently, wholesalers, primarily in Juneau, compete with Seattle distributors for this regional business.

3.1.2 Alternative 1 – No Action Alternative

3.1.2.1 General Effects of the No Action Alternative

The No Action Alternative is based on a continuation of mainline ferry service in Lynn Canal and incorporates two new Day Boat ACFs, with one making one round trip between Juneau and Haines six days per week in summer and one making two round trips per day between Haines and Skagway six days per week in the summer. The Day Boat ACFs would not sail on the seventh day because the mainliner is on a similar schedule. In winter, shuttle service between Juneau, Haines, and Skagway would be provided a minimum of three times per week primarily by the Day Boat ACFs. Two mainline vessel round trips per week through Lynn Canal would be provided in summer and one per week in winter. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal. See Section 1.1.1 for additional information regarding the No Action Alternative.

The No Action Alternative represents an improvement in the Lynn Canal transportation infrastructure. According to the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), the No Action Alternative is expected to result in no increase in traffic over the 30-year study period (2020 to 2050). Conditions that would exist under the No Action Alternative would be very similar to the future economic conditions set forth in the baseline Economic Conditions discussion.

3.1.2.2 Effects of the No Action Alternative on the City and Borough of Juneau

The No Action Alternative would have negligible economic impacts in Juneau. One Day Boat ACF would homeport in Auke Bay. It is assumed to have two crews of 12 people (24 total including night crew).

3.1.2.3 Effects of the No Action Alternative on the Haines Borough

The No Action Alternative would have minor economic impacts in Haines as one Day Boat ACF would homeport in Haines. The Day Boat ACF is anticipated to have two crews of 10 people (20 total including night crew) working 2 weeks on and 2 weeks off. These are new jobs in Haines. Some or all of the crew members, and their families, may relocate to Haines from elsewhere in Alaska which would increase economic activity in Haines.

3.1.2.4 Effects of the No Action Alternative on the Municipality of Skagway Borough

The No Action Alternative would have negligible economic impacts in Skagway; therefore, future economic conditions in Skagway would be approximately the same as outlined in the baseline Economic Conditions section.

3.1.3 Alternative 1B – Enhanced Service with Existing AMHS Assets

3.1.3.1 General Effects of the Enhanced Service with Existing AMHS Assets Alternative

Alternative 1B includes the same components of Alternative 1, but focuses on enhancing service using existing AMHS assets. Alternative 1B keeps the *M/V Malaspina* in service when the Day

Boat ACFs are brought online to provide additional capacity in Lynn Canal. This alternative would maintain the same mainline and ACF service as Alternative 1, but the *M/V Malaspina* would provide daily service between Skagway and Auke Bay during the summer. Winter service would be the same as the Alternative 1. Enhanced services included as part of Alternative 1B are a reduction in fares, terminal efficiency improvements, and longer hours of operation for the reservation call center. See Section 1.1.2 for additional information regarding Alternative 1B.

According to the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), Alternative 1B is expected to result in an increase in traffic, which would be approximately 18 percent higher than the No Action Alternative, but still lower than three of the Marine Alternatives (4A, 4B, and 4D), the East Lynn Canal Highway, and the West Lynn Canal Highway. Conditions that would exist under the Alternative 1B would be very similar to the future economic conditions set forth in the baseline Economic Conditions discussion.

Alternative 1B is not likely to result in increased competition for commercial fishing fleets from subsistence and sport fish users because it would not open access to new areas. This alternative would not enhance seafood processors' access to fresh fish markets.

Alternative 1B would have no effect on the forest products industry. It is not anticipated to change ongoing or future mining prospects.

3.1.3.2 Effects of the Enhanced Service with Existing AMHS Assets Alternative on the City and Borough of Juneau

Alternative 1B would have negligible economic impacts in Juneau; therefore, future economic conditions in Juneau would be approximately the same as outlined in the baseline Economic Conditions section.

Effects on Basic Industries in Juneau

The visitor industry is Juneau's only basic industry likely to be affected by Alternative 1B.

Visitor Industry

The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that Alternative 1B traffic to Juneau would be 115 annual ADT in 2020 and 2050. This is an increase of 25 annual ADT over the No Action Alternative. Based on 2012 AMHS information about percentage of Lynn Canal traffic from Juneau, Haines, Skagway, and elsewhere, visitor traffic to Juneau was forecasted[7]. Total new visitor traffic is projected to be 10 annual ADT in 2020, which would equate to approximately 6,400 new visitors per year (based on an average vehicle occupancy rate of 3.2) to Juneau in 2020. This impact is anticipated to be negligible.

[7] Because of flat population projections in Southeast Alaska (ADOLWD, 2013a), traffic on Alternative 1B is predicted to remain the same for the 30-year forecast period; therefore, visitor traffic in 2050 would be the same as forecasted for 2020.

Mining

Alternative 1B is not expected to directly effect mine development in the Juneau area. Alternative 1B would improve access to Juneau, making transportation marginally easier for Haines and Skagway residents choosing to work at Juneau area mines.

Support Industries

To the extent that Alternative 1B would improve ferry frequency, convenience, and cost, it would have an overall positive, but minor economic effect on Juneau's support sector. Primarily these beneficial impacts would be received by the local retail trade and service sector industries that provide goods and services to visitors. These benefits would stem from minor increases in Haines and Skagway resident spending in Juneau and minor increases in non-resident visitor spending in Juneau—both offset partially by increased spending by Juneau residents in Haines and Skagway.

Transportation

Please refer to General Effects of Improved Access, Section 3.1.1.

Local Government

Please refer to General Effects of Improved Access, Section 3.1.1.

Summary of Visitor Spending and Related Impacts in Juneau

Based on data in the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), the total traffic to and from Juneau associated with Alternative 1B is estimated at 115 annual ADT in 2020. Alternative 1B would generate 28 percent more annual ADT than the No Action Alternative (90 annual ADT) in 2020. Traffic on Alternative 1B is predicted to remain constant over the 30-year period between 2020 and 2050, staying at 115 annual ADT, so the impact on visitor spending and related impacts is expected to be the same in both years.

The change in visitor traffic over the No Action Alternative is estimated to be 10 annual ADT in 2020 because approximately one-quarter of the total change in traffic associated with this alternative is anticipated to be from Juneau residents, based on the 2006 EIS and still believed to be valid. The estimates of new traffic also do not include baseline traffic (baseline traffic is already affecting the economy and therefore is not counted along with new traffic in estimating new visitor spending).

Converting these vehicle traffic estimates to numbers of new visitors indicates that Juneau would see about 6,400 new visitors per year in 2020 with Alternative 1B. These are conservative estimates because it is based on the assumption that all traffic is round-trip (in other words, 2 annual ADT equals one additional visiting vehicle, carrying an average of 3.2 people). In reality, some of the traffic would be one-way travelers passing through Juneau on their way north or south.

Based on data from AVSP VI, for the purposes of the analysis for the JAI Project SEIS, it is assumed that visitor spending in Juneau would average $77[8] per visitor per day (McDowell Group, 2012a). Though regional residents may be traveling to Juneau for different reasons, this number is considered a reasonable, though perhaps conservative, per trip estimate for all visitors to Juneau from Haines, Skagway, and Whitehorse. Based on these per visitor per trip spending averages ($77 per day per visitor), Alternative 1B would result in total additional visitor spending in Juneau of about $490,000 in 2020.

The economic impact of this additional spending would include new employment and payroll in Juneau. Based on visitor industry related payroll and spending in Southeast Alaska for the 2010–2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b). This increase in visitor spending in Juneau would generate about $180,000 in new payroll and an estimated five additional jobs (annual average) in 2020. These employment and payroll estimates, which are summarized in Table 3-2, include total direct and indirect effects associated with the increased visitor spending.

Table 3-2: Alternative 1B Projected Traffic and Resulting Visitor Economic Impacts in Juneau, 2020

Total Traffic under No Action Alternative (annual ADT)	90
Total Traffic under Alternative 1B (annual ADT)	115
Change in Traffic (annual ADT) (over No Action)	25
Change in Visitor Traffic (annual ADT) (over No Action)	10
Total New Visitors Annually (over No Action)	6,400
Total New Visitor Spending Annually (over No Action)	$490,000
New Local Payroll Annually (over No Action)	$180,000
New Local Employment Annually (over No Action)	5

Because of flat population projections in Southeast Alaska (ADOLWD, 2013a), traffic under Alternative 1B is predicted to remain the same for the 30-year forecast period; therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Effects on Population in Juneau

Alternative 1B is expected to have negligible to minor impacts on Juneau's current and future population. It would not provide substantive impetus for growth in local basic industries other than the visitor industry, which would be minor. Because population is primarily a function of economic growth, Alternative 1B would not be expected to yield a measurable change in Juneau's population. Due to increased traffic and visitors, Alternative 1B would result in five additional jobs in Juneau or approximately eight new residents (assuming each new job would result in an increase of 1.5 people). This increase would have a negligible impact on population (0.02 percent increase over the 2013 forecasted population of 32,165).

[8] The $77 per visitor per day is for highway/ferry visitors.

Effects on Housing and Real Estate

Alternative 1B is expected to result in no measurable change in Juneau's housing and real estate markets. In Alternative 1B, the increase in traffic is anticipated to result in a population increase of eight individuals, creating a demand for an additional three units of housing (based on the 2010 Census estimate of 2.6 persons per household). This housing unit demand is well within Juneau's existing vacant housing capacity.

Effects on Municipal Revenues and Expenditures

Alternative 1B would have negligible effects on Juneau's municipal revenues and expenditures. New visitor spending associated with this alternative (approximately $490,000 per year) would generate approximately $25,000 per year in CBJ sales tax revenues in 2020 (based on a 5 percent tax rate).

3.1.3.3 Effects of the Enhanced Service with Existing AMHS Assets Alternative on the Haines Borough

Alternative 1B would have negligible economic impacts in Haines; therefore, future economic conditions in Haines would be approximately the same as outlined in the baseline Economic Conditions section.

Effects on Basic Industries in Haines

The visitor industry in Haines is the only basic industry likely to be affected by Alternative 1B compared to the No Action Alternative.

Visitor Industry

Cruise Visitor Market: The cruise ship visitor market to Haines would not be affected by Alternative 1B.

Independent Visitor Market: The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that traffic between Haines and Juneau on Alternative 1B would be 60 annual ADT in 2020 and 2050. This is an increase of 5 ADT over the No Action Alternative. Based on 2012 AMHS information about percentage of Lynn Canal traffic from Juneau, Haines, Skagway, and elsewhere, visitor traffic to Haines was forecasted. Total new visitor traffic is projected to be 5 annual ADT in 2020, which would equate to approximately 2,300 new visitors to Haines per year (based on an occupancy rate of 3.2 persons per vehicle).

Mining

See General Effects of the Enhanced Service with Existing AMHS Assets Alternative (Section 3.1.3.1).

Seafood Industry

See General Effects of the Enhanced Service with Existing AMHS Assets Alternative (Section 3.1.3.1).

Forest Products Industry

See General Effects of the Enhanced Service with Existing AMHS Assets Alternative (Section 3.1.3.1).

Effects on Support Sector in Haines

The effects of Alternative 1B on Haines' support sector would be negligible. Improved access between Juneau and Haines would marginally increase the level of leakage from the community's support sector. The effect on shipping costs is expected to be negligible; therefore, no reduction in business profitability or the cost of living in Haines is expected. Spending by Juneau residents and other non-residents in Haines would increase, though, again, that increase would be minor in the local economy overall.

Transportation

A small but measurable improvement in marine passenger and vehicle transportation will be provided for Lynn Canal under Alternative 1B as demonstrated by traffic forecasts, but it is not expected to improve freight transportation infrastructure in the region. Alternative 1B will bring an additional 5 annual ADT over the No Action Alternative in 2020 and 2050. Please refer to the General Effects of Improved Access (Section 3.1.1).

Local Government

Alternative 1B would have negligible effects on local government in Haines. Please refer to the General Effects of Improved Access (Section 3.1.1) for additional discussion.

Summary of Visitor Spending and Related Impacts in Haines

Based on data in the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), the total traffic to and from Haines associated with Alternative 1B is estimated at 60 annual ADT in 2020. Alternative 1B would generate 9 percent more annual ADT than the No Action Alternative (55 annual ADT) in 2020. Traffic on Alternative 1B is predicted to remain constant over the 30-year period between 2020 and 2050, staying at 60 annual ADT, so the impact on visitor spending and related impacts is expected to be the same in both years.

The change in visitor traffic over the No Action Alternative would be 5 annual ADT in 2020. The estimates of new traffic also do not include baseline traffic (baseline traffic is already affecting the economy and therefore is not counted along with new traffic in estimating new visitor spending).

Converting these vehicle traffic estimates to number of new visitors indicates that Haines would see about 2,300 new visitors in 2020 with Alternative 1B. These are conservative estimates because they are based on the assumption that all traffic is round trip (in other words, 2 annual ADT equals one additional visiting vehicle, carrying an average of 3.2 people).

Based on data from AVSP VI, for the purposes of the analysis for the JAI Project SEIS, it is assumed that highway/ferry visitor spending in Haines would average $77 per visitor per day as discussed above for Juneau (McDowell Group, 2012a). Based on these per visitor per trip

spending averages ($77 per day per visitor), Alternative 1B would result in total additional visitor spending in Haines of about $180,000 in 2020.

The economic impact of this additional spending would include new employment and payroll in Haines. Based on visitor industry related payroll and spending in Southeast Alaska for the 2010–2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b). This increase in visitor spending in Haines would generate about $70,000 in new payroll and no additional jobs (annual average) in 2020. These employment and payroll estimates, which are summarized in Table 3-3, include total direct and indirect effects associated with the increased visitor spending.

Table 3-3: Alternative 1B Projected Traffic and Resulting Visitor Economic Impacts in Haines, 2020

Total Traffic under No Action Alternative (annual ADT)	55
Total Traffic under Alternative 1B (annual ADT)	60
Change in Traffic (annual ADT) (over No Action)	5
Change in Visitor Traffic (annual ADT) (over No Action)	5
Total New Visitors Annually (over No Action)	2,300
Total New Visitor Spending Annually (over No Action)	$180,000
New Local Payroll Annually (over No Action)	$70,000
New Local Employment Annually (over No Action)	0

Because of flat population projections in Southeast Alaska, traffic on Alternative 1B is predicted to remain the same for the 30-year forecast period. Therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Effects on Population in Haines

Alternative 1B is expected to have negligible impacts on Haines' current and future population. It would not provide substantive impetus for growth in local basic industries. Because population is primarily a function of economic growth, Alternative 1B would not be expected to yield a measurable change in Haines' population. Alternative 1B would result in no additional jobs in Haines.

Effects on Housing and Real Estate

Alternative 1B is expected to result in no measurable change in Haines' housing and real estate markets. As Alternative 1B would not result in measurable new local employment or population increase above the No Action, there would not be a measurable need for additional housing in Haines.

Effects on Municipal Revenues and Expenditures in Haines

Alternative 1B would have negligible effects on Haines' municipal revenues and expenditures. New visitor spending associated with this alternative (approximately $180,000) would generate approximately $10,000 in Haines sales tax revenues in 2020 (based on a 5.5 percent tax rate).

3.1.3.4 Effects of the Enhanced Service with Existing AMHS Assets Alternative on the Municipality of Skagway Borough

Alternative 1B would have a minor economic impact in Skagway. As compared to the No Action Alternative, Alternative 1B includes the addition of the *M/V Malaspina* making one round-trip per day seven days per week on a Skagway-Auke Bay-Skagway route during the summer in addition to the Day Boat ACFs and mainliners. Future economic conditions in Skagway would be approximately the same as outlined in the baseline Economic Conditions section.

Effects on Basic Industries in Skagway

Visitor Industry

Cruise Visitor Market: The cruise ship visitor market to Skagway would not be affected by Alternative 1B.

Independent Visitor Market: The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that traffic to Skagway on Alternative 1B would be 55 annual ADT in 2020 and in 2050. This is an increase of 20 annual ADT over the No Action Alternative. Based on 2012 AMHS information about percentage of Lynn Canal traffic from Juneau, Haines, Skagway, and elsewhere, visitor traffic to Skagway was forecasted. Total new visitor traffic is estimated to be 15 annual ADT in 2020, which would equate to approximately 8,200 new visitors per year (based on an average vehicle occupancy of 3.2) to Skagway in 2020.

Effects on Support Sector in Skagway

The effects of Alternative 1B on Skagway's support sector would be minor. Improved access between Juneau and Skagway would increase marginally the level of leakage from the community's support sector. The effect on shipping costs is expected to be negligible; therefore, no reduction in business profitability or the cost of living in Skagway is expected. Spending by Juneau residents and other non-residents in Skagway would increase, but only slightly.

Transportation

Alternative 1B is expected to provide a small but measurable improvement in marine passenger and vehicle transportation services in Lynn Canal as indicated by traffic forecasts. It provides additional container van capacity as compared to the No Action Alternative. Please refer to the General Effects of Improved Access, Section 3.1.1.

Local Government

Alternative 1B would have negligible effects on local government in Skagway. Please refer to the General Effects of Improved Access, Section 3.1.1, for additional discussion.

Summary of Visitor Spending and Related Impacts

Based on data in the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), the total traffic to and from Skagway associated with Alternative 1B is estimated at 55 annual ADT in 2020. Alternative 1B would generate 57 percent more annual ADT than the No Action Alternative (35 annual ADT) in 2020. Traffic on Alternative 1B is predicted to remain relatively constant over the 30-year period between 2020 and 2050, staying

at 55 annual ADT, so the impact on visitor spending and related impacts is expected to be the same in both years.

The change in visitor traffic over the No Action Alternative would be 20 annual ADT in 2020. The estimates of new traffic also do not include baseline traffic (baseline traffic is already affecting the economy and therefore is not counted along with new traffic in estimating new visitor spending).

Converting these vehicle traffic estimates to number of new visitors indicates that Skagway would see about 8,200 new visitors per year in 2020 with Alternative 1B. These are conservative estimates because it is based on the assumption that all traffic is round-trip (in other words, 2 annual ADT equals one additional visiting vehicle, carrying an average of 3.2 people).

Based on data from AVSP VI, for the purposes of the analysis for the JAI Project SEIS, it is assumed that visitor spending in Skagway would average $77 per visitor per day as discussed above for Juneau (McDowell Group, 2012a). Based on these per visitor per trip spending averages ($77 per day per visitor), Alternative 1B would result in total additional visitor spending in Skagway of about $630,000 per year in 2020.

The economic impact of this additional spending would include new employment and payroll in Skagway. Based on visitor industry related payroll and spending in Southeast Alaska for the 2010-2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b). This increase in visitor spending in Skagway would generate about $230,000 in new payroll and an estimated five additional jobs (annual average) in 2020. These employment and payroll estimates, which are summarized in Table 3-4, include total direct and indirect effects associated with the increased visitor spending.

Table 3-4: Alternative 1B Projected Traffic and Resulting Visitor Economic Impacts in Skagway, 2020

Total Traffic under No Action Alternative (annual ADT)	35
Total Traffic under Alternative 1B (annual ADT)	55
Change in Traffic (annual ADT) (over No Action)	20
Change in Visitor Traffic (annual ADT) (over No Action)	15
Total New Visitors Annually (over No Action)	8,200
Total New Visitor Spending Annually (over No Action)	$630,000
New Local Payroll Annually (over No Action)	$230,000
New Local Employment Annually (over No Action)	5

Traffic on Alternative 1B is predicted to remain the same for the 30-year forecast period. Therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Effect on Population in Skagway

Alternative 1B is expected to have negligible impacts on Skagway's current and future population. Alternative 1B would result in five additional jobs in Skagway or approximately eight new residents (assuming each new job would result in an increase of 1.5 people). This increase would have a negligible impact on population (0.8 percent increase over the 2013 forecasted population of 991 and 0.3 percent over the summer population of approximately 2,500 [SDC, 2013]).

Unlike the No Action Alternative, the *M/V Malaspina* would continue service in Lynn Canal and would homeport in Skagway. No additional AMHS employees will be based in Skagway, so no impact is expected.

Alternative 1B retains the *M/V Malaspina* in service and has Skagway as its homeport. Crew members of the *M/V Malaspina* and their families are not anticipated to relocate to Skagway from their current place of residence.

Effects on Housing and Real Estate in Skagway

Alternative 1B is not expected to result in any substantial measurable change in Skagway's housing and real estate markets. Alternative 1B would result in a population increase of eight individuals, creating a demand for an additional three housing units (assuming 2010 Census estimate of 2.5 persons per household). This demand is well within Skagway's existing vacant housing capacity.

Unlike the No Action Alternative, the *M/V Malaspina* would continue service in Lynn Canal. No additional AMHS employees will be based in Skagway, so no impact is expected.

Effects on Municipal Revenues and Expenditures in Skagway

Alternative 1B is not expected to result in a substantial change in Skagway's borough revenues and expenditures. New visitor spending associated with this alternative (approximately $630,000) would generate approximately $25,000 per year in Skagway sales tax revenues in 2020 (based on a 4 percent tax rate). There may be a slight increase in sales tax revenue associated with additional traffic or *M/V Malaspina* crewmembers.

3.1.3.5 Summary of Effects of Alternative 1B

Table 3-5: Summary of Effects of Alternative 1B

Geographic Area	Industry	Summary of Effects
All Areas		
	Mining	Negligible effects
	Seafood	No economic effects expected
Juneau		
	Basic Industries	Minor visitor industry impacts associated with increased visitor spending
	Support Industries	Minor retail and service sectors benefits associated

Geographic Area	Industry	Summary of Effects
		with increased visitor spending
	Population	Negligible effects
	Housing and Real Estate	Negligible effects
	Municipal Revenues and Expenditures	Negligible effects
Haines		
	Basic Industries	Negligible to minor visitor industry impacts
	Support Industries	Negligible to minor effects
	Population	Negligible to minor effects
	Housing and Real Estate	Negligible to minor effects
	Municipal Revenues and Expenditures	Negligible to minor effects
Skagway		
	Basic Industries	Minor visitor industry effects
	Support Industries	Negligible to minor effects
	Population	Negligible effects
	Housing and Real Estate	Negligible effects
	Municipal Revenues and Expenditures	Negligible effects

3.1.4 Alternative 2B – East Lynn Canal Highway

3.1.4.1 General Effects of the East Lynn Canal Highway

One East Lynn Canal Highway alternative is being considered in the JAI Project SEIS. The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that the annual ADT on the East Lynn Canal Highway would be about 835 vehicles in 2020 and 825 in 2050.

General Effects of the East Lynn Canal Highway on the Construction Industry

Construction of the East Lynn Canal Highway is estimated to cost approximately $518.0 million. In major construction projects of this nature, it is generally assumed that the cost of labor is about one-third to one-half of construction costs. For this analysis, we assume 45 percent of construction costs for labor. For the East Lynn Canal Highway, therefore, labor expenditures would total approximately $233.1 million. This payroll would be spread over a 6-year construction period, or about $38.9 million annually. Based upon 2011 ADOLWD data, the total annual salary for highway, street, and bridge construction workers in Alaska was $7,166 a month, or approximately $86,000. Total labor cost includes this annual salary plus 20 percent for benefits and other labor-related overhead, or approximately $103,200 per annual-equivalent job. Based on this average, $38.9 million in annual labor expenditures would indicate an approximate annual-equivalent of 298jobs in each year of the 6-year construction project. This should be viewed as a preliminary estimate of construction-related employment. Peak construction season

employment would be greater than 298 jobs, and of course off-season employment would be lower. It is not possible to predict local labor participation in the construction effort. The economic impact of the construction effort would depend on the number of local construction workers involved in the project. A project of this magnitude would attract contractors from outside Juneau, Haines, and Skagway as well as throughout the State and elsewhere. A high degree of non-local labor participation is likely.

Table 3-6 summarizes employment impacts for the East Lynn Canal Highway and shows estimated employment for each alternative based on 45 percent of construction costs allocated to employment and average annual wages for highway construction workers in Alaska.

Table 3-6: Alternative 2B Construction Phase Employment Impacts (based on a 6-year construction period)

Alternative	Construction Cost	Estimated Annual Employment
Alternative 2B	$518.0 million	298

Note: Construction costs include only highway and ferry terminal construction costs. Vessel construction is not included.

Because Juneau is the largest community in the area, it is likely to benefit most in terms of construction jobs. In addition to employment, Juneau would experience some increase in commerce in support of the construction effort.

In 2011, there were 11 firms designated as Heavy Construction employers[9] in the Juneau-Haines-Skagway area with average annual employment of 135 workers. The month of July saw the greatest number of workers in this industry with 196 workers and the month of January had the least number of workers with 61 workers (Rasmussen, personal communication, 2013). The estimated number of construction workers needed for the East Lynn Canal Highway is greater than the Juneau-Haines-Skagway region's average annual labor pool by approximately 120.7 percent. It is likely that qualified workers for this a highway construction project would be needed from other areas in the State and elsewhere.

Construction Phase-Related Socioeconomic Effects: Construction activity associated with development of the East Lynn Canal Highway could have temporary socioeconomic effects on Juneau.

As the region's commercial and population center, Juneau is likely to see the largest construction-related impacts. Haines would be unlikely to experience construction-related socioeconomic impacts from the East Lynn Canal Highway, though local construction labor and contractors, as well as labor from throughout the State and elsewhere, could participate in the project. Skagway would have minor construction-related impacts associated with ferry terminal modifications.

The magnitude of the socioeconomic effects associated with highway construction would depend on a number of factors that are unknown at this time. These factors include:

[9] Heavy construction employers are primarily engaged in highway, street, bridge, and tunnel construction.

- The residency of contractors and subcontractors awarded construction contracts.
- The availability of local skilled labor and operators at the time the project is under construction. This would depend in part on the number and size of other heavy construction projects underway in the region that might be competing in the same labor pool.
- Use of remote camps to support the construction effort. If housing and food services are provided for workers, the impact on Juneau would be far less than if non-resident workers are required to find their own housing.
- Construction shift scheduling. A ten-days-on, four-days-off schedule, for example, is more likely to attract workers from nearby communities, or throughout Alaska and elsewhere.
- The duration of the construction phase. A 6-year construction period is assumed in the JAI Project SEIS. A shorter construction period would have higher peak labor requirements. Longer construction periods would have lower peak labor requirements, but might draw more dependents to the region. A longer construction period might also generate greater indirect socioeconomic effects.

It is likely that the highway and new terminal construction effort would be almost entirely camp-supported. Relying on available housing in Juneau would mean long daily commutes to the construction site.

For the East Lynn Canal Highway, it is likely that the construction effort would be supported by several camps, including camps at Katzehin, Kensington, and near Juneau. The location of the camps is important in terms of where construction-related socioeconomic impacts would occur. A camp near Juneau would direct construction-related impacts toward Juneau. These impacts could include:

- Increased sales for construction equipment, rental, and repair companies.
- Increased sales for food wholesalers and other businesses providing goods and services to the construction camp.
- Increased sales for fuel distributors.
- Increased sales at restaurants, bars, hotels, and other businesses providing goods and services to construction workers and their dependents.
- Increased CBJ sales tax revenues as a result of sales to construction companies and their employees.
- Increased demand for rental and other housing. Depending on the number of non-resident workers who choose to relocate families to Juneau, demand for housing in Juneau would increase. Most of the demand would be for rental housing, though a 6-year construction period may be long enough to induce some workers to purchase housing. Increased demand for rental housing could result in upward pressure on rental rates.
- Increased enrollment in local schools. To the extent that dependents of non-resident workers relocate to Juneau, local school enrollment could increase. Enrollment has been

declining in Juneau in recent years, so construction- related increases would be served within the existing public school infrastructure. Additional enrollment would also draw additional State funding to the school district.

- The relatively small, temporary population increase associated with highway construction could also place additional demands on other public services, such as law enforcement, fire and emergency services, and health care services. The change in demand for these services, however, would be accommodated within Juneau's existing public services infrastructure.

The total direct and indirect employment and population effects of the East Lynn Canal Highway would depend on the factors outlined above. Multipliers derived from the IMPLAN[10] economic impact modeling system provide a highest-case estimate of indirect impacts. IMPLAN indicates that an employment multiplier of 1.44 is appropriate for measuring total direct, indirect, and induced employment associated with highway construction. The IMPLAN multiplier for labor income is 1.24. These multipliers probably overstate indirect effects from the East Lynn Canal Highway because of the remote location of the project and the camp-supported infrastructure. Based on slightly lower multipliers (1.4 for employment and 1.2 for payroll), the total, maximum potential labor and labor income effects of the East Lynn Canal Highway is provided in Table 3-7.

Table 3-7: Alternative 2B Construction Phase Direct and Total Employment and Payroll Effects (based on a 6-year construction period)

Estimated Annual Direct Employment	Estimated Annual Direct Payroll	Estimated Annual Total Employment	Estimated Annual Total Payroll
298	$38.8 million	417	$46.6 million

These estimates of total employment and payroll are high-case estimates. Indirect impacts (those associated with business spending on goods and services in support of the construction project) and induced impacts (those associated with construction workers spending their payroll) develop over time and are lower for shorter-term projects. As described above, how these employment estimates would translate into population growth depends on many factors. However, by making a number of assumptions, it is possible to broadly estimate potential population-related effects of the construction phase. These assumptions are:

- Half of the total construction-related labor force would seek some form of housing in the Juneau area. (Even with a camp-supported construction effort, many workers would seek local housing for their dependents or for accommodations during time off).
- For construction workers relocating to Juneau, 75 percent would bring dependents with them, with an average family size that would match the Juneau average of 3.1 family members. One-fifth of this population would be of school age.

[10] Based on the IMPLAN model used for the 2006 SEIS, the projected annual ADT was used to calculate visitor spending and related impacts for 2020. The ratios obtained from IMPLAN are assumed to still be valid.

- Workers seeking housing in Juneau who do not have dependents would seek shared housing with other construction workers. The average household size among these workers would be two persons.

Based on these assumptions, Table 3-8 provides estimates of population-related effects of the East Lynn Canal Highway.

Table 3-8: Alternative 2B Construction Phase, Maximum Potential Population-Related Effects (based on a 6-year construction period)

Total Construction-Related Population Increase	Total New Housing Demand (number of units)	Additional School Age Population
544	182	97

The latest available data (2009–2011) indicate that Juneau's housing vacancy rate is at approximately 5 percent, meaning that up to 646 housing units are vacant. While the construction-related housing demand associated with the East Lynn Canal Highway is less than the existing vacancy, some additional housing development would probably occur in anticipation of increased demand.

The effect on the school district from additional school age residents would depend on the age and geographic distribution of the construction-related population with the CBJ. Total public school enrollment in Juneau has declined by about 170 students over the past 5 years therefore the infrastructure is in place to serve this additional enrollment. As discussed above, additional enrollment would also result in increased State funding, which is based in part on enrollment.

General Effects of the East Lynn Canal Highway on the Transportation Industry

Waterborne Freight

Juneau

As discussed in Section 2.1.1.7 (Support Sector Industries), water transportation is the primary method of moving freight to and from Juneau, with Seattle being the primary port of origin and destination. Juneau currently has at least three times weekly service from Seattle. Juneau also receives regular fuel barge service. According to the U.S. Army Corps of Engineers, total imports at Juneau Harbor were nearly 193,000 tons, including groceries; lumber and wood products; manufactured equipment, machinery, and products (such as vehicles, boats, machinery, etc.); and petroleum products. Outbound freight leaving Juneau by barge was nearly 85,000 tons and included alcoholic beverages, fish, groceries, manufactured equipment, machinery, and food and farm products (USACE, 2010).

The cost for the movement of freight by AML is based on the type and value of the commodity and can vary greatly. AML offers negotiated rates for regular, large-scale users such as Fred Meyer, Home Depot, Walmart, or Costco. Juneau is approximately 935 nautical miles (1,076 statute miles) from Seattle[11]. A common commodity moved on AML is groceries. In 2013, the

[11] A statute mile is 5,280 feet in length. A nautical mile is 6,076 feet in length.

baseline cost to transport a 20-foot cargo van carrying 20,000 pounds of dry groceries from Seattle to Juneau is $1,820, translating into $1.95 per nautical mile ($1.69 per statute mile) or about $0.09 per pound (AML, personal communication, 2013). The typical barge schedule for AML takes 5 days, for example, leaving Seattle on Wednesday and arriving in Juneau on Monday after making stops in Ketchikan and Petersburg. After leaving Juneau, the barge travels north to Haines on Monday and Skagway on Tuesday before making its return to Seattle. Friday sailings from Seattle do not include the Haines and Skagway stops.

In addition, cargo also enters Juneau by AMHS ferry. In 2013, the cost of transporting a 21-foot cargo van from Bellingham to Juneau is $1,183 ($1,133 plus $50 handling fee). This translates into approximately $1.26 per nautical mile ($1.01 per statute mile) or approximately $0.05 per pound.

In 2006, trucking companies servicing other Alaska communities were asked to approximate the cost of trucking between Seattle and Juneau if a highway were available. Seattle to Juneau via Skagway and the East Lynn Canal Highway is a distance of approximately 1,715 miles. Trucking companies were asked to estimate the cost of sending 20,000 pounds of goods from Seattle to Juneau in order to compare costs to the barge alternative. Trucking cost estimates for these goods is $3,075 (a 40,000 to 42,000 pound load was estimated at $6,150). This equals $1.79 per mile or $0.15 per pound and assumes no cargo is available for the return trip and as little as half that amount if cargo loads can be obtained for the return trip. Gasoline prices in Alaska have risen by 70 percent between January 2006 and January 2013. Assuming trucking costs would rise proportionately with gas prices, it could cost approximately $3.00 per mile or $0.25 per pound to ship by truck in 2013 between Seattle and Juneau[12]. While trucking goods from Seattle is not competitive with barge service, a highway link (with a short ferry) to Juneau may provide opportunities for transporting time-sensitive freight. Air freight costs in 2012, Juneau to Seattle, are between $0.53 and $0.77 per pound (Alaska Air Cargo, 2013).

While improved access would provide some short-term transportation benefit, transportation by barge would likely remain the mode by which most freight is shipped to Juneau. The economies of scale possible with barge service, and the relatively frequent service offered into Juneau, place economics on the side of barge transportation. However, there would be substantial benefits to the fishing industry or other manufacturers producing time-sensitive goods. Further, shipment of time- sensitive products out of Juneau would create low-cost back-haul opportunities.

Over the long-term, Juneau would expect growing dependence on overland trucking of basic goods into Juneau, as more and more individual businesses consider the scheduling flexibility trucking would provide. Highway access would give businesses and consumers the opportunity and versatility to choose a shipping mode that best meets their specific needs. In addition, with highway access, Juneau might develop a dependence on supply centers other than Seattle. Though not addressed explicitly in the JAI Project SEIS, overland shipment of freight from Midwest commercial centers, for example, would be very competitive with Seattle barge service, especially if some of the supplies moving through Seattle originate in the Midwest.

[12] Changes in gas prices were calculated based on the Alaska statewide average. This proportional change in fuel was applied to the trucking cost estimates provided in the 2006 FEIS.

The East Lynn Canal Highway would have negligible potential to stimulate overland freight transportation to and from Juneau. This alternative includes a ferry link. The cost and scheduling inefficiencies inherent in ferry service would constrain truck traffic.

Haines

Haines and Skagway are important transshipment points, linking Inside Passage barge and ferry traffic to the Yukon and Interior Alaska. Waterborne freight arrives in Haines on a weekly basis through AML barge service. During the summer months, Haines receives approximately 30 to 50 cargo vans per week, dropping in the winter to between 15 and 20.

AMHS ferries also provide freight service to Haines. In 2011, AMHS 553 vans travelled between Juneau and Haines (an average of 11 per week) and 153 vans travelled between Haines and Skagway (an average of 4 per week). Approximately 75 percent of disembarking vans in Haines originated in Juneau and about 80 percent of vans disembarking in Juneau originated in Haines.

Some of the trucks arriving in Haines by ferry and barge carry freight for local customers; others are destined for the Yukon or Interior Alaska. In 2008, 695 trucks crossed northbound through the Canadian Customs station at Pleasant Camp. A larger number of trucks (702) crossed southbound into Haines in 2008.

The East Lynn Canal Highway would affect freight movement to and through Haines. Some of the vans now off-loaded from the ferry in Haines would be trucked from Juneau (others would be barged). To the extent that local truckers move these vans, the job of off-loading and delivering these vans could be taken by Juneau-based truckers. Though data are not available, apparently the vans arriving by ferry destined for points north of Haines are handled primarily by non-resident drivers.

The critical issue for local drivers is AML's plans for serving Haines should a highway be constructed. AML currently has three to four full time truckers living in Haines and they often add one to two more staff in the summer. Representatives of AML have stated that they would not alter their barge service to Haines. The cost of off-loading vans in Juneau, and trucking to Haines (and incurring the cost and delay associated with a ferry link), would not be competitive with continued barge service. As such, the Haines truckers who handle AML vans would not be affected by construction of the East Lynn Canal Highway. Haines would see reduced costs for freight shipped from Juneau.

In 2011, of the 706 vans transported on the AMHS in Lynn Canal and off-loaded in Haines, 192 originated in Juneau (NEI, 2012). The final destination for these vans is not known, but in any case, the cost of transporting these vans from Juneau over the East Lynn Canal Highway is very likely to be lower than the cost of ferry transport. Critical to this assumption is the cost of the East Lynn Canal Highway ferry link. If the ferry service between Katzehin and Haines is relatively infrequent, or relatively expensive, there may be no cost savings.

In summary, the East Lynn Canal Highway would not result in a change in barge service to Haines. Freight that is now shipped to Haines on the ferry, however, could be off-loaded at Auke

Bay, truck-delivered to Katzehin, and then ferried to Haines, most likely at a lower cost than is now possible with trucks on ferries alone.

Skagway

In 2010, 70,427 tons of freight moved through the Skagway harbor, with almost half (45 percent) of the freight being petroleum products (USACE, 2010). Waterborne freight (other than fuel) arrives in Skagway on a weekly basis through AML barge service. During the summer months, Skagway receives approximately 30 cargo vans per week, dropping in the winter to about 10. AMHS ferries also provide freight service to Skagway. In 2011, AMHS traffic included 81 vans off-loaded and 72 vans loaded in Skagway on the ferry segment between Skagway and Haines (NEI, 2012). Freight arriving in Skagway by ferry and barge is for local residents and businesses as well as consumers in the Yukon.

In 2008, 2,660 trucks (including fuel trucks) crossed northbound through the Canadian Customs station at Fraser. A smaller number of trucks (2,596) crossed southbound into Skagway in 2008.

Skagway would see reduced costs for freight shipped from Juneau. In 2011, the AMHS carried 192 vans from Juneau to Haines, 361 vans from Haines to Juneau, 81 vans from Haines to Skagway and 72 from Skagway to Haines (2014 Juneau Access *Traffic Forecast Report,* Appendix AA of the 2014 JAI Project Draft SEIS). The cost of transporting these vans over the East Lynn Canal Highway and then by shuttle ferry from Katzehin would be lower than the cost of all-ferry transport.

With the exception of freight currently moved from Juneau to Skagway on the ferry, Skagway is not expected to see any change in waterborne freight service with the East Lynn Canal Highway. The economics associated with off-loading vans or fuel in Juneau, then trucking to Katzehin are inferior to the cost efficiencies associated with barge transportation as now provided. In other words, overall transportation costs would be higher than is currently the case, if the product were transshipped (off-loaded then on-loaded) in Juneau.

In summary, Skagway barge service would be substantially unaffected by the East Lynn Canal Highway. Freight that now moves from Juneau to Skagway on the ferry would instead be trucked to Katzehin and by ferry to Skagway at a lower cost.

Ground Transportation Services[13]

Concern has been expressed about how Lynn Canal travelers who are now walk-on ferry passengers would travel between Juneau, Haines, and Skagway if a highway is constructed and ferry service discontinued. As a preface to addressing the question about bus service, it is important to recognize that cost is a key reason people choose to travel as walk-ons. Personal travel vehicle cost would be substantially reduced in Lynn Canal with a highway. During the 2013 summer fare season, a round-trip voyage between Juneau and Haines would cost $218 for a family of four and a 19-foot vehicle (standard size pickup truck). To travel round trip between Juneau and Skagway would cost $286.

[13] Note that the following analysis on ground transportation services was intended as a supplement to Section 4.1.1.3, "General Effects of the Improved Access on the Transportation Industry," presented in the 2004 *Socioeconomic Effects Technical Report.* It has been updated to reflect changes since 2006.

With the East Lynn Canal Highway, the total cost for a family of four with a 19-foot vehicle to make a round trip between Juneau and Haines would be approximately $82 based on total vehicle operating and ownership costs of $0.64/mile and shuttle ferry costs of $9.00 per person and $30.00 per vehicle. A round trip between Juneau and Skagway would cost about $101. Further, under the East Lynn Canal Highway, the highway travel cost of each additional passenger in a personal vehicle is zero, with additional ferry passenger costs of about $9.00 per person round-trip (HDR Alaska, 2013). Meanwhile, each additional adult passenger using the existing ferry service must pay the $74 round-trip passenger fare for Juneau-Haines-Juneau travel. This means that many walk-on passengers would choose to drive their own vehicle (or travel with friends) rather than not travel or seek transportation services from the private sector.

As additional background information, it should be noted that, according to the 2010 Census, 90.5 percent of Juneau households own at least one vehicle, while 9.5 percent (1,136 households) do not own a vehicle. More specifically, 35.2 percent of Juneau households own one vehicle, 37.9 percent own two, and 17.4 percent own three or more vehicles. Vehicle ownership numbers are very similar for the Haines Borough with 7.8 percent of households with no vehicles, 45.9 percent with one vehicle, 29.9 percent with two, and 16.4 percent have three or more vehicles. In the Municipality of Skagway Borough, 3.5 percent have none, 34.1 percent have one, 43.2 percent have two, and 19.2 percent have three or more vehicles.

Whether owning a car or not, some of the existing AMHS walk-on market would prefer or require some form of transportation service between Juneau, Haines, and Skagway. Further, some of the traffic induced by the proposed highway might also occasionally prefer to travel by bus or van, depending on the cost and frequency of service.

To predict what type of bus service might develop if highway access were available, the potential market size for such service was estimated. A number of bus operators from around the region were interviewed in 2006 to gauge their response, in terms of service levels, to this particular market opportunity, and information on bus services was collected from elsewhere in the region and Alaska. To update these interviews, Juneau's public bus operator, Capital Transit, and several private ground transportation companies, were contacted in to discuss what service it might provide if the East Lynn Canal Highway were implemented. While Capital Transit reported that it is unlikely to provide service, it is possible that, as found in 2006, private companies may choose to provide service to Katzehin if and when a market develops.

Market size

As reported in the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), approximately 40,650 passengers and 12,870 vehicles traveled Lynn Canal northbound from Juneau to Haines or Skagway, with about the same volume (41,540 passengers, 13,200 vehicles) moving southbound via the ferry in 2011. The average number of passengers per vehicle on highways in the Lynn Canal corridor is approximately 2.3. Assuming the same number of passengers per vehicle on the ferry, approximately 29,600 passengers on the ferry traveled with a vehicle. Walk-on traffic is estimated to be approximately 11,050 people, one way (calculated by subtracting the 29,600 passengers who traveled with a vehicle from the total number of passengers.)

The percentage of AMHS walk-on passengers who would choose to travel in their own vehicle, if a highway were in place, would depend on a number of factors such as the cost, frequency, and convenience of a bus or van service. After the highway is built, new or established bus/van service providers are anticipated to test the market by offering some moderate level of service, such as one or two round trips daily between communities during the summer (allowing Haines residents to take day trips to Juneau, for example, or Juneau visitors to travel to Skagway and back in a day).

For purposes of this analysis, it was estimated that the initial size of the market for bus service might be equivalent to between 20 and 50 percent of 2011 walk-on ferry traffic, which would be 3,100 to 6,100 annual northbound and southbound travelers. This is an estimate of just the number of travelers who would choose to use a bus service if it were available and reasonably affordable, including travelers who do not own a vehicle[14]. It also includes the potential for an equal number of travelers (up to as many as 3,700 travelers) who would choose bus service, rather than take their own car, because it is more convenient.

Case studies

Although Juneau's public transit provider, Capital Transit, indicated in 2012 that it is not likely to offer service to the Katzehin Ferry Terminal for a highway resulting from the East Lynn Canal Highway (Kern, personal communication, 2012), case studies done in 2006 indicated that commercial passenger bus/van services were available elsewhere in Alaska and would likely offer some type of passenger service between Juneau and communities to the north. While market size and characteristics may be different, these 2006 case studies provide a general indication of the cost and frequency of bus service that is likely to be available. More information about the case studies can be found in the *Addendum to Appendix H – Socioeconomic Effects Technical Report,* pages W-177–W-188 of the *Appendix W – Technical Report Addenda* of the 2006 Final Environmental Impact Statement (FEIS).

Operator interviews

Interviews were conducted with land transportation service providers that currently provide service in Juneau to determine if operators would be interested in providing service to Katzehin for tours or to pick up/drop off ferry passengers.

In summary, the potential Lynn Canal land transport market is of interest to the private sector. The operators interviewed said the market would be of interest to them if there was a demand and if it was shown to be financially lucrative. Interviewed operators indicated that they actively pursue new tours, services, or opportunities for passengers. In addition, operators indicated that increased competition and lower gas prices have been driving the ground transportation business and cost to users down. In general, ground service providers, except taxis, are not currently offering regular ferry passenger pick-up and drop-off service.

[14] Travelers who do not own a vehicle were estimated at approximately 8 to 10 percent of the overall market—about 3,600 travelers—which is slightly above the regional ownership average of 7 to 8 percent, to account for non-residents traveling without vehicles.

Schedules and fares would likely depend on the volume of users and the demand distribution. Fares may also depend on whether the provider offers scheduled or charter service on a reservation-only basis, and whether the provider offers a tour component (stops for sightseeing) or whether the route is a direct transportation-only service.

Scheduling would be a significant challenge for bus service operators. The bus service needs of local Juneau, Haines, and Skagway residents are likely to be different, in terms of schedule, than those of travelers arriving on the ferry or traveling to Juneau to meet a ferry. The seasonality of demand would also present a scheduling challenge, with significant variations in demand even within the summer season. Demand would peak in June, July, and August, and would likely be at a low point in January and February. Several operators noted that off-season scheduled service could be difficult to develop based on the estimated winter volume, though charter service for groups (for example, school activities) would be available.

Summary

In summary, the potential Lynn Canal bus market may be of interest to the private sector. Case studies indicated that the market would be of interest to private operators or would have good potential. In 2006, project planners believed that daily summer coach service would link the communities of Juneau, Haines, Skagway, and possibly Whitehorse. Winter service would be less frequent, with bus service offered perhaps every other day to Haines and Skagway. Independent shuttle companies would be interested in providing the service if demand develops and it is shown to be profitable. Bus/van service could find a market in Lynn Canal if highway access was available.

The cost of such service would ultimately depend on the size and competitiveness of the market, but would likely be similar to the current cost to ride the ferry. Schedules and fares would depend on the volume of users and the demand distribution through the day, month, and year. Fares would also depend on whether the provider offers scheduled or charter service on a reservation-only basis, and whether the provider offers a tour component (stops for sightseeing) or whether the route is a direct transportation-only service. In 2006, the projected cost to ride the bus ranged from $35 to $50 one-way (Juneau-Skagway), which placed the cost roughly equal to the AMHS adult passenger fare at that time of $44 for the Juneau-Skagway link. Adjusting for inflation, in 2013, the projected cost for the bus would range from $40 to $60 which is similar to the AMHS adult passenger fare ($50) for the Juneau-Skagway link. It was concluded that service to Whitehorse would likely be about double the Juneau-Skagway fare.

There is uncertainty in the estimates of the size of the Lynn Canal bus passenger market. But the potential market is large, including 2012 populations totaling 35,875 residents in Juneau, Haines, and Skagway, 26,418 residents in Whitehorse, and 100,000 to 150,000 independent visitors to Southeast Alaska (JEDC, 2012). The 2006 study concluded that, as has occurred elsewhere in Alaska, the private sector would be expected to respond aggressively to this market potential. Although 2012 interviews with shuttle operators did not support this conclusion, and there is a lack of independent shuttle companies that might provide said service, it is possible that, as found in 2006, private companies may begin to offer service if there is demand.

Air Transport

See General Effects of Improved Access on the Transportation Industry, Section 3.1.1.3.

Private Ferry Operations

See General Effects of Improved Access on the Transportation Industry, Section 3.1.1.3.

Commercial Highway Passenger Transportation

If Lynn Canal transportation options are improved, it is assumed that other, less expensive, means of commercial transportation between Juneau, Haines, and Skagway will emerge. Bus and van transportation between these communities may develop as competition for higher-priced air taxi service.

With the East Lynn Canal Highway, it would be possible to provide improved land transportation from Juneau to Haines and Skagway several times daily. It is not possible to determine the market for this type of transportation service or the number of local jobs that would be created. In addition, new commercial surface transportation services could emerge between Southeast, Southcentral, and Interior Alaska, serving visitors as well as Alaska residents.

These commercial transportation services would be available to travelers who would otherwise be walk-on ferry travelers. Most potential walk-on ferry travelers would choose to use a private vehicle if highway access were available, because of the lower cost of driving the highway to Katzehin and then taking the shuttle ferry to Skagway versus taking a car all the way on the ferry. Still, there are some travelers who rely solely on commercial transportation services. If the number of these travelers is large enough, bus, van or other commercial services will develop.

General Effects of the East Lynn Canal Highway on the Forest Products Industry

The East Lynn Canal Highway would generate activity in the forest products industry in two general areas. First, clearing the right-of-way would produce marketable timber. Second, the East Lynn Canal Highway would improve access to timber stands that at some future date could be made available for harvest.

Overall, the effects of the East Lynn Canal Highway on the forest products industry would depend on a number of factors, including:

- USFS management of timber stands along the East Lynn Canal Highway corridor
- The volume and quality of timber along the East Lynn Canal Highway corridor
- Market conditions for Alaska's forest products in general
- Disposition of the marketable timber harvested as part of the highway construction process

USFS Land Management: Most of the East Lynn Canal area is to be maintained in a "mostly natural setting" as designated in the 2008 Tongass Land and Resource Management Plan Land Use Designations (LUDs). The LUDs in this area, including LUD II, Old-Growth Habitat, and Semi-Remote Recreation, are classified as unsuitable for timber production, and commercial

timber harvest is not allowed. However, two areas along the eastern shore of Lynn Canal are designated for moderate development, including the Scenic Viewshed and Modified Landscape LUDs, which allow timber harvesting. Additionally, pending approval of the East Lynn Canal Highway, the USFS would harvest and sell timber removed from the East Lynn Canal Highway corridor as allowed in the Juneau Access Settlement (Sandhofer, personal communication, 2012).

Volume and Quality of Timber along the East Lynn Canal Highway: The USFS has not cruised the forested lands along the eastern shore of Lynn Canal. Therefore, timber quantities and qualities are unknown. However, aerial photographs of the area indicate a high degree of variability in terms of quantity. Volumes probably range from very low to as high as 30,000 board feet per acre.

Market Conditions for Alaska Forest Products: It is impossible to predict what market conditions might be by the time the East Lynn Canal Highway would be constructed. The USFS currently has no plans to harvest timber on East Lynn Canal. Pending approval of the East Lynn Canal Highway, however, the USFS would harvest and sell timber as allowed in the Juneau Access Settlement (Sandhofer, personal communication, 2012).

A highway is not likely to affect the timing or magnitude of such sales, but it would affect the industry's response to the sales. Highway access would reduce the cost of harvesting and therefore increase the profitability of harvesting the timber.

Disposition of Timber Harvested during Construction: In the construction phase of the East Lynn Canal Highway, a potentially large volume of timber would be harvested from the 100–foot-wide construction area along the 51-mile long right-of-way[15] in preparation for highway building. A total of approximately 800 acres would need to be cleared.

Data are not available on the total volume of timber located along the East Lynn Canal Highway route. However, in the Berners Bay area, along approximately 7 miles of the highway, timber volumes could be as much as 30,000 board feet per acre (USFS, 1994). Beyond Berners Bay, volumes would range from essentially zero (in slide areas) to 30,000 board feet per acre. If it is assumed that the average volume along the corridor is 10,000 board feet per acre, the East Lynn Canal Highway would require the harvesting of approximately 8 million board feet of timber.

The value of the timber harvested as part of the highway construction effort would depend on the volume and species mix of the timber resource. There is a very high degree of price variability. According to Chapter 2430 of the USFS *Manual for the Alaska Region*[16], the standard and minimum rates range from $2 per thousand board feet (mbf) to $20 per mbf depending on the type of logs (USFS, 2006). The value of the right-of-way timber harvest is assumed to be somewhere within this range. Assuming a volume of 8 million board feet, the value of the right-

[15] For State and federal lands, DOT&PF usually obtains a standard 300 foot right-of-way to allow for a one-time land transfer that would also accommodate potential for future expansion. With private and municipal owned land, DOT&PF typically acquires what is necessary for the immediate project and minor future improvements.
[16] The current Chapter 2430 became effective on November 17, 2006. Subsequent revisions to this chapter prior to the timber being harvested may change the value of the timber.

of-way harvest would be between $16,000 and $160,000. Revenues from right-of-way timber sales through the National Forest would be retained by the USFS.

General Effects of the East Lynn Canal Highway on the Mining Industry

Development of the East Lynn Canal Highway could affect operation of Coeur Alaska's Kensington Mine, located just north of Berners Bay, within CBJ boundaries. It is important to note that the decision to develop the Kensington Mine was not contingent on construction of the East Lynn Canal Highway, and that Coeur Alaska has already built a road to the Jualin Mine site from the Kensington Mine site. The mine opened in 2009 and is fully operational. However, improved access to the mine with the East Lynn Canal Highway would have a number of effects on mine operations and local economies:

- Reduced cost of transport between the mine and Juneau
- Improved worker safety with all-weather surface road to Juneau
- Potential for savings from improved access to Juneau area utilities
- Improved opportunity for Haines and Skagway residents to participate in the mine workforce
- Increased security and public safety concerns at the mine as a result of public access
- Increased CBJ property tax revenues

These issues are addressed in more detail below.

Reduced Cost of Transport To and From Juneau: Most supplies required to operate the Kensington Mine (fuels, explosives, drill steel, chemical reagents, food, etc.) are shipped directly to the mine from Seattle with or without highway access to Juneau. Kensington Mine is currently served by AML, which delivers freight (mainly cement and explosives) and diesel fuel by barge. Ore from the mine is shipped out by barge. It may be more cost effective to ship directly to the mine rather than bear the expense of shipping to Juneau or Haines first, re-handling the materials and then trucking or barging to Kensington Mine.

However, the costs associated with daily transport of workers to the mine via bus all the way from Juneau would potentially be lower than if a ferry continues to shuttle workers across Berners Bay (from Cascade Point to Slate Cove). Potentially, the cost of transporting fuel to the mine could also be reduced (NEI, 2013).

Improved Worker Safety with All-Weather Surface Access to Juneau: Presently, Kensington Mine workers are transported by bus to Yankee Cove and then by vessel to the mine's dock at Slate Creek. There are plans to move the southern terminus to a proposed dock at Cascade Point on Goldbelt land at Echo Cove on the south side of Berners Bay. The proposed dock at Cascade Point has the necessary permits, but legal actions and funding issues have delayed construction. Glacier Highway, however, which runs north out of Juneau, has recently been extended to Cascade Point. Moving the transit point to Cascade Point will enhance the safety of the crews and will make travel across Berners Bay more reliable.

An important benefit of highway access to the Kensington Mine concerns safety of mine personnel. First, travel by bus between the mine and Juneau would be more dependable and faster than with a ferry link. Second, in case of injury, prompt medevac service would be assured with highway access to Juneau whereas helicopter medevac, while potentially faster, would be weather-dependent.

Improved Access to Juneau Area Utilities: Highway access to the Kensington Mine would reduce the cost of tying into the AEL&P power grid in Juneau. A 1988 study conducted by AEL&P for Echo Bay Alaska (previous owners of the mine) indicated that an intertie would cost about $12 million. This cost, plus the cost to provide surplus power, exceeded the cost of on-site power generation. The Kensington Gold Mine needs between 8 and 9 megawatts (MW) of electricity once the mine is complete and in full operation, and because it is not connected to the local power grid, it currently uses six diesel-powered generators as its supply (Zigarlick, 2012). It is not possible within the scope of the JAI Project SEIS to accurately determine the savings associated with intertie construction along the East Lynn Canal Highway to the mine versus helicopter supported construction and undersea cable installation.

While the East Lynn Canal highway would reduce the cost of an intertie between the Kensington Mine and AEL&P, the key issue is power availability, rather than the cost of intertie construction. The mine consumes 8 to 9 MW annually. In 2006, Juneau had a surplus of power that ranged from 20,000 to 30,000 megawatt hours (MWh) to 100,000 MWh annually, depending on water levels. Therefore, while initially there could have been surplus power available to the Kensington Mine with an intertie, it would have been available only on an interruptable basis. That is, Juneau area residential and commercial consumers always have service priority. When the Snettisham facility is off-line, AEL&P would probably not have been able to meet Kensington's needs. Therefore, to ensure continuous mine operations, Coeur Alaska still needed to have substantial back-up generating capacity.

The Dorothy Lake hydroelectric project, which began operating in 2009, increased Juneau's total power generating capacity, but the Kensington Mine, which also opened in 2009, had already invested in its on-site generators.

In summary, it is unlikely that the Kensington Mine would realize any utility-related benefit from the East Lynn Canal Highway. A highway on the east side of Lynn Canal would make it potentially feasible to develop a new hydro-electric source north of the mine (NEI, 2013).

Haines and Skagway Residents in the Mine Workforce: The East Lynn Canal Highway would somewhat increase the travel opportunity for Haines and Skagway residents to work at the mines. Currently, Haines and Skagway residents need to fly or take the ferry to Juneau to connect with company-provided transportation to the mine. Dormitories at the mine allow employees to stay for several days before returning home rather than commute daily.

Increased Security and Public Safety Concerns: Mine developers will incur increased costs associated with providing increased security on and around their facilities, as a result of improved access to the area. The costs associated with this increased security have not been quantified.

Increased Property Tax Payments: The Kensington Mine is currently taxed at the 2012 roadless area rate of 7.85 mills (6.56 areawide mill rate and 1.29 debt service). With the addition of the East Lynn Canal Highway, and assuming the Assembly does not redraw the taxation area boundary lines, mine facilities would be taxed at the rate for property with highway access (11.09 mills), which is 34 percent higher than the roadless rate. By the time the mine started operation in 2010, Coeur Alaska had invested approximately $400 million including capital, taxes, and employee wages and benefits (Bennett, 2010).

General Effects of the East Lynn Canal Highway on the Seafood Industry

Approximately 15 to 17 million pounds of fresh seafood are shipped out via airline or barge each year. Juneau's seafood processing industry would potentially receive lower-cost access to fresh fish markets as a result of the East Lynn Canal Highway due to the reduced travel time and ferry fares compared to the existing practice of shipping refrigerated vans to Skagway by ferry and then trucked to the Pacific Northwest. The East Lynn Canal Highway would also provide more reliable service than shipping by air which is done on a space available basis. The benefits incurred as a result of improved access are anticipated to range from negligible to minor.

If a road were built, it could displace some of the fresh fish traffic that is currently being shipped out by schedule airline flights. Tapping fresh fish markets is advantageous to processors because buyers are willing to pay $1 to $2 per pound more for a fresh, rather than frozen, product (Fehd, 2007). In the fresh fish market, shipping cost and logistics are critical. Fresh fish has a limited shelf-life, making rapid transport to market highly important. From the perspective of seafood processors, barge transport (in refrigerator vans) has the advantage of being relatively low cost (approximately $800 per van; NEI, 2013), but has the disadvantage of being slow.

Alternatively, air shipment of fresh fish can have product in Seattle in just a few hours, though at a 2013 cost of up to $0.58 per pound, and at a higher weather-related risk and assuming cargo space is available (Alaska Air Cargo, 2013). Highway transport offers a third option for movement of fresh fish, offering faster delivery times than the barge at costs lower than air freight. For example, a truck could make the trip from Juneau to Seattle in about 48 hours, at a 2013 cost averaging $0.25–$0.30 per pound. Trucking also has an advantage over barge or ferry service in that product can be sent when needed rather than waiting on the barge schedule.

Juneau's direct seafood marketers may benefit the most by the East Lynn Canal Highway because the overall travel time to Skagway and shipping costs would be reduced. This would allow the direct marketers of fresh fish to make low volume shipments to Whitehorse in small trucks which would improve their market in Whitehorse. This would open up a new market for direct marketers in Juneau as most of the fresh fish in Whitehorse is supplied from Haines (NEI, 2013).

While Juneau processors indicated that a highway to Juneau would result in more fresh fish moving out of Juneau, this was made under the assumption that there would be a continuous highway connecting Juneau to Skagway and Yukon fish markets. In the East Lynn Canal Highway, ferry links connecting the highway with Haines and Skagway would constrain time-sensitive activity of trucking of seafood, and would make transporting seafood more costly.

In summary, the East Lynn Canal Highway is not anticipated to have a substantive impact on shipment of fresh fish out of Juneau. Some product that is now shipped out via barge or jet will probably continue to be shipped by those modes, as they are apparently adequately meeting buyers' and sellers' needs. The highway and ferry link could be used to ship some of the fresh fish that is currently shipped by barge or air (NEI, 2013).

Commercial Fishing Impacts Common to Highway Construction Alternatives

Processors currently freezing fish may decide to send fresh or other value-added product if overland truck routes to markets are available. The East Lynn Canal Highway, which includes a highway and a ferry, would probably not influence harvesters or processors to alter their behavior, due to the cost and time delay associated with ferry service. Commercial fish harvest delivery could be altered as a result of access improvements. Fishermen currently delivering to other ports in Southeast Alaska may elect to deliver their product to Juneau if Juneau processors are able to pay higher prices because they have better access to the higher-value fresh fish markets.

Commercial fishermen could be affected by increased competition from sport fishers if fishing pressure increases as a result of improved access. Increases in sport fisheries harvests could result in lower harvest levels by commercial fisheries in order to provide for adequate escapement levels.

General Effects of the East Lynn Canal Highway on the Commercial Visitor Use of Berners Bay

While Berners Bay is a popular recreation site for Juneau residents, there is limited commercial activity in the area. According to Juneau-based whale-watching operators, Berners Bay is too far north for their tours. A low level of charter fishing may occur in the bay; however, that activity would not experience any effects from the proposed access alternatives.

A list of permitted operators for outfitting/guiding services provided by the USFS for the Berners Bay in 2013 reveals moderate commercial usage of the land surrounding the bay with seven operators. Four companies operate tours in the area. The total number of commercial-guide user days for the 2012 season was approximately 80 per year.

Commercial use of the Berners Bay area would change with the East Lynn Canal Highway. The current, remote wilderness experience now offered in the area could be replaced by somewhat larger-scale operations, depending on USFS management of the area. The area is rich in wildlife and scenic viewing opportunities and, assuming commercial access is available, improved physical access to the area would induce Juneau's visitor industry to develop day-tour or longer excursions to the area.

It is possible that this alternative would increase fishing pressure on streams that are presently on the Juneau road system, especially if there were a substantial number of vehicles driving into Juneau from the Lower 48. At this time, most visitors do not access local fishing streams or areas used by mountain goats by vehicle (NEI, 2013).

3.1.4.2 Effects of the East Lynn Canal Highway on Juneau

Effects on Basic Industries in Juneau

Visitor Industry

A highway link on the east side of Lynn Canal would be expected to substantially affect the independent visitor segment of Juneau's visitor industry, not the cruise visitor market.

Cruise Visitor Market: As presented in the baseline analysis, Juneau's cruise market is expected to continue to grow—especially with the expansion of calls by smaller cruise vessels running multi-day round trips out of Juneau (NEI, 2013). The East Lynn Canal Highway would not affect the volume or economic impact of cruise traffic to Juneau.

Independent Visitor Market: Among independent visitors, those traveling by personal vehicle are the most likely to be affected by the East Lynn Canal Highway (NEI, 2013). According to 2011 AMHS *Annual Traffic Volume Report*, 76,027 passengers disembarked at Juneau. Of these passengers, 63 percent arrived between May and the end of September—the summer visitor season. In addition, 22,098 vehicles disembarked at Juneau. Of these, over 62 percent arrived during the summer season (AMHS, 2012).

Personal vehicle visitor traffic to Juneau would be affected by the East Lynn Canal Highway in several ways, including:

- AMHS travelers traveling north through Southeast Alaska who would otherwise disembark in Haines or Skagway, would disembark in Juneau and continue their travels north via highway and ferry.
- AMHS travelers traveling south through Southeast Alaska who would otherwise have boarded in Haines or Skagway and remained on the ferry at the Auke Bay Ferry Terminal, would drive to Juneau to board a mainline ferry.
- Haines and Skagway-bound ferry travelers who might not otherwise have visited Juneau are likely to spend time and money there after disembarking. Southbound travelers will likely do the same.
- An increase in Whitehorse resident traffic to Juneau is expected with the East Lynn Canal Highway.
- Some Yukon visitors and Alaska-bound highway travelers who now choose not to visit Juneau (including Alcan Highway travelers who do not visit Southeast Alaska at all, and those who visit Haines and/or Skagway as a side trip), may drive to Juneau because of the improved access.

Approximately 28,700 personal vehicle travelers visit Juneau each year (NEI, 2012). The number of visitors who travel to Alaska by ferry or personal vehicle has been declining slowly, a trend affecting Juneau visitation. Nevertheless, Juneau continues to capture approximately one-third of the State's ferry/highway market.

Upon completion of the East Lynn Canal Highway, the number of visitors traveling to Juneau is expected to increase. With completion of the highway, Auke Bay would become the Lynn

Canal's mainline terminus for the AMHS, resulting in a large number of visitors traveling to Juneau that otherwise might not visit the community. The 2006 FEIS (DOT&PF 2006) reported that approximately 60 percent of the non-resident travelers using the ferry between Juneau, Haines, and Skagway are actually spending time in Juneau (the remainder—pass-through visitors—are staying on the ferry as it passes through Auke Bay) and this is likely to still be true. Most of these pass-through visitors would probably spend some time in Juneau with the East Lynn Canal Highway. The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) estimates 2020 summer ADT to and from Juneau would be about 1,345, and 2050 summer ADT would be about the same.

Residents of the region also contribute to the tourism industry. According to interviews conducted by NEI in 2012 (NEI, 2013), residents of Juneau currently travel to Haines, Skagway, and Whitehorse on a fairly regular basis. They travel for a variety of reasons, including special events such as the regional fair, athletic events, and festivals. Because the interior climate of Whitehorse is so different from that of coastal Alaska, many residents travel to Whitehorse to experience drier, warmer days, and activities such as golf that are not easily enjoyed in Juneau, Haines, or Skagway.

A relatively small number of Whitehorse residents now visit Juneau each year. Survey results indicate, however, that there is a very high level of interest in visiting Juneau if a highway is constructed. The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that, based on household survey data, Whitehorse residents would be anticipated to make approximately 89 trips per day to Juneau or approximately 32,485 trips per year if there was a highway connecting the two communities. The number of trips to Juneau made by Whitehorse residents was not estimated for the East Lynn Canal Highway, which has a ferry component. It is anticipated that the East Lynn Canal Highway would have a lower trip rate due to the increased cost and time needed to make the trip.

Juneau would also be expected to capture a somewhat larger share of the Alcan Highway market. This market includes non-Alaska residents traveling on the highway from the Lower 48 states, destined for Alaska. With the East Lynn Canal Highway, some of those visitors might add a Juneau stop to the itinerary, because of the reduced travel cost and increased convenience. Similarly, Juneau would also be likely to draw more of the Yukon visitor market (this includes visitors to the Yukon who are not also visiting Alaska). The Yukon Tourism Indicators report that about 109,400 visitors traveling in private vehicles crossed the U.S./Canada border in 2012 (Yukon Department of Tourism and Culture, 2012).

In summary, the East Lynn Canal Highway could bring approximately 164,500new visitors to Juneau in 2020.

This increase in visitor travel to Juneau would occur over a several year period following completion of the East Lynn Canal Highway. There would be an initial jump in traffic as ferry traffic is diverted to the highway, and then a more gradual increase as Alcan and Yukon visitors grow accustomed to improved access to Juneau and Juneau businesses begin to tap these markets.

Recreational Vehicle Visitors and Related Impacts: According to AMHS data, approximately 600 RVs disembarked in Juneau in 2010 (Gerrish, personal communication, 2012). The total number of 2010 "RV nights"—nights in Juneau spent by RVs—is estimated to be between 1,900 and 3,500. This estimate is derived from two separate calculations: applying the average length of stay according to local RV park operators[17] (3.3 nights) to the total number of RVs (approximately 600); and applying the average summer occupancy of RV parks (35 percent) to the total RV park summer capacity (9,960 nights[18]). In the off-season, total RV nights is expected to be between 190 and 350, or about 10 percent of summer traffic.

The East Lynn Canal Highway would increase the number of RVs arriving in Juneau, thereby increasing demand for RV camping space, dump stations, and related infrastructure. According to the JCVB, Juneau's capacity to serve RVs is limited, but adequate to meet current demand. It includes 78 RV parking sites with RV amenities at private parks, plus up to 124 camping sites at the Mendenhall Campground (which are available for both camping and RV parking). Conservatively, about 100 sites would be considered desirable for RV use (Miller, personal communication 2012).

With the East Lynn Canal Highway, Juneau would become the main terminus for the AMHS. RV travelers on the ferry who otherwise would have gone directly to Haines or Skagway would be forced to disembark in Juneau (termed diverted RVs). While some travelers would choose to travel on directly to Skagway and/or Haines via Katzehin, others would take advantage of the opportunity to visit the capital city, including Mendenhall Glacier and other attractions. Using 2010 AMHS traffic numbers (and assuming that RV traffic would not change substantially from 2010 to the time the East Lynn Canal Highway is built), the total number of diverted RVs would be about 450, in addition to the 600, noted above, that would have included Juneau in their itinerary with or without a highway for a total of approximately 1,050 RVs.

In the 2006 FEIS, it was estimated that *diverted* RVs would spend an average of 2.0 nights in Juneau, and this is still believed to be true. The 2006 FEIS also indicated that the RVs that would have *included Juneau in their original itineraries*, however, would be expected to increase their average length of stay slightly, to 3.5 nights. These diverted RVs and the longer stays by RVs travelers planning to stay in Juneau appear to be the result of fewer constraints than those posed by the current AMHS reservation system. With the East Lynn Canal Highway, no reservation would be needed to board a ferry at Katzehin, and RVs would be able to lengthen (or shorten) their stay much more easily. In 2002, local RV park operators agreed that the Juneau RV market would probably spend, on average, a slightly longer time here if given the opportunity. Together, the *baseline* (600) and *diverted* RV (450) traffic to Juneau would amount to approximately 2,100 to 3,650 RV nights.

In addition to diverted traffic, there would be additional traffic not related to the AMHS market that would be drawn to Juneau by the new highway/shuttle connection. RVs are particularly sensitive to the costs of ferry travel—in the summer of 2013, it cost $319 for round-trip passage between Juneau and Haines for a 28-foot RV (plus $74 for each adult passenger). The same RV

[17] The ASVP IV (McDowell Group, 2012a) indicates that visitors to Juneau who arrive by highway or ferry have an average stay of 3.3 nights, indicating that this range is still valid.
[18] Based on 83 improved RV sites and a 120-day summer season.

traveling round trip between Skagway and Juneau paid $431 for passage and $100 for each adult passenger. These costs have likely been preventing a substantial segment of the RV market from visiting Juneau.

The 2006 FEIS indicated that independent visitor traffic in Lynn Canal is expected to double under the East Lynn Canal Highway and this is believed to still be true. Applying this growth to the total baseline and diverted RV traffic of 1,050 results in an estimate of 2,100 annual RVs to Juneau, once the East Lynn Canal Highway is constructed. This additional traffic would, like the ferry market, be expected to spend an average of 3.5 nights in Juneau.

Total RV Traffic and Capacity: The total number of annual RVs that are estimated to visit Juneau in the first year of highway access is nearly 3.5 times the current level (2,100 compared to 600). With 1,200 RVs (diverted plus new RV traffic) spending an average of 3.5 nights and 900 RVs spending an average of 2.0 nights, the total number of annual Juneau RV nights expected in the first year of highway access is approximately 6,000, 90 percent of which would likely come during the summer season, which is May through September or 120 to 150 days. Over the visitor season, that averages about 40 to 50 per day. Since growth rates are forecast to remain essentially flat, the number of RVs per day in 2050 is anticipated to be about the same.

As stated above, the current capacity for RVs in Juneau in the May to September period is conservatively about 9,960 RV suitable sites (using 120 days for the season and improved RV sites), or an average of 83 RV spaces every night.

RV Infrastructure Needs: As described above, there are several RV parks in Juneau, totaling about 200 sites—78 RV-ready sites and up to 124 camping sites that can be used by RVs or tent campers. In addition, CBJ Docks and Harbors department manages five RV parking sites at Savikko Park (no RV amenities), which is near the Douglas Boat Harbor. A parking permit, which is good for up to 10 days, is required and costs $10.00 per day (CBJ, 2013). It is expected that the private sector would respond to an increased demand and develop additional RV-related services, including increasing capacity, RV rental businesses, and RV supply services. According to the CBJ, no current plans are on file to build a new RV park.

The process of planning and building more RV parks in Juneau will present some challenges to prospective RV park operators. According to city officials, it is difficult to find developable land in Juneau that is appropriate for RV parks. It would need to have easy highway access, water and electrical utilities, and accommodating neighbors. Such a location is likely to be desirable by a variety of interests, and in the past it has been found that an RV park does not promise the revenues that other operations would.

With highway access and the accompanying increase in RVs, however, an RV park would become more feasible financially. Despite the challenges outlined above, it is expected that the private sector would make the necessary adjustments to meet demand, either through enlarging current parks or building new ones. Because there is already so much unused capacity, the need for additional space would be much less than the probable increase in traffic, at least in the short term.

Impacts of Increased RV Traffic on Juneau: Impacts of RV traffic growth would depend on where RVs choose to travel while in Juneau.

On Egan Drive, the growth in traffic would have little impact. According to the Alaska Department of Transportation and Public Facilities (DOT&PF) (2011), Egan Drive by Juneau-Douglas High School had an ADT count of 17,109 in 2011. With highway access, the number of RVs on Egan Drive on any day in the summer is unlikely to exceed 51—the average daily number of RVs that are expected to be in Juneau during the summer season. Thus the RVs would represent less than 1 percent of the total vehicular traffic on any given day. The presence of passing lanes further mitigates the potential for impacts of an increased number of RVs in Egan Drive traffic.

The impacts on downtown Juneau from increased RV traffic would be more noticeable. With steep and narrow streets, no passing lanes, numerous visitor attractions, very limited parking, and an already highly congested traffic situation in the summer, downtown is not well-equipped for an increase in RVs. The unique nature of RVs further accentuates their impact: they are large, slow-moving, and, like other visitors, tend to stop at attractions. Drivers unfamiliar with downtown Juneau may have difficulty finding their way.

However, considering the 2011 annual ADT in the downtown core, RVs would again represent a small percentage of all vehicles. Annual ADT ranges from 1,170 on Seward Street near 4th Street, to 3,345 on South Franklin Street, to 11,872 in front of the Goldbelt Hotel (AMHS, 2012). (These are year-round numbers; daily average numbers in the summer are higher.)

The *Downtown Juneau Tourism Transportation Study* (CBJ, 2003) makes a series of recommendations designed to relieve both vehicular and pedestrian congestion in downtown Juneau[19]. These include increasing sidewalk capacity, pedestrian channelization, and additional highway connections. The city has also taken measures to increase parking capacity and enforce stricter parking regulations, such as those outlined in the *Juneau Downtown Parking Management Plan* (CBJ, 2010b), and the *Willoughby District Land Use Plan* (CBJ, 2012b). Although RVs are not addressed in the management plan or Willoughby plan, if the city continues its efforts to improve the situation, downtown Juneau will be better equipped to handle the increase in RV traffic that may occur as a result of highway access.

Mining

Please refer to General Effects of the East Lynn Canal Highway, Section 3.1.4.1.

Effects on Support Industries in Juneau

The East Lynn Canal Highway would have generally positive economic effects in Juneau's support sector. The retail and service sectors in particular are likely to experience economic benefits from the East Lynn Canal Highway.

[19] This plan has not been updated, and no similar study has been done to date.

Retail Trade and Service

Juneau's retail and service sectors would be affected by the East Lynn Canal Highway in several ways:

- Increased travel and spending by non-Alaskan visitors due to improved access to Juneau
- Increased spending by residents of Haines, Skagway and Whitehorse, who would have improved access to Juneau's more developed retail and service sectors
- Potential for decreased spending of recreational dollars as Juneau residents would have more convenient access to Haines and Skagway
- Some potential decrease in spending in Juneau as a result of Juneau household spending in Whitehorse when exchange rates are favorable

Non-Alaskan Traffic: Spending by non-Alaskans would increase in Juneau as a result of the East Lynn Canal Highway. The addition of 70,000 new non-Alaskan visitors to Juneau's visitor industry in 2020 would generate approximately $5.4 million in visitor spending. (Visitor spending is also addressed in a following section.)

Regional Resident Traffic: Because of Juneau's more developed retail and service sectors, many residents from Haines and Skagway travel to Juneau for pleasure, vacation, medical reasons, business travel, and/or for shopping. The *Juneau Access Household Survey* conducted in 1994[20] indicated that approximately $4 million was spent annually in Juneau by Haines and Skagway residents, accounting for approximately 0.5 percent of gross sales in Juneau. Survey results suggested that Haines households spent an average of $3,500 in Juneau over the previous year, while Skagway households averaged $3,100.

Survey results suggested that Haines and Skagway households would spend more in Juneau if a highway were built. Sixty-one percent of Haines households said they would increase spending. (The remainder said that their spending would stay the same or that they were unsure how their spending would change.)

While increased Haines and Skagway household spending in Juneau could affect businesses in those smaller communities, the effect in Juneau would be relatively small. In comparison to Juneau's total gross sales of approximately $1 billion annually, even a doubling of Haines and Skagway resident spending would increase total gross sales by less than 1 percent.

The issue of Haines and Skagway household spending in Juneau is addressed in more detail in the Haines and Skagway Effects section.

Juneau Resident Spending in Haines and Skagway: Juneau's retail and service sectors might also experience some minor decline in recreation-related spending in Juneau by Juneau residents. With the East Lynn Canal Highway, local residents would have new options for spending their recreational time and money. However it is difficult to predict the volume of recreation spending diverted from Juneau businesses to Haines or Skagway businesses.

[20] No more recent survey with these data has been done to date.

Results of the 2003 *Juneau Access Household Survey*[21] indicate that the frequency of travel to Haines and Skagway would increase with an East Lynn Canal alternative, such as the East Lynn Canal Highway. Juneau households are currently taking an annual average of about two trips to Haines and one trip to Skagway each year. Juneau residents estimate that they would use an East Lynn Canal highway 3.6 times per year to access Haines and 3.4 times per year to access Skagway. This suggests that Juneau household travel to northern Lynn Canal would at least double, with a corresponding increase in spending. This increase does not necessarily translate into less spending in Juneau. To the extent that additional Haines and Skagway trips replace other out-of-town trips, there would be no negative effect on Juneau. To the extent that new travel to Haines and Skagway replaces local recreational activity, there would be an impact on Juneau business sales, though a minor one.

Transportation

Please refer to the General Effects of the East Lynn Canal Highway, Section 3.1.4.1.

Summary of Visitor Spending and Related Impacts in Juneau

Based on data in the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), the total traffic to and from Juneau associated with the East Lynn Canal Highway is estimated at 835 annual ADT in 2020. The East Lynn Canal Highway would generate approximately 828 percent more annual ADT than the No Action Alternative (90 annual ADT) in 2020. Traffic on Alternative 2B is predicted to remain relatively constant over the 30-year period between 2020 and 2050, changing from 835 to 825 annual ADT. Because traffic volumes decline by 10 annual ADT over the 30-year period, visitor spending and related impacts are anticipated to also decline slightly over that period. The impacts for 2020 are reported because they represent the greater impact of the two years.

The 2006 FEIS reported total traffic and visitor traffic by community. The percentage of traffic that is visitor traffic is believed to be the same so this information was used to calculate a ratio. The ratio was then applied to the 2020 traffic forecast to determine visitor traffic. Based on calculations using this ratio, the total increase in visitor traffic to and from Juneau associated with the East Lynn Canal Highway is estimated at 390 annual ADT in 2020. These estimates are less than half of total traffic associated with this alternative because Juneau residents would account for the majority of traffic on a highway. The estimates of new traffic also do not include baseline traffic (baseline traffic is already affecting the economy and therefore is not counted along with new traffic in estimating new visitor spending).

Converting these vehicle traffic estimates to number of new visitors indicates that Juneau would see about 164,500 new visitors in 2020 with the East Lynn Canal Highway. These are conservative estimates because it is based on the assumption that all traffic is round-trip (in other words, 2 annual ADT equals one additional visiting vehicle, carrying an average of 2.3 people). In reality, some of the traffic would be one-way travelers passing through Juneau on their way north or south.

[21] Note that this survey (McDowell Group, 2003) does not contain the same data as the *Juneau Access Household Survey* conducted in 1994 (McDowell Group, 1994). No more recent survey with the data resulting from 2003 *Juneau Access Household Survey* as been conducted to date.

Based on data from AVSP VI, for the purposes of the analysis for the JAI Project SEIS, it is assumed that visitor spending in Juneau would average $77 per visitor per day (McDowell Group, 2012a). Though regional residents may be traveling to Juneau for different reasons, this number is considered a reasonable, though perhaps conservative, per trip estimate for all visitors to Juneau from Haines, Skagway, and Whitehorse.

Based on these per visitor per trip spending averages ($77 per day), the East Lynn Canal Highway would result in total additional visitor spending in Juneau of approximately $12.7 million in 2020.

The economic impact of this additional spending would include new employment and payroll in Juneau. Based on visitor industry-related payroll and spending in Southeast Alaska for the 2010–2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b). Based on this analysis, the increase in visitor spending in Juneau would generate approximately $4.7 million in new payroll and an estimated 130 additional jobs (annual average) in 2020[22]. These employment and payroll estimates, summarized in Table 3-9, include total direct and indirect effects associated with the increased visitor spending.

Table 3-9: Alternative 2B Projected Traffic and Resulting Visitor Economic Impacts in Juneau, 2020

Total Traffic under No Action Alternative (annual ADT)	90
Total Traffic under Alternative 2B (annual ADT)	835
Change in Traffic (annual ADT) (over No Action)	745
Change in Visitor Traffic (annual ADT) (over No Action)	390
Total New Visitors Annually (over No Action)	164,500
Total New Visitor Spending Annually over No Action)	$12,670,000
New Local Payroll Annually (over No Action)	$4,730,000
New Local Employment Annually (over No Action)	130

Because of relatively flat population projections in Southeast Alaska (i.e., 0.004 percent annual decline from 2020 to 2050; ADOLWD, 2013a), traffic on the East Lynn Canal Highway is predicted to remain the same (within 1 percent) for the 30-year forecast period; therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Effects on Population in Juneau

Improved access resulting from the East Lynn Canal Highway is expected to have negligible to minor impacts on population trends in Juneau. Population growth is driven primarily by economic growth. For the East Lynn Canal Highway, increased visitor spending (including new

[22] The IMPLAN economic impact modeling system, used in the 2006 FEIS, provided employment and payroll multipliers for each sector of the Juneau economy.

non-Alaska spending and new spending by Haines, Skagway and Whitehorse residents), would be expected to directly and indirectly create about 130 new jobs in Juneau in 2020.

Each new job in the economy results in an increase in population of about 1.5 people[23]. That is, 130 new jobs would be expected to result in a population increase of about 195 residents.

In the East Lynn Canal Highway, the Day Boat ACF that is homeported in Auke Bay in the No Action Alternative would be based in Skagway. Assuming that all the crew members and their families relocate from Juneau to Skagway, Juneau could experience a loss of 35 residents. This loss would be somewhat offset by additional highway maintenance employees for the East Lynn Canal Highway, which is estimated at two full-time and five seasonal positions. Assuming these positions would be filled by people relocating to Juneau with family members, the net loss of Juneau residents would be approximately 15.

A population increase in Juneau of 195 residents would represent an overall increase of approximately 0.6 percent under the East Lynn Canal Highway in 2020 (Juneau's 2013 forecasted population is estimated at about 32,165). This would represent a negligible impact to overall population in Juneau.

Construction of the highway and new ferry terminal would have a negligible, short-term effect on population in Juneau due to an influx of construction workers and potentially their families.

Effects on Housing and Real Estate

A population increase of 195 residents, caused by new local employment (estimated to be an additional 130 jobs in 2020), would result in additional demand for about 75 housing units (assuming 2.6 persons per household per the 2010 Census). Juneau had approximately 650 vacant housing units in 2010, so this additional demand is within Juneau's housing capacity. The impact of the East Lynn Canal Highway on real estate values in Juneau would include an increase in private property values along the highway. For example, the value of Goldbelt's property in and north of Echo Cove would increase in value with improved access. In addition, a proposed land swap in the Berners Bay would put additional land in private sector ownership (the land swap is described in more detail below). Highway access to this property would increase the land's value, but it could also increase trespassing and vandalism (NEI, 2013).

Construction of the highway and new ferry terminal would have a negligible, short-term effect on housing and real estate in Juneau due to an influx of construction workers and potentially their families.

Please refer to the General Effects of Improved Access for more discussion of impacts on Juneau's housing and real estate markets.

[23] Based on an estimated participation rate of 65 percent, meaning that 65 percent of the local population participates in the local labor force.

Effects on Municipal Revenues and Expenditures

Sales tax revenues (plus hotel, liquor, and tobacco taxes) would increase at a rate proportional to the increase in spending in Juneau. Total additional visitor spending in Juneau of about $12.7 million annually in 2020 would generate approximately (assuming all of the spending is taxable) $630,000 in additional sales tax revenues (based on a 5 percent tax rate). Although it has not been quantified, there would be a slight loss of sales tax revenue associated with the relocation of the Day Boat ACF crew members and their families.

The CBJ could also expect some increase in property tax revenues. As described above, values of certain property along the highway would increase, and road access would also increase the mill rate at which property is taxed.

The East Lynn Canal Highway would be likely to spur development of private property along the highway including Goldbelt's property in the Echo Cove/Cascade Point areas. As undeveloped Alaska Native Claims Settlement Act (ANCSA) Corporation entitlement property, it is currently not subject to property taxes.

The Berners Bay land swap has the potential to increase CBJ tax revenues, and highway access to that property would increase the taxable value of that land. Senator Lisa Murkowski introduced Senate Bill S1354 on June 26, 2003. The legislation was designed to resolve issues of equity concerning restrictions placed on Cape Fox during their selection of ANCSA land. Under the complex land exchange plan, Cape Fox Corporation would receive surface and subsurface ownership of approximately 2,664 acres of National Forest system lands at the Jualin Mine site near Berners Bay. Sealaska Corporation would select lands from within a 9,329–acre pool of National Forest lands at the Kensington Mine. Sealaska Corporation would receive the surface and subsurface title to land of equal value to the Sealaska subsurface lands and land interests that would be conveyed to the federal government. The USFS would receive lands and land interests of equal value from the southern Southeast Alaska area.

The lands being exchanged in Berners Bay are not timberlands; the interest in this exchange stems from the proximity of the land to existing mining claims (there is, however, no provision in the current bill to restrict logging). Entitlement lands held by ANCSA corporations are not taxable until they are developed.

The land exchange bill was sent to the Senate Energy and Resources Committee on June 26, 2003. A similar House bill was passed out of committee on October 2, 2003.

Two more bills dealing with the land exchange were then introduced: S 2615 introduced on April 7, 2006 (109th Congress) and Senate Bill 203 (110th Congress) January 8, 2007. Senate Bill 203 was read twice and then referred to the Committee on Energy and Natural Resources. As of December 2012, no bill for this land exchange has been passed.

Construction of the highway and new ferry terminal would have a negligible, short-term effect on municipal tax revenues in Juneau due to an influx of construction workers and potentially their families' spending money in Juneau.

Please refer to the General Effects of Improved Access for more discussion of impacts of the East Lynn Canal Highway on Juneau's municipal revenues and expenditures.

3.1.4.3 Effects of the East Lynn Canal Highway on Haines

Effects on Basic Industries in Haines

The Haines economy is based on the visitor industry, commercial fishing, seafood processing, government, construction industry activity, transportation, and retirement/investment income. The local economy has a high level of dependence on personal income that is unrelated to employment, i.e., retirement income, transfer payments, and investment income. The East Lynn Canal Highway would affect the various segments of the basic economy in different ways.

The Visitor Industry

Haines is struggling to maintain a position in the independent and cruise visitor markets. Independent visitor travel to Haines has been declining, direct cruise traffic has been erratic, and the local visitor industry has a growing dependence on Skagway cruise passengers taking excursions to the Haines area. The East Lynn Canal Highway would affect Haines' non-Alaskan independent market, but would not affect the cruise market.

In 2009, the visitor industry accounted for about 38.4 percent of the Haines economy in terms of employment and 25.3 percent of employment-related income in the community (about $6.8 million out of total employment related income of $27.1 million, in 2011; ADOLWD, 2010).

Cruise Visitor Market: According to cruise operators, a highway link on the east side of Lynn Canal such as the East Lynn Canal Highway would not affect cruise itineraries planned for the Alaska market, including Haines port calls. Haines will continue to be a secondary port of call in the Alaska market. Primary ports of call, including Ketchikan, Juneau, and Skagway, have a well-developed selection of tours and attractions (which is critical for generating on-board sales commissions for the cruise lines), extensive and convenient retail opportunities, and multiple-ship infrastructure. Haines' cruise-related assets are more limited.

Forces that will drive Haines' development as a cruise destination will include:

- Further development of attractions and excursions in Haines
- Growth in the regional cruise market overall
- Development of port facilities elsewhere in the Inside Passage, including Pt. Sophia near Hoonah, and Prince Rupert, British Columbia
- Over-crowding at the most popular ports (Juneau, Skagway, etc.)

The HCVB commissioned a survey of cruise and FVF passengers in 2011 to discover how Haines could improve the town's attractiveness to such visitors. According to the report, cruise visitors rated a continuous walkway along the waterfront as most important, followed by better directional signs, more cultural and historical information, more visitor information kiosks, and more parks and open spaces (HCVB, 2012).

Development of the East Lynn Canal Highway would not change any of these factors. One potential concern is the aesthetic impact of the highway. Cruise lines, however, typically cruise at night and offer a port stop during the day.

Changes in cruise traffic to Skagway would affect the number of cruise passengers buying Haines excursions, but no changes in Skagway cruise traffic are expected to result from the East Lynn Canal Highway. The effect of the East Lynn Canal Highway on Skagway is addressed in the following section, 3.1.4.4 (Effects of the East Lynn Canal Highway on Skagway).

The East Lynn Canal Highway would provide additional opportunities for pre- or post-cruise land tour options, but would have a negligible impact on this component of Haines' visitor industry.

Independent Visitor Market: The Haines non-Alaskan independent visitor market would be affected by the East Lynn Canal Highway.

Compared to the No Action Alternative, the East Lynn Canal Highway would:

- Draw more visitors to northern Southeast Alaska than is now the case
- Increase access to Haines for Juneau's independent visitors
- Increase access to Haines for Skagway's independent visitors
- Increase access to Haines for Juneau residents
- Increase exposure to Whitehorse residents
- Remove Haines from the AMHS mainline system

These issues are addressed in detail below.

In 2013, northbound ferry travelers with vehicles can take the mainline ferry or day-boat ferry *(M/V Malaspina)* service to either Haines or Skagway. After completion of the East Lynn Canal Highway, northbound ferry travelers would disembark in Auke Bay, drive to Katzehin, then ferry to Haines. Similarly, Haines would no longer be the boarding point for visitors traveling southbound on the mainline ferry.

This change would impact visitor travel to Haines. Visitors traveling northbound and southbound through north Lynn Canal would, as in the past, have a choice of passing through (and spending time in) Haines, Skagway, or both. Similarly, new visitors to Southeast (those that prior to construction of a highway to Juneau would have bypassed Southeast altogether) would also have the same choice (visit Haines, Skagway, or both), as would Juneau's independent visitors who would have better access to Haines and Skagway with a highway to Katzehin. In addition, the residents of Juneau would have better access to Haines.

How would these visitors respond to the change in Lynn Canal access? Key factors working in Haines' favor include:

- Shorter travel distances through Haines between Interior Alaska and Southeast Alaska (the trip from Haines to Tok, for example, is 57 miles shorter than the trip from Skagway to Tok)
- Haines has better developed RV support infrastructure
- Attractions that are unique to Haines such as the Bald Eagle Preserve, good sport fishing opportunities, and outdoor activities that appeal to the independent market
- Well-developed events that are popular with Juneau and other regional residents, such as the Kluane Bike Relay, the Southeast Alaska State Fair and Bald Eagle Music Festival, the Great Alaska Craft Beer and Homebrew Festival, the Alcan 200 Road Rally snowmachine race, the Alaska Bald Eagle Festival, basketball and softball tournaments, etc.
- Haines' better weather conditions and more predictable winter recreation opportunities
- Availability of land for development of summer cabins, recreational homes, or retirement homes

Key factors working against Haines in this regard include:

- The real and perceived inconvenience of the Haines ferry link to the Katzehin Ferry Terminal and extended Cascade Highway
- The cost of the Haines ferry link to the Katzehin Ferry Terminal
- The marketing efforts of Skagway, Whitehorse, Juneau, and perhaps in the future, Carcross, diverting potential visitors from Haines
- Skagway's more highly developed visitor infrastructure, including attractions, services, and retail
- Whitehorse's larger retail and service opportunities

Two very important factors weigh into this issue. First, the frequency of ferry service between Katzehin-Haines and Skagway-Haines, and the cost of that ferry service, are critical in determining the number of independent visitors to Haines. The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) and 2014 Marine Segments Analysis both assume that a high level of service frequency would be provided. It is also predicted that the fare between Haines-Katzehin and Katzehin-Skagway would be about one-fifth to one-sixth the current fare from Auke Bay. Second, the number of independent visitors traveling to Haines would depend in part on how aggressively the community markets itself. Additional investment in marketing Haines as a destination would attract more travelers.

In 2011, Haines hosted an estimated 96,000 visitors, of which 23 percent, or approximately 22,000, were travelers not associated with cruise ships. In 2011, a total of 61,100 passengers (including residents and non-residents) boarded an AMHS ferry in Haines, while 60,400 passengers disembarked. About 6,400 passengers arrived in Haines via air taxi (HCVB, 2012). The Federal Aviation Administration's count of total departing air passengers for 2011 was 8,544, and of that 81.5 percent were on air taxi flights (RITA, 2013a); thus, approximately 6,960 passengers departed by that mode.

It is clear that the segment of Haines' visitor industry that depends on independent travelers would change. Overall, however, visitor traffic to the community is expected to increase with the East Lynn Canal Highway. The economic impact of this change in traffic depends primarily on visitors' length of stay. Part of the time that visitors now spend in Haines is associated with AMHS service frequency and delays. Ferry service between Haines-Katzehin or Haines-Skagway would be more frequent than current ferry service, which would provide more opportunity to pass directly through Haines without spending time or money. While passengers traveling by ferry are more likely to travel through since they have been idle for a long time and have not consumed fuel on the trip, passengers traveling by highway for a couple of hours would be more inclined to stop for food and fuel.

The key factor regarding length of stay now and after construction of the East Lynn Canal Highway would be the degree to which Haines develops and promotes local assets and attractions. The greater effort that is made, especially in Juneau, to develop Haines as a visitor destination, the more time visitors would spend in the community and the more money they would spend.

The opportunity to attract weekend round-trip travel from Juneau is particularly important. Currently a family of four will spend over $430 to travel round-trip, with a car, on the ferry to Haines[24]. With the East Lynn Canal Highway, the out-of-pocket cost would be $118. Again, the cost of the ferry is important, but with any reasonable assumption about ferry costs, the overall cost of a trip to Haines would be dramatically reduced.

Retirement and Lifestyle Sector

The East Lynn Canal Highway would enhance Haines' role as a retirement community. For retirees, access to health care services is a critical issue. The East Lynn Canal Highway would provide more immediate access to Juneau's relatively well-developed health care sector. It is not possible to quantify this impact, but the long term result would be more people choosing Haines as a place to have a year-round or seasonal retirement home.

The retirement and "lifestyle"-related sector of Haines economy is large. In 2011, personal income for 28 percent, or more than one in four households, in Haines came from retirement sources (U.S. Census Bureau, 2013).

Construction

Haines' construction industry might benefit from the construction of the East Lynn Canal Highway, which would cost approximately $518.0 million. This very large construction project would provide business opportunities for local heavy construction contractors. However, because the construction contracts would be awarded competitively, it is not possible to predict what the employment and income-related effects would be in Haines.

In terms of residential construction, some increase in demand for real estate in Haines would be expected to result from improved access. This increased demand would create business and employment opportunities for local contractors and their employees.

[24] Based on two adults, one child over 12 and one child under 12, 16-foot vehicle summer fares.

Mining

The East Lynn Canal Highway would provide better opportunities for Haines residents to find employment at Kensington Mine, or for employees of the mine to relocate to Haines. The mine is within the CBJ boundaries, but about equidistant between Haines and Juneau. A variety of factors could persuade employees to live in Haines rather than Juneau, such as housing affordability, smaller schools, access to fish and game resources, and perceived superior quality of life associated with residing in a smaller community. Please refer to General Effects of the East Lynn Canal Highway for more details on mining industry impacts.

Effects on Support Industries in Haines

Haines' support sector industries could be substantially affected by the East Lynn Canal Highway. The Haines economy already experiences a substantial level of economic "leakage." Leakage occurs when local residents buy goods and services from non-local merchants (leakage is a growing issue for all Alaska communities, as Internet sales increase). Goods and services are perceived to be less expensive in Juneau, and Juneau has a wider selection of goods and services. Improved access to Juneau would result in more leakage from the Haines-area economy as more local residents take advantage of Juneau's better-developed retail and service sectors.

At the same time, the local support sector would benefit from an increase in Juneau resident travel to Haines. Juneau residents expressed a strong interest in traveling more often to Haines (and Skagway). This increased travel (primarily recreation-related) would create new business opportunities in Haines.

Retail Trade and Services

There are a number of issues that would ultimately determine the impact of the East Lynn Canal Highway on Haines' retail and service sector business, including:

- The increase in Haines household spending in Juneau
- The effect of improved access on shipping costs to Haines
- Changes in spending in Haines by Juneau and other non-residents

Haines Household Spending in Juneau: To a large degree, the amount of leakage from the Haines economy to Juneau depends on the cost, convenience, and resulting frequency of travel between the two communities. Members of Haines households traveled to Juneau an average of nine to ten times a year in 2006. According to 1994 *Juneau Access Household Survey* results, on average each Haines household spent approximately $3,500 (1994 dollars) in Juneau each year. There were approximately 800 households in the Haines area in 1994. This suggests that Haines households spent an estimated $2.8 million in Juneau on goods and services over the previous year. If the 1994 spending data is adjusted for inflation, total Haines household spending in Juneau would have totaled about $4.3 million annually. There were 744 households in Haines according to the 2010 American Community Survey. In 2012 dollars, $3,500 equates to about $5,270. Assuming Haines households spending habits are the same, Haines residents spent approximately $3.9 million in Juneau in 2012. This is probably a conservative estimate. Spending has likely increased (more than inflation) along with the development of Juneau's retail sector and some improvement in ferry service (such as initiation of day-boat service).

According to the 1994 survey, with improved access to Juneau, Haines households indicated that they would spend more money in Juneau than they did at the time of the survey. In fact, 61 percent of Haines households indicated that their spending in Juneau would increase with improved access. Another 31 percent did not expect their Juneau spending to change and the remainder was unsure. It is difficult to predict how much additional leakage from Haines' support sector would occur with the East Lynn Canal Highway, but certainly some increase would be expected, simply because more frequent travel is expected.

Effect of Improved Access on Shipping Costs to Haines: Barge service to Haines would not be expected to change with the East Lynn Canal Highway. Therefore, shipping costs for goods moved by this mode would probably not change. However, some freight does come into Haines via ferry from Juneau. Shipment of that freight would be less expensive. This would translate into lower costs for Haines consumers and/or increased profits for merchants.

Increase in Spending by Juneau and other Non-Residents in Haines: It is not known how much money Juneau residents typically spend while visiting Haines and Skagway. A 2006 informal survey of visitor-affected businesses in Haines found that spending by Juneau residents accounted for about 5 percent to as much as 15 percent of individual businesses' overall sales. Juneau-resident visits to Haines for fairs and music festivals, bike and snow machine races, bald eagle viewing, and a variety of other reasons represent an important segment of sales for some Haines businesses.

The amount of additional money spent in Haines by non-residents would depend on the change in travel frequency and the length of stay. Traffic through Haines from the East Lynn Canal Highway is expected to increase, mostly as a result of Juneau residents' recreation-related travel. The average length of stay, however, might be shorter. Shuttle ferry service between Haines-Katzehin or Haines-Skagway would be more frequent than current ferry service, allowing more opportunities to pass directly through Haines without spending time or money. After construction of the East Lynn Canal Highway, the key factor regarding length of stay in Haines (as well as overall visitation) would be the degree to which Haines develops and promotes local assets and attractions. The more effort that is made to develop Haines as a visitor destination, the more time and money visitors will spend in the community.

The overall effect is that the East Lynn Canal Highway would change the nature of Haines' retail and service sectors. Declining local spending by Haines households would be largely offset by increased spending by non-Alaskan visitors and Juneau residents visiting Haines (see below).

It is important to recognize that certain businesses would benefit by improved access, while others might see a decline in business. For example, businesses that cater to the visitor market, such as motels and hotels, restaurants, gift shops, convenience stores, and gas stations, would see an increase in business. Alternatively, stores that already compete with Juneau retailers, such as grocery, clothing, hardware, and lumber supply stores, could see some decline in business as Haines residents take advantage of better access to Juneau. It should be noted that Haines residents would be spending more in Juneau because goods and services are available at a lower price. This means improved access would play a role of reducing the cost of living in Haines.

Approximately one-third of the Haines economy is dependent on visitor travel to and through the community. That third of the economy would change as a result of highway construction, with some businesses gaining sales and others potentially seeing a decline in sales. However, more than 60 percent of the economy is not visitor-dependent and it would benefit by improved access to the regional service and supply center—Juneau—which would result in lower cost of doing business.

In summary, while the distribution of benefits and costs in the Haines business community is likely to be uneven, the overall increase in traffic would generate an overall increase in economic activity, as quantified below.

Transportation

See Section 3.1.1.3, General Effects of Improved Access on the Transportation Industry, and Section 3.1.4.1, General Effects of the East Lynn Canal Highway. In summary, Haines would not experience any change in its basic barge service. The cost of moving freight from Juneau to Haines (and the reverse) would decline with improved access. Demand for air transportation services to and from Haines would decline.

Local Government

Local, State, and federal governments account for 283 jobs and about $13.7 million in personal income in Haines. The largest single private employer in the Haines Borough is Ocean Beauty Seafoods, which provides a substantial number of jobs. The tourism industry is larger, but the jobs are spread over a number of employers. Both of these industries are seasonal. Haines Borough School District and local government are the second and third largest employers (ADOLWD, 2010). The impact of highway construction on government employment in Haines would be minor—construction provides about 18 percent of total wages, but only 7.5 percent of total employment. If the Haines economy grows as a result of improved access to Juneau, there would be increased demand for public services and related employment.

Operation of Day Boat ACFs in North Lynn Canal would create State government (AMHS) job opportunities in Haines and Skagway. One Day Boat ACF would homeport in Haines, which would be similar to the No Action Alternative, so negligible effect is anticipated. One Day Boat ACF would have two crews of 10 to 12 people.

Summary of Visitor Spending and Related Impacts in Haines

The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that the East Lynn Canal Highway would produce traffic to (and through) Haines of approximately 455 annual ADT in 2020. This traffic includes existing (baseline) traffic as well as induced Haines resident traffic. Traffic on Alternative 2B is predicted to remain relatively constant over the 30-year period between 2020 and 2050, changing from 455 to 450 annual ADT. Because traffic volumes decline by 5 annual ADT over the 30-year period, visitor spending and related impacts are anticipated to also decline slightly over that period. The impacts for 2020 are reported because they represent the greater impact of the two years.

Excluding baseline and induced local traffic, and based on visitor traffic calculations described above, new visitor traffic to Haines with the East Lynn Canal Highway would be approximately 215 annual ADT in 2020.

Growth in Juneau resident travel accounts for the majority of this traffic increase over the No Action Alternative. The 2003 *Juneau Access Household Survey* measured a strong interest among Juneau residents for more travel to Haines. This trend appears to be supported by the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) because the East Lynn Canal Highway has the fewest constraints to travel to both Haines and Skagway of all of the alternatives. Converting the 2013 vehicle traffic forecasts to number of new visitors indicates that Haines would see about 89,400 new visitors in 2020 (based on a vehicle occupancy rate of 2.3), with the East Lynn Canal Highway. These are conservative estimates because they are based on the assumption that all traffic is round-trip traffic. In fact, some of the traffic would be one-way travelers passing through Haines on their way north or south.

The amount of increased spending in Haines, associated with this increased visitor traffic was estimated for the East Lynn Canal Highway. Based on data from AVSP VI, for the purposes of the analysis for the JAI Project SEIS, it is assumed that visitor spending in Juneau would average $77 per visitor per day (McDowell Group, 2012a). The $77 range is probably a conservative estimate, but represents a reasonable blend between visitors traveling to Haines specifically and visitors traveling only through Haines to other destinations.

Based on these per-visitor-per-trip spending averages, the East Lynn Canal Highway would result in total additional visitor spending in Haines of about $6.9 million in 2020.

In terms of economic impact, increased spending in Juneau by Haines residents would offset some (or all) of this new visitor spending in Haines. (This increased spending by Haines residents in Juneau would occur because of lower prices available in Juneau. Lower prices paid for goods and services translate into lower cost of living for Haines residents).

The 2006 FEIS indicated that approximately 10 percent of new spending that would occur in Juneau would be by Haines residents. This value is believed to still be valid. Spending in Juneau by Haines residents is anticipated to be about $1.3 million in 2020. Based on this estimate, total visitor spending in Haines would increase by approximately $5.6 million in 2020.

The economic impact of this change in spending would include new employment and payroll in Haines. Based on visitor industry-related payroll and spending in Southeast Alaska for the 2010–2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b). Based on this analysis, the increase in visitor spending in Haines of $5.6 million would generate $2.1 million in new payroll and an estimated 60 additional jobs (annual average) in 2020 for the East Lynn Canal Highway. These employment and payroll estimates, which are summarized in Table 3-10, include total direct and indirect effects associated with the increased visitor spending in Haines.

Table 3-10: Alternative 2B Projected Traffic and Resulting Visitor Economic Impacts in Haines, 2020

Total Traffic under No Action Alternative (annual ADT)	55
Total Traffic under Alternative 2B (annual ADT)	455
Change in Traffic (annual ADT) (over No Action)	400
Change in Visitor Traffic (annual ADT) (over No Action)	215
Total New Visitors Annually (over No Action)	89,400
Total New Visitor Spending Annually (over No Action)	$6,880,000
Less New Haines Resident Spending in Juneau Annually	$1,270,000
Net Change in Visitor Spending in Haines Annually	$5,620,000
New Local Payroll Annually (over No Action)	$2,100,000
New Local Employment Annually (over No Action)	60

Because of relatively flat population projections in Southeast Alaska (i.e., 0.004 percent annual decline from 2020 to 2050; ADOLWD, 2013a), traffic on the East Lynn Canal Highway is predicted to remain the same (within 1 percent) for the 30-year forecast period; therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Effects on Population in Haines

The East Lynn Canal Highway would not generate major population changes in the community. Contingent upon the availability of regular, frequent, and low-cost ferry service between Haines and Katzehin, the community could expect an increase in traffic overall (over current traffic and over the No Action Alternative). To the extent that this increased traffic translates into additional spending in Haines, economic and population growth could occur. In addition, improved access would result in some additional growth in the retiree population (as described above) as well as the summer "second-home" population.

For the East Lynn Canal Highway, increased visitor spending (primarily new spending by Juneau residents) would be expected to directly and indirectly create an estimated 60 new jobs in Haines in 2020.

Typically, each new job in the economy results in an increase in population of about 1.5 people[25]. That is, 60 new jobs would be expected to result in a population increase of about 90 residents for the East Lynn Canal Highway.

A population increase in Haines of 90 residents would represent an overall increase of about 3.4 percent (Haines' 2013 forecasted population is estimated at about 2,609).

[25] Based on an estimated participation rate of 65 percent, meaning that 65 percent of the local population participates in the local labor force.

Effects on Housing and Real Estate in Haines

As a Day Boat ACF crew is already based in Haines, negligible effects on the Haines housing and real estate markets would be expected. A traffic-related population increase of 90 residents would result in additional demand for about 26 housing units (assuming 3.4 persons per household).

In addition to this increased demand, improved access to the Kensington Mine could also result in demand among mine workers for Haines area housing. This impact could range from a few to several dozen housing units, depending on how ferry schedules meshed with mine shift schedules, ferry fares, if company-provided transportation were available, and a variety of other factors.

Improved access to Haines, particularly for Juneau residents, would increase the demand for recreational property in the Haines area. Please refer to Section 3.1.1.6, General Effects on Housing and Real Estate.

Municipal Revenues and Expenditures in Haines

Sales tax revenues would increase at a rate proportional to the increase in spending in Haines. Total additional visitor spending in Haines of about $6.9 million annually would generate (assuming all of the spending is taxable) $380,000 in additional sales tax revenues in 2020 (based on a 5.5 percent tax rate).

Please refer to Section 3.1.1.7, General Effects on Municipal Revenues and Expenditures, for additional discussion.

3.1.4.4 Effects of the East Lynn Canal Highway on Skagway

Effects on Basic Industries in Skagway

The Visitor Industry

The East Lynn Canal Highway would affect tourism in Skagway, particularly the non-Alaskan independent visitor market. For independent visitors, an all-road link provides direct access between two very popular tourist destinations.

Cruise Visitor Market: A highway between Juneau and Skagway would not alter cruise lines' decisions to place ships in either community. Concern has been expressed about the possible loss of cruise ship traffic to Skagway if a highway to Juneau is constructed. The fear is that ships, in an effort to reduce fuel costs, would bus passengers to Skagway rather than actually make a port call. Concern has also been expressed about the aesthetic impact of a highway visible from the water.

Port of call decisions are based on a combination of factors including the availability of berthing space, appeal to passengers, and the overall capacity and profitability of tour offerings. Also considered are operational issues such as vessel speed, fuel consumption, docking fees, and safety. Not all cruise ships currently call in Skagway. According to Cruise Line Agencies of

Alaska, approximately 740,531 cruise passengers visited Skagway in 2012. Juneau hosted almost 6 percent more passengers (868,427).

Members of the North West CruiseShip Association (NWCA) discussed the proposed highway during the NWCA Operations and Technical Committee meeting as well as the Government Affairs and Community Relations Committee meeting. As a follow-up to their discussions, NWCA sent a letter to the Governor of Alaska stating that construction of a highway would have no effect on members' itineraries. The NWCA, now the North West & Canada Cruise Association (NWCCA), is comprised of Carnival Cruise Line, Celebrity Cruises, Crystal Cruises, Disney Cruise Line, Holland America, Norwegian Cruise Line, Princess Cruises, Oceania Cruises, Regent Seven Seas Cruises, Royal Caribbean Cruise Line, and Silversea Cruises. NWCCA estimates their member lines carry 97 percent of Alaska cruise passengers.

Further discussions with individual cruise lines revealed that Skagway is one of the most profitable ports in Alaska. Additionally, passenger satisfaction ratings are very high for the community. Eliminating Skagway from cruise itineraries would have negative financial impacts and would detract from passengers' overall experience.

A concern raised by Skagway residents is that Skagway could be experienced as a tour from Juneau, eliminating the need for ships to sail in Lynn Canal. Regional managers for Princess Tours and Gray Line, primary ground transportation providers for all large ships, are emphatic that this option is not feasible due to limitations regarding tour capacity, pricing, and timing. A round-trip bus excursion would require a minimum of 6 to 7 hours, leaving no time for passengers to experience the community or the popular rail excursion. While a flight and bus tour combination might reduce the overall transportation time, this option is not practical due to the high cost of the flight, capacity limitations, and potential for weather cancellations.

In summary, while fuel expense is an important consideration for cruise lines, it is greatly outweighed by other cost and logistical issues as well as passenger satisfaction. The cruise ships *must* be docked in Skagway to achieve their tour sales volume and revenue goals.

The other concern expressed is the aesthetic impact a highway visible from the water would have on the quality of the cruise experience up Lynn Canal. According to cruise operators, it is likely a visible highway would have little or no effect on current cruise itineraries. Cruise ships generally sail at night and visit a port during the day; therefore, the aesthetic impact of the highway is not an issue for the cruise industry.

Independent Visitor Market: Skagway's independent visitor market would be affected by the East Lynn Canal Highway. This analysis considers several important factors concerning Skagway's independent visitor traffic. The East Lynn Canal Highway would:

- Result in termination of ferry service between Skagway and points south of Haines
- Draw more visitors to northern Southeast Alaska than is now the case
- Increase access to Skagway for Juneau's independent visitors
- Increase access to Skagway for Haines' independent visitors

- Increase access to Skagway for Juneau residents

Currently, northbound ferry travelers with vehicles can take a mainline ferry or Day Boat ACF (daily during the summer and three times per week during the winter) ferry to either Haines or Skagway. After completion of the East Lynn Canal Highway, northbound ferry travelers would be required to disembark in Auke Bay, drive to Katzehin and board a ferry to Haines or Skagway. Similarly, Skagway would no longer be the boarding point for southbound mainline ferry travelers.

This change would impact visitor travel to Skagway, but the nature of that impact is difficult to predict. Visitors traveling northbound and southbound through north Lynn Canal would, as in the past, have a choice of passing through (and spending time in) Haines, Skagway, or both. Similarly, new visitors to Southeast (those that prior to construction of a highway to Juneau would have bypassed Southeast altogether) would also have the same choice (visit Haines, Skagway, or both), as would Juneau's independent visitors who would have better access to Haines and Skagway with a highway. Finally, the residents of Juneau would have better access to Skagway and destinations north, especially Whitehorse.

In general, Skagway is well-positioned to benefit economically from this improvement in access. Skagway traffic includes a total of 22,100 passengers (including residents and non-residents) who boarded an AMHS ferry in Skagway in 2011, while 20,500 passengers disembarked.

Approximately 6,400 passengers arrived in Skagway via air taxi (McCluskey, personal communication, 2013), and approximately 5,530 passengers departed Skagway via air taxi (RITA, 2013b).

The segment of Skagway's visitor industry that depends on independent travelers would change with the East Lynn Canal Highway construction. But overall, traffic to the community would increase. The economic impact of this change in traffic depends primarily on length of stay. Part of the time that visitors now spend in Skagway is associated with AMHS service frequency and delays. With a highway/ferry link to Juneau there would be greater tendency to pass directly through Skagway without spending time or money.

The key factor regarding length of stay now and after construction of the East Lynn Canal Highway would be the degree to which the community develops and promotes local assets and attractions to the independent market, including the Juneau market.

Effects on Support Industries in Skagway

Skagway's support sector businesses would be affected by the East Lynn Canal Highway. As is the case with Haines, a large amount of leakage already occurs from the Skagway economy as local residents take advantage of Juneau's greater selection and lower prices on goods and services. Improved access to Juneau would result in more leakage from the Skagway-area economy.

At the same time, the local support sector would benefit from an increase in Juneau resident and Whitehorse resident travel. In the 2003 household survey, Juneau residents expressed a strong interest in traveling more often to Skagway. Similarly, Whitehorse residents expressed a strong

interest in visiting Juneau. This increased travel (primarily recreation-related) to and through Skagway would create new business opportunities in the community. Currently, Juneau residents travel to Haines, Skagway, and Whitehorse on a fairly regular basis (NEI, 2013). They travel for a variety of reasons, including special events, athletic events, and festivals.

Retail Trade and Services

The impact of the East Lynn Canal Highway on Skagway's retail and service sector business would be determined by several factors, including:

- The increase in Skagway household spending in Juneau
- The effect of improved access on shipping costs to Skagway
- Changes in spending in Skagway by Juneau, Yukon, and other non- residents

Skagway Household Spending in Juneau: The amount of leakage from the Skagway economy to Juneau depends on the cost, convenience, and frequency of travel between the two communities. In 2005, members of Skagway households traveled to Juneau an average of 10 times a year. According to 1994 *Juneau Access Household Survey* results, on average each Skagway household spent approximately $3,100 (1994 dollars) in Juneau each year. There were approximately 300 households in Skagway at that time. This suggests that Skagway households spent an estimated $900,000 in Juneau on goods and services over the previous year. If the 1994 spending data are adjusted for inflation, annual Skagway household spending in Juneau would total about $1.4 million today. There were 386 households counted in Skagway in the 2010 5-year American Community Survey. In 2012 dollars, $3,100 equates to $4,800. Assuming Skagway household spending habits are the same, Skagway residents spent approximately $1.85 million in Juneau in 2012. This is a conservative estimate. Spending has likely increased (more than by inflation alone) along with the development of Juneau's retail sector, and some improvement in ferry service (such as initiation of day boat service).

According to the 1994 survey, with improved access to Juneau, Skagway households indicated that they would spend more money in Juneau than they did at the time of the survey. At that time, 72 percent of Skagway households indicated that their spending in Juneau would increase with improved access.

Improved access to Juneau may result in less Skagway household spending in Whitehorse. To the extent that this is true, improved access to Juneau may not result in increased leakage from the Skagway economy.

Effect of Improved Access on Shipping Costs to Skagway: Barge service to Skagway would not be expected to change with the East Lynn Canal Highway. Therefore, shipping costs for goods moved by this mode would probably not change. However, some freight does come into Skagway via ferry from Juneau. Shipment of that freight would be less expensive. This would translate into lower costs for Skagway consumers and/or increased profits for merchants.

Increase in Spending by Juneau Residents and other Non-Residents in Skagway: It is not known how much money Juneau residents typically spend while visiting Skagway. The amount of additional money spent in Skagway by non-residents would depend on the change in travel

frequency and the length of stay. As described below, the total traffic through Skagway with the East Lynn Canal Highway is expected to increase, mostly as a result of Juneau resident, recreation-related travel. The average length of stay could shorten, however. With the East Lynn Canal Highway access to Juneau, there would be more opportunity to pass directly through Skagway without spending time or money. After construction of the East Lynn Canal Highway, the key factor regarding length of stay, and overall independent traveler visitation to Skagway, would be the degree to which the community develops and promotes local assets and attractions.

In summary, the overall effect of the East Lynn Canal Highway on Skagway's retail and service sectors is likely to be substantial, and generally positive. Declining local spending by Skagway households is likely to be more than offset by increased spending by visitors from out-of-state and Juneau households visiting Skagway.

Local Government

Please refer to Section 3.1.1.4, General Effects on Government.

Summary of Visitor Spending and Related Impacts in Skagway

The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that the East Lynn Canal Highway would produce traffic to (and through) Skagway of approximately 380 annual ADT in 2020. This traffic includes existing (baseline) traffic as well as induced Skagway resident traffic. Traffic on Alternative 2B is predicted to remain relatively constant over the 30-year period between 2020 and 2050, changing from 380 to 375 annual ADT. Because traffic volumes decline by 5 annual ADT over the 30-year period, visitor spending and related impacts are anticipated to also decline slightly over that period. The impacts for 2020 are reported because they represent the greater impact of the two years.

Excluding baseline and induced local traffic, and based on visitor traffic calculations described above, new visitor traffic to Skagway with the East Lynn Canal Highway is estimated at 345 annual ADT in 2020.

Growth in Juneau resident travel is the key source of this increase. The *Juneau Access Household Survey* measured a strong interest among Juneau residents in more travel to Skagway (residents predicted traveling three times more frequently to Skagway with highway access).

Converting these vehicle traffic estimates to number of new visitors indicates that Skagway would see approximately 105,400 new visitors in 2020 (based on a vehicle occupancy rate of 2.3), with the East Lynn Canal Highway. This is a conservative estimate because it is based on the assumption that all traffic is round-trip traffic (2 annual ADT equals one visiting vehicle). In reality, some of the traffic would be one-way travelers passing through Skagway on their way north or south.

The amount of increased spending in Skagway, associated with this increased visitor traffic, is estimated for each alternative. Based on data from AVSP VI, for the purposes of the analysis for the JAI Project SEIS, it is assumed that visitor spending in Juneau would average $77 per visitor per day (McDowell Group, 2012a). The $77 estimate is probably a conservative estimate, but

represents a reasonable blend between visitors traveling to Skagway specifically and visitors only traveling through Skagway to other destinations.

Based on these per visitor spending averages, the East Lynn Canal Highway would result in total additional visitor spending in Skagway of about $8.1 million in 2020.

Some of this increase in visitor spending could be offset by increased Skagway resident spending in Juneau. This potential offset has not been factored into economic impact analysis because, first, the increase in leakage would be small in comparison to the increase in visitor spending and, second, a portion of the additional Skagway household spending would likely come at the expense of the Whitehorse economy rather than the Skagway economy.

The economic impact of additional visitor spending would include new employment and payroll in Skagway. Based on visitor industry-related payroll and spending in Southeast Alaska for the 2010–2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b). Based on this analysis, the increase in visitor spending in Skagway would generate about $3 million in new payroll and an estimated 85 additional jobs (annual average) in 2020. These employment and payroll estimates, which are summarized in Table 3-11, include total direct and indirect effects associated with the increased visitor spending in Skagway.

Table 3-11: Alternative 2B Projected Traffic and Resulting Visitor Economic Impacts in Skagway, 2020

Total Traffic under No Action Alternative (annual ADT)	35
Total Traffic under Alternative 2B (annual ADT)	380
Change in Traffic (annual ADT) (over No Action)	345
Change in Visitor Traffic (annual ADT) (over No Action)	250
Total New Visitors Annually (over No Action)	105,400
Total New Visitor Spending Annually (over No Action)	$8,110,000
New Local Payroll Annually (over No Action)	$3,030,000
New Local Employment Annually (over No Action)	85

Because of relatively flat population projections in Southeast Alaska (i.e., 0.004 percent annual decline from 2020 to 2050; ADOLWD, 2013a), traffic on the East Lynn Canal Highway is predicted to remain the same (within 1 percent) for the 30-year forecast period; therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Effects on Population in Skagway

The East Lynn Canal Highway could generate substantial population changes in Skagway. To the extent that increased traffic translates into additional spending in Skagway, economic and population growth would occur.

For the East Lynn Canal Highway, increased visitor spending (primarily new spending by Juneau and Whitehorse residents) would be expected to directly and indirectly create an estimated 85 new jobs in Skagway in 2020.

Assuming each new job in the economy results in an increase in population of about 1.5 people, 85 new jobs would be expected to result in a population increase of about 128 residents. This increase would likely be seasonal.

In the East Lynn Canal Highway, the Day Boat ACF that is homeported in Auke Bay in the No Action Alternative would be based in Skagway. Assuming that all the crew members and their families relocate from Juneau to Skagway, Skagway would experience an additional increase of 35 residents for a total of 163.

A population increase in Skagway of 163 residents would represent an overall increase of 16 percent over the year-round population (Skagway's 2013 forecasted year-round population is estimated at about 991) and approximately 6.5 percent over the summer population of approximately 2,500 (SDC, 2013).

Effects on Housing and Real Estate in Skagway

A population increase of 163 residents would result in additional demand for about 65 housing units (based on the 2010 Census Skagway average of 2.5 persons per household). This increase in housing demand may be in excess of available housing in the community. During the summer, this demand would be harder to meet, as less housing is available during the summer season. It is likely that the private sector would respond by construction additional housing if residential land is available.

Please refer to Section 3.1.1.6, General Effects of Improved Access on Housing and Real Estate.

Effects on Municipal Revenues and Expenditures

Skagway would experience an increase in sales and bed tax revenues associated with increased visitor spending. For example, the $8.1 million estimated initial increase in visitor spending would generate approximately $320,000 in additional sales tax revenues annually in 2020 (based on a 4 percent tax rate). Additional bed tax revenues would also be generated. Additional sales tax revenue is anticipated to be generated by the Day Boat ACF crew and their families.

Construction associated with modifications to the ferry terminal could have a minor, short-term effect on municipal tax revenues in Skagway due to an influx of construction workers and potentially their families spending money in the community. In addition, one Day Boat ACF would homeport in Skagway with its two crews of 10 to 12 people (total of 20 to 24 people) and, presumably, their families. Additional spending by AMHS employees and their families would increase sales tax revenues.

The East Lynn Canal Highway would also result in an increase in local government expenditures, for public safety, emergency response, and public utilities. These effects are described in Section 3.2, Public Utilities Impacts, and Section 3.3, Social Environment.

Please refer also to Section 3.1.1.7, General Effects of Improved Access on Municipal Revenues and Expenditures, for additional discussion.

3.1.4.5 Summary of Effects of the East Lynn Canal Highway

Table 3-12: Summary of Effects of Alternative 2B

Geographic Area	Industry or Sector	Summary of Effects
All Areas		
	Construction	Construction expenditures of approximately $518.0 million and employment of approximately 298 workers annually for a 6-year construction period.
	Transportation	Waterborne freight unlikely to be affected, though time-sensitive cargo shipments on the highway would increase. Demand for air taxi services would decline.
	Forest Products	Industry activity is dependent on factors other than road access such as market conditions, volume and quality of timber available.
	Mining	Highway access would not affect Kensington Mine operations. Highway construction would reduce the cost of transporting workers from Juneau to the mine. Road access would increase property tax revenues to the CBJ from the mine.
	Seafood	No substantial economic effects expected. May increase the amount of seafood transported by highway/ferry.
Juneau		
	Basic Industries	Visitor industry growth, possibly substantial, would occur as the number of independent visitors to Juneau increases. Cruise industry would be unaffected.
	Support Industries	Retail and service sectors would experience economic benefits from increased traffic.
	Population	Minor population growth associated with visitor industry and support sector growth.
	Housing and Real Estate	Increased housing requirements due to normal population increases.
	Municipal Revenues and Expenditures	Increased sales and real property tax revenues resulting from visitor sales and development of land along the highway.
Haines		
	Basic Industries	Increased visitor traffic expected, with associated benefits to visitor-affected businesses.
	Support Industries	Increased leakage could be substantial as residents purchase more goods and services from outside the community. Businesses competing with Juneau retailers and service providers could see a decline in sales.
	Population	Minor change, with potential increase over the long-term resulting from increased visitor industry activity and retirement/recreation-related growth.
	Housing and Real Estate	Increased demand for second homes or recreational cabins from Juneau residents.
	Municipal Revenues and Expenditures	Minor effects anticipated, including some increase in sales and bed tax revenues.

Geographic Area	Industry or Sector	Summary of Effects
Skagway		
	Basic Industries	Substantial increase in visitor travel, especially among Juneau, Whitehorse and Skagway residents. Cruise ship traffic would be unaffected.
	Support Industries	Substantial increase in visitor retail spending expected. Increased spending by Skagway residents for goods and services outside of the community. Increased spending of Juneau residents for recreation and lodging/food service in Skagway.
	Population	Substantial effects expected.
	Housing and Real Estate	Minor to substantial effects expected.
	Municipal Revenues and Expenditures	Increase in sales and bed tax revenues expected.

3.1.5 Alternative 3 – West Lynn Canal Highway

3.1.5.1 General Effects of the West Lynn Canal Highway

General Effects of the West Lynn Canal Highway on the Construction Industry

Construction of the West Lynn Canal Highway is estimated to cost approximately $437.2 million, including construction of two shuttle ferry terminals (but excluding the cost of two shuttle ferries). Assuming a 6-year construction period, annual construction expenditures would be about $72.9 million.

Assuming labor cost would equal approximately 45 percent of total construction costs, the West Lynn Canal Highway should generate about 252 jobs over the construction period. This assumes that annual labor costs would be about $32.8 million and that the average heavy construction worker earns approximately $86,000 per year, or approximately $130,200 including benefits and other labor-related overhead.

Construction employment figures are year-round estimates. Actual employment would be higher during the peak construction season and considerably lower during the off-season. The economic impact of the construction effort would depend on the number of local construction workers involved in the project.

A project of this size would attract contractors from outside Juneau, Haines, and Skagway as well as throughout the state and elsewhere. A high degree of non-local labor participation is possible. In 2011, there were 11 firms designated as Heavy Construction employers in the Juneau-Haines-Skagway area with average annual employment of 135 workers. The West Lynn Canal Highway Alternative would increase this industry's workforce by about 86.7 percent for the duration of the construction effort—a substantial effect. It is unlikely that the Juneau-Haines-Skagway region has enough qualified workers for this construction project and workers would be needed from other areas of the state or elsewhere to complete the project.

Juneau is likely to benefit the most from the West Lynn Canal Highway construction employment because it has the largest pool of potential workers and construction contractors. However, a large portion of the construction benefits could also flow to Haines.

Construction Phase-Related Socioeconomic Effects: Construction activity associated with development of the West Lynn Canal Highway could have temporary socioeconomic effects on the communities of Juneau and Haines. As described under the analysis of the East Lynn Canal Highway construction phase impacts, the magnitude of the socioeconomic effects associated with highway construction would depend on a number of factors, including:

- The residency of contractors and subcontractors awarded construction contracts.
- The availability of local skilled labor and operators at the time the project is under construction. This would depend in part on the number and size of other heavy construction projects underway in the region that might be competing in the same labor pool.
- Use of remote camps to support the construction effort. If housing and food services are provided for workers, the impact on communities would be far less than if non-resident workers are required to find their own housing.
- Construction shift scheduling. A 10-days-on, 4-days-off schedule, for example, is more likely to attract workers from nearby communities, or even throughout the state or elsewhere.
- The duration of the construction phase. A 6-year construction period is assumed in the JAI Project SEIS. A longer construction period is possible and would have lower peak labor requirements, but might draw more dependents to the region. A longer construction period might also generate greater indirect socioeconomic effects.

Construction phase impacts related to the West Lynn Canal Highway differ from the East Lynn Canal Highway in that Haines could potentially be substantially affected. While it is likely that the West Lynn Canal Highway construction effort would be largely camp-supported, Haines would likely play some role in staging and provision of goods and services.

Potential socioeconomic effects in Haines could include:

- Increased sales with fuel distributors.
- Increased sales at restaurants, bars, hotels, and other businesses providing goods and services to construction workers and their dependents.
- Increased Haines Borough sales tax revenues as a result of sales to construction companies and their employees.
- Increased demand for rental and other housing, even with a construction camp. Depending on the number of non-resident workers who choose to relocate families to Haines, demand for housing would increase. Most of the demand would be for rental housing, though a 6-year construction period may be long enough to induce some workers to purchase housing. Increased demand for rental housing could cause a rise in rental rates.

- Increased enrollment in local schools. To the extent that dependents of non-resident workers relocate to Haines, local school enrollment could increase.
- The temporary population increase associated with highway construction could also place additional demands on other public services, such as law enforcement, fire and emergency services, and health care services.

If a portion of the West Lynn Canal Highway construction project were staged out of Haines, including a camp in the Haines area, there would be local socioeconomic impacts. An employment multiplier of 1.40 was used to predict indirect employment effects in Juneau for the East Lynn Canal Highway. Haines' much smaller economy would certainly generate lower employment multiplier effects. Based on an employment multiplier of 1.40, maximum potential direct and indirect employment the West Lynn Canal Highway would be approximately 353 temporary jobs, distributed between Juneau and Haines. This additional local employment, though temporary, could have population-related effects in Haines.

Assuming that about three-quarters of the jobs would be filled by non-residents, and about half of those non-residents would bring dependents with them to Juneau or Haines, a population increase of approximately 391 residents could be expected, including those residing in camps.

In summary, a construction effort based in part in Haines would have substantial socioeconomic effects on the community. The local economy would expand for the duration of the construction phase, and demand for basic services would increase proportionately. Upon completion of the road, a portion (but not all) of the economic activity associated with highway construction would be replaced by economic activity generated by increased highway traffic to and through the community. The economic impact associated with this increased traffic is described in the following sections of this report. This analysis assumes that a construction camp would be located in the Haines area. Camps located elsewhere along the West Lynn Canal Highway corridor, in William Henry Bay, for example, would have only minor direct and indirect employment effects in Haines.

General Effects of the West Lynn Canal Highway on the Forest Products Industry

As with the East Lynn Canal Highway, the West Lynn Canal Highway would provide opportunity for timber harvests associated with construction of the highway, as well as improved access to timber stands that may at some point in the future be available for harvest.

Issues that could affect future timber harvest include:

- USFS, State of Alaska, Alaska Mental Health Trust Land, University of Alaska (UA), and other management of timber stands along the West Lynn Canal Highway corridor
- The volume and quality of timber along the West Lynn Canal Highway corridor
- Market conditions for Alaska's forest products in general
- Disposition of the marketable timber harvested as part of the highway construction effort

Land Management: The West Lynn Canal Highway corridor begins on the eastern side of Lynn Canal, with the widening of the last 2.9 miles of Glacier Highway and the extension of Glacier

Highway for 2.3 miles to Sawmill Creek. These 5.2 miles are located on the Tongass National Forest and are to be maintained in a "mostly natural setting," which precludes logging.

The entire West Lynn Canal Highway route from William Henry Bay to a point west of the northernmost point of Sullivan Island travels through the Tongass National Forest. This area includes a number of management designations, some of which allow for logging.

The highway corridor from William Henry Bay to a point slightly north of Sullivan Rock is to be maintained in a mostly natural setting and managed for semi-remote recreation. The area north of Sullivan Rock to the Tongass National Forest boundary is classified as "moderate development," which allows logging. The designation farther to the west of the highway corridor is for semi-remote recreation.

South of Glacier Point, the Tongass National Forest ends and the Haines State Forest begins. The West Lynn Canal route travels through approximately 10 miles of Haines State Forest, from south of Glacier Point to Pyramid Harbor.

The State's current Forest Management Plan (2002), which is in still effect in 2013, precludes logging. However, the UA owns property in the Glacier Point and Pyramid Harbor areas. Timber on this property has not been scheduled for harvest, but it could be harvested at any time if market conditions warranted.

Volume and Quality of Timber along West Lynn Canal: The USFS has not cruised the forest land along the western shore of Lynn Canal, and therefore the exact volumes and quality of the timber is not known. However, USFS personnel indicate that small portions of the area have been harvested in the past. Volumes in these areas are as low as 1,700 board feet per acre. Throughout the remainder of the West Lynn Canal route, the average ranges from 27,000 to 30,000 board feet per acre. In 2009, however, the Division of Forestry requested funding for an inventory update for the Haines State Forest. The 2011 update of the division's strategic plan reports that the inventory was funded in 2011, was in progress in 2012, and was expected to be complete in 2013, but is not yet available as of the date of this report. When this inventory is completed, the annual allowable harvest will be updated (ADNR, 2011).

On average, the timber volume on the Haines State Forest is approximately 20,000 board feet per acre. There are approximately 9,800 operable acres (in Management Units 5 and 6); however, the exact volume of timber contained in this acreage is not known. A rough estimate of the quality suggests that about 60 percent of this timber is hemlock and 40 percent is spruce.

Although improved access would decrease the cost of removing and transporting timber from State lands adjacent to the West Lynn Canal Highway, it is not anticipated that the presence of the highway would cause management policies and plans to be changed to allow commercial timber harvest. A limited amount of personal use timber harvest may occur if highway access were provided in this area.

Market Conditions for Alaska Forest Products: Market conditions for timber harvested from the Tongass National Forest as a result of the West Lynn Canal Highway are identical to those outlined under forest product impacts of the East Lynn Canal Highway.

Regarding Haines State Forest land, currently Units 5 and 6 are not open for harvest. In the event this changes, it is not known if the West Lynn Canal Highway would be the access point for the harvesting of this timber. Rather, it is believed that access would be gained from northern portions of the forest. Therefore, the economic benefit of the West Lynn Canal Highway on the forest product industry would most likely be limited to the highway construction phase of the project.

Resource development on other land (private, UA, and Mental Health Trust) will most likely be at the discretion of the deed holders. If a decision is made to harvest this timber, the West Lynn Canal Highway may provide some minor transportation benefits. However, it is not believed to be a vital component of the timber harvesting decision process.

Description of the Timber Harvested During Construction: In the construction phase of the project, a potentially large volume of timber would be harvested along the 26-mile-long, 100-foot-wide highway corridor through the Tongass National Forest on the western side of Lynn Canal, and an widening of 2.9 miles of existing roadway (at 100-foot width) along the eastern side of the Canal. In addition, the West Lynn Canal Highway corridor would traverse approximately 15 miles of the Haines State Forest Land, from the northern Lynn Canal boundary of the Tongass National Forest up to Pyramid Harbor.

There are no data indicating the volume of timber along the portion of the highway that would cross the Tongass National Forest. The estimated area that would require clearing for construction comprises roughly 365 acres of land (including National Forest land, non-National Forest land, and acreage on the eastern side of Lynn Canal).

If it is assumed that the average volume of timber is roughly 27,000 board feet per acre along the highway corridor on the west side of Lynn Canal, the timber harvest related to construction could be as high as 9 million board feet.

The precise quality of timber in this section of the Tongass National Forest is not known; however, it is some mix of spruce and hemlock, with a small concentration of cottonwood. Based upon the value estimates outlined in the forest product impacts of the East Lynn Canal Highway, the value of this timber would range between $18,000 and $180,000.

As mentioned in the impacts on forest products of the East Lynn Canal Highway corridor, the cost and benefit impacts of timber harvested for highway construction along the highway corridor would be determined by whether the land becomes State-owned or if the State simply acquires right-of-way.

It is estimated that the 15 miles of highway corridor through the Haines State Forest would comprise approximately 120 acres. Again, exact volumes are not available; however, if it is

assumed that the volume in the areas is approximately 20,000 board feet per acre, a rough estimate of the harvest from construction would be 2.4 million board feet of timber.

Timber in this area is a mix of spruce, hemlock and cottonwood. Based upon 2006 USFS pricing, the value of this timber would range from approximately $4,800 to $48,000. Economic benefits of timber harvested on State-owned land, less the cost of harvest operations, would be retained by the State.

General Effects of the West Lynn Canal Highway on the Transportation Industry

Waterborne Freight

A discussion of the effect of improved access on waterborne freight movement in Lynn Canal is provided in Section 3.1.1.3, General Effects of Improved Access on the Transportation Industry, and in Section 3.1.4.1, General Effects of the East Lynn Canal Highway.

The West Lynn Canal Highway would have minor effects on waterborne freight movement in Lynn Canal. Barge service to Juneau, Haines, and Skagway would be unaffected. The cost associated with one or two ferry links (two if the freight is destined for Skagway) would constrain the use of truck rather than barge. The handling and ferry costs associated with barging freight to Juneau, then trucking to Haines or Skagway, would prevent any transshipment in Juneau of freight moving from Seattle to Haines or Skagway.

Because the West Lynn Canal Highway would provide for less expensive shipment of goods from Juneau to Haines than the No Action Alternative (though perhaps not Skagway, because two ferry links are involved), freight costs would likely be lower. Lower freight costs between Juneau and Haines would result in savings to retailers, consumers, or both.

In summary, the West Lynn Canal Highway would not result in a change in barge service to Haines. Freight that is now shipped to Haines on the ferry, however, could be truck-delivered to Haines via highway to Katzehin, ferry to William Henry Bay, and then highway to Haines, most likely at a lower cost than is now possible with trucks on ferries alone.

Air Transport

See General Effects of Improved Access on the Transportation Industry, Section 3.1.1.3, for a detailed discussion of the effects of improved access on Lynn Canal air taxi operators.

The West Lynn Canal Highway would result in reduced demand for air taxi services in Lynn Canal. The West Lynn Canal Highway would generate traffic of approximately 655 annual ADT in 2020 and 650 in 2050. This is more than seven times the current Lynn Canal surface traffic volume, which would constitute a substantial effect. Most of the increase is induced traffic; however, some is diverted air traffic. The demand for air taxi service in Lynn Canal could be reduced by approximately 30 percent to 40 percent, though for any individual operator the impact might be higher or lower, depending on the particular markets served.

Private Ferry Operations

See General Effects of Improved Access on the Transportation Industry, Section 3.1.1.3.

The West Lynn Canal Highway would not substantially affect private ferry operations linking Haines and Skagway or Haines, Skagway, and Juneau. Private passenger-only service between Haines and Skagway includes competitively priced, more frequent, and more convenient transportation than would the Haines-Skagway shuttle ferry (a new conventional monohull ferry) that is part of the West Lynn Canal Highway. Day cruise, passenger-only service between north Lynn Canal and Juneau could be affected by the West Lynn Canal Highway. However, the market for small cruise vessel-based wildlife viewing and sightseeing would not be expected to decrease with a highway linking Haines and Juneau.

General Effects of the West Lynn Canal Highway on the Mining Industry

The West Lynn Canal Highway is expected to result in minor impacts to mine development in the area. The highway would improve access to an area with known mineral potential along western Lynn Canal (including the area west of Sullivan Island, for example). Improved access would increase exploration in the area, although there are no exploration or development activities currently occurring in the area. Increased exploration increases the probability of discovery of a mineral deposit that is economically viable. Over the very long-term, this could translate into mine development, with associated employment, payroll, and tax benefits to the Haines Borough.

Improved access to Juneau would increase the opportunity for Haines residents to work at Juneau-area mines. Currently, Coeur Alaska transports employees from Juneau only. Haines and Skagway residents fly or ferry to Juneau to connect with company-provided transportation to Kensington Mine.

General Effects of the West Lynn Canal Highway on the Seafood Industry

Because of the two ferry links in the West Lynn Canal Highway, there would be negligible benefits in terms of increased opportunity for Juneau processors to ship fresh fish to Lower 48 markets. The cost of the two ferry links and the logistics associated with ferry service, would constrain time-sensitive trucking activity.

Commercial Fishing Impacts Common to Highway Construction Alternatives[26]

Processors currently freezing fish may decide to send fresh or other value-added product if overland truck routes to markets are available. The West Lynn Canal Highway, which includes a highway and two ferry links, would probably not influence harvesters or processors to alter their behavior, due to the cost and time delay associated with ferry service. Commercial fish harvest delivery would likely be altered as a result of access improvements. Fishermen currently delivering to other ports in Southeast Alaska may elect to deliver their product to Juneau if Juneau processors are able to pay higher prices because they have better access to the higher-value fresh fish markets.

[26] Note that the following analysis of commercial fishing impacts was intended as a supplement to Section 4.1.1.3 "General Effects of the Improved Access on the Transportation Industry," presented in the 2004 *Socioeconomic Effects Technical Report* (DOT&PF 2004). It has been updated to reflect changes since 2006.

Commercial fishermen could be affected by increased competition from sport fishers if fishing pressure increases as a result of improved access. Increases in sport fisheries harvests could result in lower harvest levels by commercial fisheries in order to maintain adequate escapement levels.

3.1.5.2 Effect of the West Lynn Canal Highway on Juneau

Effects on Basic Industry in Juneau

The visitor industry is Juneau's only basic industry likely to have direct impacts from the West Lynn Canal Highway.

Visitor Industry

A highway link between Juneau and Haines on the west side of Lynn Canal would be expected to impact segments of Juneau's visitor industry.

Cruise Visitor Market: As presented in the baseline analysis, Juneau's cruise market is expected to continue to grow. However, the West Lynn Canal Highway would not affect cruise traffic to Juneau.

Independent Visitor Market: The independent visitor market would be substantially affected by the West Lynn Canal Highway. Among independent visitors, those traveling by personal vehicle are the most likely to be affected by a highway link between Juneau and Haines. This section focuses on non-Alaskan personal vehicle visitors to Juneau.

Non-Alaskan personal vehicle visitor traffic to Juneau would be affected by the West Lynn Canal Highway in several ways, including:

- AMHS travelers traveling north through Southeast Alaska who would otherwise have remained on the ferry would be forced to disembark in Juneau and continue their travels north via highway.
- AMHS travelers traveling south through Southeast Alaska who would otherwise have boarded in Haines or Skagway and remained on the ferry at the Auke Bay Ferry Terminal, rather than disembark, would be required to drive to Juneau to board a ferry.
- Highway travelers who now choose not to visit Juneau (including Alcan Highway travelers who do not visit Southeast Alaska at all, and those who visit Haines and/or Skagway as a side trip) may elect to drive to Juneau because of the improved access.

Approximately 28,700 personal vehicle travelers visit Juneau each year (NEI, 2012). The number of visitors who travel to Alaska by ferry or personal vehicle has been declining slowly, a trend affecting Juneau visitation. In any case, Juneau captures approximately one-third of the ferry/highway market.

Upon completion of the West Lynn Canal Highway, the number of these visitors traveling to Juneau is expected to increase. With completion of the highway, Juneau would attain "end of the highway" status, becoming the mainline terminus for the AMHS, leading a number of visitors to

travel to Juneau that otherwise might not visit the community. Further, Juneau would be expected to capture a somewhat larger share of the Alcan Highway market.

Recreational Vehicle Visitors and Related Impacts: As a result of the West Lynn Canal Highway, the number of RVs traveling to Juneau would increase similar to the East Lynn Canal Highway. See Section 3.1.3.2, Effects of the Enhanced Service with Existing AMHS Assets Alternative on the CBJ, for a detailed discussion of RV-related effects in Juneau resulting from improved access.

Mining

Please see Section 3.1.5.1, General Effects of the West Lynn Canal Highway.

Seafood Industry

The West Lynn Canal Highway would generate about the same economic benefit to the seafood processing industry as would the East Lynn Canal Highway because neither has an uninterrupted road connection and would not measurably reduce the cost of shipping fresh seafood via truck to Lower 48 markets. Trucking fresh fish to Lower 48 markets from seafood processors in Alaska via the West Lynn Canal Highway would incur costs associated with either two ferry links if traveling through Skagway or one ferry link and the additional mileage associated with accessing the Alcan Highway via Haines. In addition to adding costs, ferry connections would reduce the flexibility processors need to ship product when it is ready to be transported. With respect to fresh fish, shipping by barge or ferry south of Prince Rupert or Bellingham would continue to be a preferred option (NEI, 2013).

Effects on Support Industries in Juneau

Similar to the East Lynn Canal Highway, the West Lynn Canal Highway would have overall positive economic effects on Juneau's support sector.

Retail Trade and Service

The West Lynn Canal Highway would be likely to affect the retail and service sector in several ways:

- Increased spending by non-Alaskan visitors (with improved access, more visitors would come to Juneau).
- Increased spending by the regional population, predominately residents of Haines but also Skagway, who would have improved access to Juneau's much larger retail and service sectors.
- Possibly some decrease in spending, as Juneau residents have more convenient access to Haines and Skagway, where they would spend more recreational dollars, rather than in Juneau.

Non-Alaskan Spending: Spending by non-Alaskans would increase in Juneau as a result of the West Lynn Canal Highway. The addition of about 55,200 new non-Alaskan visitors to Juneau’s visitor industry would generate $4.3 million dollars in additional spending—a substantial effect. (Visitor spending is also addressed in a following section.)

Regional Resident Spending: The effect of improved access to Juneau on Haines and Skagway resident spending in Juneau is described under Section 3.1.3.2. Among Haines residents, the West Lynn Canal Highway would result in more spending in Juneau than is now the case because of shorter travel times and therefore more frequent travel. For Haines residents, a ferry link would be used to reach Juneau with any alternative. For a trip to Juneau for Haines residents, the travel time under the West Lynn Canal Highway would be the same as that under the East Lynn Canal Highway.

With the West Lynn Canal Highway, Skagway residents would travel to Juneau less often than with the East Lynn Canal Highway. Skagway residents would incur the cost and travel delays associated with two ferry links, the Haines-Skagway shuttle and the William Henry Bay shuttle. As a result of this lower frequency of travel, Skagway residents would spend less money in Juneau. The West Lynn Canal Highway would result in greater spending in Juneau than the No Action Alternative, however. The West Lynn Canal Highway provides greater opportunity (than the No Action Alternative) for travel between Haines and Juneau (including round-trip travel within a single day).

Juneau Resident Spending in Haines and Skagway: Juneau's retail and service sectors could experience some minor decline, particularly in the area of recreation-related spending. The West Lynn Canal Highway would provide Juneau residents new recreation opportunities, leading to an increase in related spending outside of the area. Haines and Skagway would be the recipients of a portion of the redistribution of Juneau recreational dollars. Juneau spending in Haines and Skagway is discussed under the impacts of the West Lynn Canal Highway on Haines and Skagway, in Sections 3.1.5.3 and 3.1.5.4.

Results of the 2003 *Juneau Access Household Survey* indicate that the frequency of travel to Haines and Skagway would increase with the West Lynn Canal Highway. The 2006 FEIS noted that in 2006 Juneau households were taking an annual average of about two trips to Haines and one trip to Skagway each year. Juneau residents estimated that they would use the West Lynn Canal Highway 3.7 times per year to access Haines and three times per year to access Skagway. As Juneau household travel to northern Lynn Canal increases, a corresponding increase in spending would occur. This increase does not necessarily translate into less spending in Juneau. To the extent that additional Haines and Skagway trips replace other out-of-town trips, there would be no negative effect on Juneau. As new travel to Haines and Skagway replaces local recreational activity, there could be an impact on Juneau business sales, though probably a minor one.

Transportation

Please refer to Section 3.1.1.3, General Effects of Improved Access on the Transportation Industry.

Local Government

Please refer to Section 3.1.1.4, General Effects of Improved Access on Government.

Summary of Visitor Spending and Related Impacts in Juneau

Based on data in the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), the total traffic to and from Juneau associated with the West Lynn Canal Highway is estimated at 655 annual ADT in 2020. This traffic includes existing (baseline) traffic and, mostly, induced Juneau resident traffic. Traffic on Alternative 3 is predicted to remain relatively constant over the 30-year period between 2020 and 2050, changing from 655 to 650 annual ADT. Because traffic volumes decline by 5 annual ADT over the 30-year period, visitor spending and related impacts are anticipated to also decline slightly over that period. The impacts for 2020 are reported because they represent the greater impact of the two years.

Excluding baseline and induced local traffic, and based on visitor traffic calculations described above, new visitor traffic to Juneau with the West Lynn Canal Highway would be approximately 310 annual ADT in 2020.

Converting this vehicle traffic estimate to number of new visitors indicates that Juneau would see about 129,700 new visitors in 2020 with the West Lynn Canal Highway. This is a conservative estimate because it is based on the assumption that all traffic is round-trip (in other words, 2 annual ADT equals one additional visiting vehicle, carrying an average of 2.3 people).

As described above, it is assumed that visitor spending in Juneau would average $77 per visitor per day (McDowell Group, 2012a). Based on these per visitor per trip spending averages, the West Lynn Canal Highway would result in total additional visitor spending in Juneau of about $10 million in 2020.

The economic impact of this additional spending would include new employment and payroll in Juneau. Based on visitor industry-related payroll and spending in Southeast Alaska for the 2010–2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b). Based on this analysis, the increase in visitor spending in Juneau would generate approximately $3.7 million in new payroll and an estimated 105 additional jobs (annual average) in 2020. These employment and payroll estimates, which are summarized in Table 3-13, include total direct and indirect effects associated with the increased visitor spending in Juneau.

Table 3-13: Alternative 3 Projected Traffic and Resulting Visitor Economic Impacts in Juneau, 2020

Total Traffic under No Action Alternative (annual ADT)	90
Total Traffic under Alternative 3 (annual ADT)	655
Change in Traffic (annual ADT) (over No Action)	565
Change in Visitor Traffic (annual ADT) (over No Action)	310
Total New Visitors Annually (over No Action)	129,700
Total New Visitor Spending Annually (over No Action)	$10,000,000
New Local Payroll Annually (over No Action)	$3,730,000
New Local Employment Annually (over No Action)	105

Because of relatively flat population projections in Southeast Alaska (i.e., 0.004 percent annual decline from 2020 to 2050; ADOLWD, 2013a), traffic on the West Lynn Canal Highway is predicted to remain the same (within 1 percent) for the 30-year forecast period; therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Effects on Population in Juneau

Improved access through the West Lynn Canal Highway would have minor impacts on population trends in Juneau. For the West Lynn Canal Highway, increased visitor spending would be expected to directly and indirectly create an estimated 105 new jobs in Juneau.

Assuming each new job in the economy results in an increase in population of about 1.5 people, 105 new jobs would result in a population increase of about 158 residents.

A population increase in Juneau of 158 residents (above the 2013 forecasted population estimate of 32,165) would represent an overall increase of about 0.5 percent.

Effects on Housing and Real Estate in Juneau

A population increase of 158 individuals would create a demand for an additional 61 units of housing (assuming 2.6 persons per household). This demand is well within Juneau's existing vacant housing capacity. The West Lynn Canal Highway would result in an increase in private property values near the Sawmill Cove Ferry Terminal. The increase in traffic to the area, and the required wait time associated with shuttle ferry service, would create business development opportunities that may further increase property values in the area.

Goldbelt Corporation's property in the Echo Cove and Cascade Point areas would probably be most affected by the West Lynn Canal Highway. Goldbelt owns approximately 1,400 acres of land from Echo Cove to Cascade Point. The site is about 42 miles north of downtown Juneau at the end of the Juneau road system. Goldbelt has received permits from the USFS (1999) and the Army Corps of Engineers (2000) to build a gravel road extending from the current road end at Echo Cove to Cascade Point.

Coeur Alaska has developed dormitory housing at Kensington Mine and buses employees from Juneau to Yankee Cove where they board shuttle operated by Goldbelt for Slate Creek. Goldbelt signed a letter of intent to work with Coeur Alaska, owner of the Kensington Mine, to move the southern terminus to a proposed dock at Cascade Point on Goldbelt land at Echo Cove on the south side of Berners Bay. The proposed dock at Cascade Point has not yet been built, but the road running north out of Juneau has recently been extended to Cascade Point by DOT&PF. Moving the transit point to Cascade Point will enhance the safety of the crews and will make travel across Berners Bay more reliable. The development of marine facilities at Cascade Point would include a breakwater, pedestrian access dock, an aluminum gangway, and a removable float.

Long-term future plans for the Cascade Point site include possible development as a port for the Lynn Canal ferry providing service from Skagway and Haines to Juneau. According to the Echo Cove Master Plan, development on Goldbelt land in the area includes a lodge and restaurant,

convenience store, gas station, and commercial fishing support facilities (Goldbelt, 1996). This level of development (which would be contingent upon construction and utilization of a ferry terminal) would have substantial property tax benefits for the CBJ. Goldbelt's present focus, however, is on government contracting businesses and its tourism-based subsidiaries (NEI, 2013).

Please refer to Section 3.1.1, General Effects of Improved Access, for additional discussion of impacts of the West Lynn Canal Highway on Juneau's housing and real estate market.

Effects on Municipal Revenues and Expenditures in Juneau

The increase in real estate values described above would translate into increased property tax revenues for the CBJ. This increase, however, would be minor in comparison to overall CBJ property tax revenues. Sales tax revenues (plus hotel, liquor, and tobacco taxes) would increase at a rate proportional to the increase in spending in Juneau. Total new visitor spending of $10 million in Juneau would generate (assuming all of the spending is taxable) about $500,000 per year in additional sales tax revenues in 2020 based on a 5 percent tax rate.

Some increase in local government expenditures associated with public safety and emergency response could also be expected. These costs are addressed in the public services section of this report (3.3, Social Environment).

Please refer to Section 3.1.1.7, General Effects on Municipal Revenues and Expenditures, for additional discussion.

3.1.5.3 Effects of the West Lynn Canal Highway on Haines

Effects on Basic Industries in Haines

Visitor Industry

Cruise Visitor Market: The cruise ship visitor market to Haines would not be affected by the West Lynn Canal Highway. A highway link between Juneau and Haines would not affect cruise itineraries planned for the Alaska market, including Haines or Skagway port calls. Haines would continue to be a secondary port of call in the Alaska market. Primary ports of call, including Ketchikan, Juneau, and Skagway, have a well-developed selection of tours and attractions (which is critical for generating on-board sales commissions for the cruise lines), extensive and convenient retail opportunities, and multiple-ship infrastructure.

Forces that could drive Haines' development as a cruise destination would include:

- Further development of attractions and excursions in Haines
- Growth in the regional cruise market overall
- Development of port facilities elsewhere in the Inside Passage, including Point Sophia near Hoonah, and Prince Rupert, British Columbia
- Overcrowding at the most popular ports (Juneau, Skagway, etc.)

The West Lynn Canal Highway would not change any of these factors. One potential concern is the aesthetic impact of a highway. However, the West Lynn Canal Highway would not have high visual impacts from the water and, further, cruise lines typically cruise at night and offer a port stop during the day.

Changes in cruise traffic to Skagway would affect the number of cruise passengers buying Haines excursions. However, no changes in Skagway cruise traffic are expected to result from the West Lynn Canal Highway.

Independent Visitor Market: The independent visitor market would be affected by the West Lynn Canal Highway. Among independent visitors, those traveling by personal vehicle would be the most affected if the West Lynn Canal Highway were developed.

Currently, northbound ferry travelers with vehicles can take mainline ferry service to either Haines or Skagway. After completion of the West Lynn Canal Highway, these mainline ferry travelers would be required to travel through Haines, creating a substantial increase in traffic to the community.

Further, some personal-vehicle traffic flowing from the north, with Juneau and mainline ferry services as their destinations, may be diverted to Haines from Skagway. In this case, visitors may choose a more direct route to Juneau, by way of the Haines Highway and the West Lynn Canal Highway, as opposed to traveling the Klondike Highway, ferrying to Haines, and then traveling the West Lynn Canal Highway.

In any case, all traffic predicted for the West Lynn Canal Highway would flow through Haines, resulting in an increase in traffic to or through that community. Traffic on the West Lynn Canal Highway is predicted to initially total about 655 annual ADT.

Overall, the number of travelers passing through Haines would increase more than sevenfold—from 55 annual ADT with the No Action Alternative to 420 annual ADT with the West Lynn Canal Highway. This would include all ferry traffic that now embarks or disembarks in Skagway without visiting Haines (about 16,300 passengers embarking in Skagway in 2011, and about the same number disembarking). It also includes new "induced" travel to Haines and Skagway among Juneau residents that would be spurred by improved Lynn Canal access. Household survey (2003) results indicated that Juneau households would travel to Haines more frequently with the West Lynn Canal Highway than they do now.

The economic impact of this increase in traffic depends primarily on visitors' length of stay. Part of the time that visitors now spend in Haines is associated with AMHS service frequency and delays. Without the ferry terminal in Haines, there would be more opportunity to pass directly through Haines without spending time or money. (With increased ferry service frequency there is also the opportunity to stay for short periods and still make connections.) The key factor regarding length of stay would be the degree to which Haines develops and promotes local assets and attractions. The greater the effort that is made to develop Haines as a visitor destination (especially in Juneau), the more time and money visitors would spend in the community. Some of the visitor traffic would pass through Haines without stopping. Other visitors might spend a

short time in Haines and purchase gas, food, or souvenirs. Finally, others would spend one or more nights in Haines, and have a comparatively high impact on the local economy.

Visitor industry employment would increase in Haines with the West Lynn Canal Highway. Haines' visitor industry now directly accounts for approximately 210 jobs, including jobs created by the cruise ship industry (about one-third of the total) and jobs related to independent visitor travel (ADOLWD, 2012a).

Retirement and Lifestyle Sector

The West Lynn Canal Highway would enhance Haines' role as a retirement community. For retirees, access to health care services is a critical issue. The better access offered by a partial highway link along the west side of Lynn Canal to Juneau would provide more immediate access to the community's relatively well-developed health care sector. It is not possible to quantify this impact, but the long-term result could be more people choosing Haines as a place to have a year-round or seasonal retirement home.

Mining

Please see Section 3.1.5.1, General Effects of the West Lynn Canal Highway. The West Lynn Canal Highway would improve access to areas in the Chilkat Range with known mineral potential. Better access increases the likelihood of discovery of mineral deposits and, ultimately, commercial production.

In addition, the West Lynn Canal highway would improve access for Haines residents to work at the Kensington Mine.

Seafood Industry

Please see Section 3.1.1, General Effects of Improved Access, and Section 3.1.5.1, General Effects of the West Lynn Canal Highway. The West Lynn Canal Highway would not affect Haines' seafood industry.

Forest Products Industry

Please see Section 3.1.5.1, General Effects of the West Lynn Canal Highway.

Effects on Support Industries in Haines

Retail Trade and Services

There are a number of issues that would determine the impact of the West Lynn Canal Highway on retail and service sector business in Haines, including:

- The effect of improved access on shipping costs to Haines
- The increase in Haines household spending in Juneau
- Changes in spending in Haines by Juneau and other nonresidents

Effect of Improved Access on Shipping Costs to Haines: Barge service to Haines would not be expected to change with the West Lynn Canal Highway. Therefore, shipping costs for goods moved by this mode would probably not change. However, some freight does come into Haines

via ferry from Juneau. Shipment of that freight would be less expensive because ferry fares and fuel costs would total less than shipping freight the entire way. This would translate into lower costs for Haines consumers and/or or increased profits for merchants.

Increase in Haines Household Spending in Juneau: Improved access to Juneau's much larger service and retail sectors would draw more spending from Haines residents. This leakage from the Haines economy would occur as a result of lower prices available in Juneau. The impact of this leakage is analyzed below.

Increase in Spending by Non-residents in Haines: The economic impact of increased non-resident traffic to and through Haines is addressed in the analysis of visitor spending effects, below. Non-resident spending would be expected to increase substantially, as would visitor industry-related employment.

Transportation

Please refer to Section 3.1.1, General Effects of Improved Access.

Local Government

Please refer to Section 3.1.1, General Effects of Improved Access.

Summary of Visitor Spending and Related Impacts in Haines

The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that the West Lynn Canal Highway would produce traffic to (and through) Haines of approximately 420 annual ADT[27] in 2020. This traffic includes existing (baseline) traffic as well as induced Haines resident traffic. Traffic on Alternative 3 is predicted to remain relatively constant over the 30-year period between 2020 and 2050, changing from 420 to 415 annual ADT. Because traffic volumes decline by 5 annual ADT over the 30-year period, visitor spending and related impacts are anticipated to also decline slightly over that period. The impacts for 2020 are reported because they represent the greater impact of the two years.

Excluding baseline and induced local traffic, and based on visitor traffic calculations described above, new visitor traffic to Haines with the West Lynn Canal Highway would be about 195 annual ADT in 2020.

Growth in Juneau resident travel accounts for the majority of this traffic increase over the No Action Alternative. The *Juneau Access Household Survey* (McDowell Group, 2003) measured a high level of interest among Juneau residents for more travel to Haines.

The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that Haines would see approximately 81,400 new visitors in 2020 with the West Lynn Canal Highway. This is a conservative estimate because it is based on the assumption that all traffic is round-trip traffic. In fact, some of the traffic would be one-way travelers passing through Haines on their way north or south.

[27] These ADT numbers are traffic destined for Haines. Including Skagway bound traffic would increase these numbers to 1,060 and 1,055, respectively. Only the Haines-bound traffic is used for this analysis.

The amount of increased spending per year in Haines associated with this increased visitor traffic is estimated at approximately $6.3 million in 2020. This is based on average visitor spending in Haines of $77 per visitor per day.

In terms of economic impact, increased spending in Juneau by Haines residents would offset some of this new visitor spending in Haines. The 2006 FEIS indicated that approximately half of new spending that would occur in Juneau with the West Lynn Canal highway would be by Haines residents. This is believed to still be valid, so Haines residents would spend about $5 million in 2020 in Juneau. Based on this estimate, the net increase in spending in Haines would be approximately $1.3 million in 2020.

The economic impact of this additional spending would include new employment and payroll in Haines. Based on visitor industry-related payroll and spending in Southeast Alaska for the 2010–2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b). Based on this analysis, this increase in visitor spending in Haines would generate an estimated 15 additional jobs (annual average) and $480,000 in annual payroll in 2020. These employment and payroll estimates, which are summarized in Table 3-14, include total direct and indirect effects associated with increased visitor spending in Haines.

Table 3-14: Alternative 3 Projected Traffic and Resulting Visitor Economic Impacts in Haines, 2020

Total Traffic under No Action Alternative (annual ADT)	55
Total Traffic under Alternative 3 (annual ADT)	420
Change in Traffic (annual ADT) (over No Action)	365
Change in Visitor Traffic (annual ADT) (over No Action)	195
Total New Visitors Annually (over No Action)	81,400
Total New visitor Spending Annually (over No Action)	$6,270,000
Less New Haines Resident Annual Spending in Juneau	$4,990,000
Net Change in Annual Spending in Haines	$1,280,000
New Local Payroll Annually (over No Action)	$480,000
New Local Employment Annually (over No Action)	15

Because of relatively flat population projections in Southeast Alaska (i.e., 0.004 percent annual decline from 2020 to 2050; ADOLWD, 2013a), traffic on the West Lynn Canal Highway is predicted to remain the same (within 1 percent) for the 30-year forecast period; therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Effects on Population in Haines

Haines would see an increase in population with the West Lynn Canal Highway. The increase in traffic through the community would result in increased visitor spending in Haines, translating into increased employment in businesses that provide goods and services to visitors.

With 15 new jobs, a population increase of about 23 residents would be expected (assuming each new job results in an increase of about 1.5 people). A population increase in Haines of 23 residents would represent an overall increase of about 0.9 percent (the forecasted population estimate for Haines in 2013 is 2,609).

Effects on Housing and Real Estate in Haines

The demand for housing in Haines would increase along with population growth. Assuming about 3.4 residents per household (based on 2010 Census persons per household), population growth of about 23 residents would translate into demand for about seven additional units.

The West Lynn Canal Highway would be very likely to spur development of some type of UA-owned property. UA owns substantial acreage in the Glacier Point and Pyramid Harbor areas. UA will manage these lands to the maximum financial benefit of the university. This could include logging (which would be dependent on market conditions), subdivision development, lease for commercial development, or some combination of these options.

The Alaska Mental Health Trust also owns a small parcel in the Glacier Point area and would pursue similar profit-oriented development with improved access.

Effects on Municipal Revenues and Expenditures in Haines

An increase in traffic to and through Haines would result in increased business sales and, therefore, sales tax revenues to the Haines Borough. The expected increase in visitor spending of $6.3 million annually would generate about $340,000 in annual sales tax revenues in 2020 (assuming it is all taxed at the city rate of 5.5 percent). This spending would also generate additional bed tax revenues.

Construction of the highway and new ferry terminals could have a substantial, short-term effect on municipal revenues in Haines due to spending by construction workers and potentially their families.

In addition, an increase in housing demand would result in some increase in housing values, resulting in a potential increase in property tax revenues (assuming tax rates are held constant). The West Lynn Canal Highway would also result in an increase in private property values for real estate located along the highway, particularly in areas such as Glacier Point. Better access to that recreational property would enhance the marketability and value of that property. Please refer to Section 3.1.1, General Effects of Improved Access, for additional discussion.

Some increase in local government expenditures would also be expected, associated primarily with public safety and emergency response. These costs are addressed in the Public Services section of this report (3.3 Social Environment).

3.1.5.4 Effects of the West Lynn Canal Highway on Skagway

Effects on Basic Industry in Skagway

Visitor Industry

Cruise Visitor Market: As is the case with the East Lynn Canal Highway, cruise ship traffic to Skagway would not be affected by the West Lynn Canal Highway. A full discussion on the effects of highway development on the cruise visitor market is outlined under Section 3.1.4.4, Effects of the East Lynn Canal Highway on Skagway.

Independent Visitor Market: Skagway's independent visitor market would be affected by the West Lynn Canal Highway. This analysis considers several factors concerning Skagway independent visitor traffic. The West Lynn Canal Highway would:

- Result in termination of mainline ferry service between Skagway and points south of Haines
- Provide marginally better (than the No Action Alternative) access to Skagway for Juneau's independent visitors
- Increase access to Skagway for Haines' independent visitors
- Provide marginally better access to Skagway for Juneau residents

In 2013, northbound ferry travelers with vehicles could take mainline ferry or day boat (daily during the summer and three times per week during the winter) ferry to either Haines or Skagway. After completion of the West Lynn Canal Highway, northbound ferry travelers would disembark in Juneau, drive to Sawmill Cove and ferry to William Henry Bay, and then drive to Haines. From Haines, another shuttle ferry trip would be needed to reach Skagway. Similarly, Skagway would no longer be an AMHS boarding point for southbound mainline ferry passengers.

This change would affect visitor travel to Skagway, though no measurable change in the economic impact of independent visitor travel is expected. Visitors traveling northbound and southbound through north Lynn Canal would, as in the past, have a choice of passing through (and spending time in) Haines, Skagway, or both. The inconvenience and cost associated with another ferry link to reach Skagway would likely push some traffic through Haines that might otherwise pass through Skagway.

However, the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that the West Lynn Canal Highway would produce traffic to Skagway of approximately 235 annual ADT after the highway is built (in both 2020 and 2050). This is above current Skagway traffic to or from Lynn Canal. The increase would largely be the result of more frequent Juneau resident travel to Skagway.

The economic impact of this change in traffic depends primarily on length of stay. Part of the time that visitors now spend in Skagway is associated with AMHS service frequency and delays. With the ferry terminus in Juneau, there would be greater tendency to pass directly through Skagway without spending time or money. The key factor regarding length of stay now and after

construction of the West Lynn Canal Highway would be the degree to which the community develops and promotes local assets and attractions to the independent market, including Juneau residents. Because Skagway is a popular, well-developed, and well-known visitor destination, the average length of stay is not expected to decrease substantially.

In summary, the West Lynn Canal Highway would:

- Result in an overall, though slight, increase in traffic to and through Skagway
- Result in a small decline in non-Alaskan visitor-related economic impact
- Result in a small increase in Juneau resident travel (because the West Lynn Canal Highway does represent a small improvement in travel to Skagway, in terms of travel convenience and cost)
- Place Skagway in more direct competition with Haines for visitors' time and money

The net economic effect on Skagway is likely to be a minor change in that sector of the economy that depends on independent visitor travel.

Mining

Please see Section 3.1.5.1, General Effects of the West Lynn Canal Highway.

Seafood Industry

Please see Section 3.1.1, General Effects of Improved Access, and Section 3.1.5.1, General Effects of the West Lynn Canal Highway.

Forest Products Industry

Please see Section 3.1.5.1, General Effects of the West Lynn Canal Highway.

Effects on Support Sector Industries in Skagway

Transportation Industry

Please see General Effects of the West Lynn Canal Highway on the Transportation Industry in Section 3.1.5.1.

In general, the West Lynn Canal Highway would improve transportation to and from Skagway (meaning that the cost, in terms of time and out-of-pocket expenses, would be reduced) for personal vehicle traffic. Two ferry connections would be required for travel to Juneau, however, and the cost and inconvenience associated with these ferry links would constrain travel to and through Skagway, relative to the East Lynn Canal Highway.

The West Lynn Canal Highway would not affect how Skagway is supplied in terms of freight shipments. The cost or frequency of barge service would not change. Freight that now comes from Juneau on the ferry would be diverted to the West Lynn Canal Highway, although it is not clear that shipping cost between Juneau and Skagway would be reduced; that would depend on the fares charged for commercial vehicles on the ferries. It is unlikely that cargo shipped by barge would be moved to trucks, because it is relatively expensive to move vans off of a barge

and then onto a truck. Trucking costs from Juneau to Haines or Juneau to Skagway would be higher than moving goods by barge (NEI, 2013). With respect to fresh fish, shipping by barge or ferry south of Prince Rupert or Bellingham would likely continue to be a preferred option (NEI, 2013).

Summary of Visitor Spending and Related Impacts in Skagway

The 2014 Juneau Access *Traffic Forecast Report (*Appendix AA of the 2014 JAI Project Draft SEIS) indicates that the West Lynn Canal Highway would produce traffic to (and through) Skagway of approximately 235 annual ADT in 2020. This traffic includes existing (baseline) traffic as well as induced Skagway resident traffic. Traffic on Alternative 3 is predicted to remain constant over the 30-year period between 2020 and 2050, staying at 235 annual ADT. Because traffic volumes remain constant over the 30-year period, visitor spending and related impacts are anticipated to remain the same over that period.

Excluding baseline and induced local traffic, and based on visitor traffic calculations described above, new visitor traffic to Skagway with the West Lynn Canal Highway would be about 145 annual ADT in 2020.

The 2014 Juneau *Access Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that Juneau would see approximately 60,900 new visitors in 2020 (based on a vehicle occupancy rate of 2.3), with the West Lynn Canal Highway. This is a conservative estimate because it is based on the assumption that all traffic is round-trip traffic. In fact, some of the traffic would be one-way travelers passing through Haines on their way north or south.

The amount of increased spending in Skagway associated with this increased visitor traffic is estimated at approximately $4.7 million in 2020. This is based on average visitor spending in Skagway of $77 per visitor per day.

The economic impact of this additional spending would include new employment and payroll in Skagway. Based on visitor industry-related payroll and spending in Southeast Alaska for the 2010–2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b).Based on this analysis, this increase in visitor spending in Skagway would generate an estimated 50 additional jobs and additional payroll of $1.7[28] million in 2020. These employment and payroll estimates, which are summarized in Table 3-15, include total direct and indirect effects associated with the increased visitor spending in Skagway.

Because the West Lynn Canal Highway would have no effect on the cruise industry, and the impact on the independent visitor market is likely to be small, Skagway's support sector is expected to experience negligible economic impacts overall. Leakage from the Skagway economy as a result of spending in Juneau by local residents is not expected to increase. The West Lynn Canal Highway would not change how Skagway is supplied by barge; therefore, no measurable change in shipping costs to the community is expected. Juneau resident spending in Skagway would increase slightly, along with an increase in travel frequency.

[28] This number was rounded down based on the original number.

Table 3-15: Alternative 3 Projected Traffic and Resulting Visitor Economic Impacts in Skagway, 2020

Total Traffic under No Action Alternative (annual ADT)	35
Total Traffic under Alternative 3 (annual ADT)	235
Change in Traffic (annual ADT) (over No Action)	200
Change in Visitor Traffic (annual ADT) (over No Action)	145
Total New Visitors Annually (over No Action)	60,900
Total New Visitor Spending Annually (over No Action)	$4,690,000
New Local Payroll Annually (over No Action)	$1,750,000
New Local Employment Annually (over No Action)	50

Because of relatively flat population projections in Southeast Alaska (i.e., 0.004 percent annual decline from 2020 to 2050; ADOLWD, 2013a), traffic on the West Lynn Canal Highway is predicted to remain the same for the 30-year forecast period; therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Effects on Population in Skagway

The West Lynn Canal Highway is expected to have negligible to minor impacts on the population and demographics of Skagway. With 50 new jobs, a population increase of about 75 residents would be expected (assuming each new job results in an increase of about 1.5 people). A population increase in Skagway of 75 residents would represent an overall increase of about 7.6 percent (the forecasted population estimate for Skagway in 2013 is 991).

Please refer to Section 3.1.1, General Effects of Improved Access, for additional discussion.

Effects on Housing and Real Estate in Skagway

The West Lynn Canal Highway is expected to have a negligible to minor impact on housing and real estate in Skagway. Assuming about 2.5 residents per household (based on 2010 Census persons per household), population growth of about 75 residents would translate into demand for about 30 additional units. This increase in housing demand may be in excess of available housing in the community. During the summer, this demand would be harder to meet, as less housing is available during the summer season. It is likely that the private sector would respond by constructing additional housing if residential land is available.

Please refer to Section 3.1.1, General Effects of Improved Access, for additional discussion.

Effects on Municipal Revenues and Expenditures in Skagway

The West Lynn Canal Highway is expected to have negligible to minor impacts on municipal revenues and expenditures in Skagway. The expected increase in visitor spending of $4.7 million

annually would generate about $190,000 in annual sales tax revenues in 2020 (assuming a 4 percent tax rate). This spending would also generate additional bed tax revenues.

Please refer to Section 3.1.1, General Effects of Improved Access, for additional discussion.

3.1.5.5 Summary of the West Lynn Canal Highway Effects

Table 3-16: Summary of Effects of Alternative 3

Geographic Area	Industry	Summary of Effects
All Areas		
	Construction	Construction expenditures of $437.2 million and employment of 252 workers annually over a 6-year period. Substantial workforce increase would affect Haines.
	Transportation	Waterborne freight unlikely to be affected. Air taxi operations could decrease—a potentially substantial negative impact. Overall increase in travel between communities.
	Forest Products	Improved access to timber stands, though harvests dependent on factors other than road access, such as market conditions and quality of timber available.
	Mining	Increased exploration access to areas with mineral potential.
	Seafood	Negligible effects.
Juneau		
	Basic Industries	Visitor industry substantially affected as independent (including RV) visitor traffic increases. Cruise traffic unaffected.
	Support Industries	Retail and service sectors experience minor economic benefits. New visitor spending could be substantial.
	Population	Negligible to minor population growth expected.
	Housing and Real Estate	Negligible increase in housing demand due to population growth.
	Municipal Revenues and Expenditures	Increased sales taxes from visitor spending in Juneau. Substantially increased property taxes from land development along the access corridor.
Haines		
	Basic Industries	Substantially increased visitor traffic from the Juneau and visitor markets would result in growth in the visitor industry. Potential for growth in the "retirement industry." Substantial visitor industry effects expected (visitor spending and visitor related employment).
	Support Industries	Increased leakage as residents purchase goods and services from outside the community, offset by increased visitor spending.
	Population	Increased population due to visitor industry growth.

Geographic Area	Industry	Summary of Effects
	Housing and Real Estate	Increased demand for housing due to seasonal and year-round population growth.
	Municipal Revenues and Expenditures	Increased sales tax associated with increased visitor spending and increased property tax revenues associated with development along the highway corridor.
Skagway		
	Basic Industries	Some increase in independent visitor travel expected. Cruise industry unaffected.
	Support Industries	Negligible change in retail leakage expected. Increase in spending by Juneau residents visiting Skagway.
	Population	Negligible to minor effects.
	Housing and Real Estate	Negligible to minor effects.
	Municipal Revenues and Expenditures	Negligible to minor effects.

3.1.6 Alternatives 4A through 4D - Marine Alternatives

3.1.6.1 General Effects of the Marine Alternatives

The marine alternatives include the following (in addition to continued mainline service to Haines and Skagway, and shuttle ferry service between Haines and Skagway):

- Alternative 4A – FVF service from Auke Bay
- Alternative 4B – FVF service from Berners Bay
- Alternative 4C – Conventional monohull service from Auke Bay
- Alternative 4D – Conventional monohull service from Berners Bay

According the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), the marine alternatives would generate traffic to and from Juneau ranging from approximately 100 annual ADT to 265 annual ADT in the first year of operations (2020) and in the forecast year (2050). Alternative 4B would generate the highest volume of traffic and 4C the lowest volume of traffic. Traffic volumes vary among the marine alternatives because each has unique user or traveler costs (see 2014 Juneau Access *Traffic Forecast Report,* Appendix AA of the 2014 JAI Project Draft SEIS) for a detailed discussion of the effects of user costs on traffic).

Marine alternatives 4B and 4D include widening the newly constructed portion of Glacier Highway from 26 feet to 30 feet. Sawmill Cove ferry service would be summer-service only. During the winter, all ferry service would be from Auke Bay.

In terms of socioeconomic effects, however, differences between these alternatives are slight; therefore, this analysis considers the socioeconomic effects of the marine alternatives together. Where meaningful differences in socioeconomic effects exist, they are noted.

General Effects of the Marine Alternatives on the Construction Industry

Construction expenditures associated with the marine alternatives include terminal construction and highway widening to Sawmill Cove. Vessels may be constructed in Alaska or out of state.

Assuming labor cost for the highway widening and terminal facilities would equal approximately 45 percent of total construction cost, the marine alternatives should generate between 65 and 121 jobs over the construction period (which is assumed to be about 2 years). This is based on average annual construction industry earnings of approximately $86,000 per year, or approximately $130,200 including benefits and other labor-related overhead. In 2011, there were 11 firms designated as Heavy Construction employers in the Juneau-Haines-Skagway area with average annual employment of 135 workers. The marine alternatives estimated employment would be less than the average annual employment. Estimated costs and employment for the marine alternatives are included in Table 3-17.

Table 3-17: Marine Alternatives – Construction Phase Employment Impacts

Marine Alternative	Terminal and Highway Widening Cost	Estimated Employment
Alt. 4A	$37.5 million	65
Alt. 4B	$62.73 million	108
Alt. 4C	$45.1 million	78
Alt. 4D	$70.3 million	121

Construction Phase-Related Socioeconomic Effects: Construction activity associated with development of any of the marine alternatives would have negligible to minor, temporary socioeconomic effects on the communities of Juneau, Haines and Skagway.

General Effects of the Marine Alternatives on the Mining Industry

The marine alternatives are not expected to directly effect mine development in the area.

The marine alternatives would provide improved access to Juneau, increasing the opportunity for Haines and Skagway residents to work at Juneau area mines. Currently, Coeur Alaska contracts with Goldbelt to transport Kensington Mine employees to the mine via bus and ferry shuttle from Juneau only. Haines and Skagway residents need to fly or ferry to Juneau to connect with company-provided transportation to the mine.

General Effects of the Marine Alternatives on the Seafood Industry

The marine alternatives are less likely to result in increased competition for commercial fishing fleets from subsistence and sport fish users because the marine alternatives would not open areas to new access modes.

The marine alternatives would not enhance seafood processors' access to fresh fish markets.

3.1.6.2 Effects of the Marine Alternatives on Juneau

Effects on Basic Industry in Juneau

The visitor industry is Juneau's only basic industry likely to be impacted by the marine alternatives. Those impacts would be minor.

Visitor Industry

The marine alternatives would have minor positive impacts on Juneau's visitor industry. To the extent that the marine alternatives improve ferry service in Lynn Canal, in terms of frequency, convenience, and cost, there would be an increase in the number of independent visitors traveling to Juneau.

Cruise Visitor Market: The marine alternatives would not affect cruise traffic to Juneau.

Independent Visitor Market: All of the marine alternatives include continuing mainline ferry service to Haines and Skagway. Because of this, the effects of the marine alternatives on independent visitor traffic to Juneau are expected to be minor. (The East Lynn Canal Highway and the West Lynn Canal Highway include discontinuing mainline ferry service in Lynn Canal, meaning that all through passengers must disembark in Juneau.) The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that traffic on the four marine alternatives includes a range, from Alternative 4C that is 11 percent more than the No Action Alternative, to Alternative 4B that is about 194 percent more than the No Action Alternative. The volume of new visitor traffic to Juneau would range from 5 annual ADT to 90 annual ADT additional visitor traffic in 2020. A traffic increase of 90 annual ADT translates into approximately 53,100 additional visitors in 2020 (based on vehicle occupancy of 3.2 persons per vehicle).

Mining

Please see Section 3.1.6.1, General Effects of the Marine Alternatives.

Seafood Industry

Please see Section 3.1.6.1, General Effects of the Marine Alternatives.

Forest Products Industry

The marine alternatives would have negligible effects on the forest products industry. There would be a small volume of timber harvested in association with extension of the highway to Sawmill Cove.

Effects on Support Industries in Juneau

As outlined under the highway alternatives, the marine alternatives would have overall positive, but minor economic effects on Juneau's support sector. These beneficial impacts would be received primarily by the local retail trade and service sector industries that provide goods and services to visitors. These benefits would stem from minor increases in Haines and Skagway resident spending in Juneau and minor increases in non-resident visitor spending in Juneau—both offset partially by increased spending by Juneau residents in Haines and Skagway.

Transportation

Please refer to Section 3.1.1, General Effects of Improved Access.

Local Government

Please refer to Section 3.1.1, General Effects of Improved Access.

Summary of Visitor Spending and Related Impacts in Juneau

Based on data in the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), the total traffic to and from Juneau associated with the marine alternatives varies between 100 annual ADT (Alternative 4C) and 265 annual ADT (Alternative 4B) in 2020. Alternative 4B would generate the highest level of overall traffic (265 annual ADT in 2020) and the highest level of new visitor traffic (90 annual ADT in 2020). This traffic includes existing (baseline) traffic and, mostly, induced Juneau resident traffic. Traffic on the marine alternatives is predicted to remain constant over the 30-year period between 2020 and 2050. Because traffic volumes on the marine alternatives stay the same over the 30-year period, visitor spending and related impacts are anticipated to stay the same. The impacts for 2020 are reported and the impacts for 2050 would be the same.

Excluding baseline and induced local traffic, and based on visitor traffic calculations described above, new visitor traffic to Juneau with the marine alternatives would vary between 5 annual ADT (Alternative 4C) and 90 annual ADT (Alternative 4B) in 2020.

Converting this vehicle traffic estimate to number of new visitors indicates that Juneau would see between 2,300 new visitors (Alternative 4C) and approximately 53,100 new visitors (Alternative 4B) in 2020 with the marine alternatives. These are conservative estimates because they are based on the assumption that all traffic is round-trip (in other words, 2 annual ADT equals one additional visiting vehicle, carrying an average of 3.2 people).

As described above, it is assumed that highway/ferry visitor spending in Juneau would average $77 per visitor per day (McDowell Group, 2012a). Based on these per-visitor-per-trip spending averages, Alternative 4B would result in total additional visitor spending per year of approximately $4.1 million in Juneau in 2020.

The economic impact of this additional spending would include new employment and payroll in Juneau. Based on visitor industry-related payroll and spending in Southeast Alaska for the 2010–2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b). Based on this analysis, this increase in visitor spending in Juneau would generate approximately $1.5 million in new payroll and an estimated 40 additional jobs (annual average) in 2020 under Alternative 4B. Table 3-18 summarizes visitor spending in Juneau associated with each marine alternative, along with the estimated employment and payroll impact of that spending.

Marine Alternatives 4A, 4C, and 4D result in lower traffic and lower economic impacts. Alternative 4C would generate only 10 annual ADT above the No Action Alternative and therefore no measurable or economic benefits above the No Action Alternative in 2020.

Table 3-18: Alternatives 4A through 4D Projected Traffic and Resulting Visitor Economic Impacts in Juneau, 2020

	Alternative			
	4A	4B	4C	4D
Total Traffic under No Action Alternative (annual ADT)	90	90	90	90
Total Traffic under Alternatives 4A and 4C (annual ADT)	165	265	100	245
Change in Traffic (annual ADT) (over No Action)	75	175	10	155
Change in Visitor Traffic (annual ADT) (over No Action)	40	90	5	80
Total New Visitors Annually (over No Action)	22,200	53,100	2,300	46,700
Total New Visitor spending Annually (over No Action)	$1,710,000	$4,090,000	$180,000	$3,600,000
New Local Payroll Annually (over No Action)	$640,000	$1,530,000	$70,000	$1,340,000
New Local Employment Annually (over No Action)	20	40	-	35

Because of relatively flat population projections in Southeast Alaska (i.e., 0.004 percent annual decline from 2020 to 2050; ADOLWD, 2013a), traffic on the marine alternatives is predicted to remain the same for the 30-year forecast period; therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Effects on Population in Juneau

The marine alternatives are expected to have negligible to minor impacts on Juneau's current and future population. The marine alternatives would not provide any impetus for growth in local basic industries other than the visitor industry, which would be minor. Because population is primarily a function of economic growth, the marine alternatives would not be expected to yield any measurable change in Juneau's population. Alternative 4B, which generates the highest level of traffic, would result in an estimated 40 additional jobs in Juneau or approximately 60 new residents (assuming each new job would result in an increase of 1.5 people). This increase would have a negligible impact on population (0.2 percent increase over the 2013 forecasted population of 32,165).

Effects on Housing and Real Estate in Juneau

The marine alternatives are not expected to result in any measurable change in Juneau's housing and real estate markets. Alternative 4B, which generates the highest level of traffic, would result in a population increase of 60 individuals, creating a demand for an additional 23 housing units (assuming 2010 Census estimate of 2.6 persons per household). This demand is well within Juneau’s existing vacant housing capacity.

The ferry for Alternatives 4A and 4C would homeport in Auke Bay year round. The ferry for Alternatives 4B and 4D would homeport in Sawmill Cove in the summer and in Auke Bay in the winter. Crew for these vessels would require housing, creating a small additional demand for housing in Juneau.

Effects on Municipal Revenues and Expenditures in Juneau

The marine alternatives would have negligible to minor effects on Juneau's municipal revenues and expenditures. New visitor spending associated with Alternative 4B (estimated to be $4.1 million per year in 2020) would generate about $200,000 in CBJ sales tax revenues (based on a 5 percent tax rate), the highest level among the marine alternatives. Extension of the highway to Sawmill Cove and associated traffic would lead to an increase in property values in the area if Goldbelt's properties were developed. Additional property tax revenue would be generated.

3.1.6.3 Effects of the Marine Alternatives on Haines

Effects on Basic Industry in Haines

The marine alternatives would be expected to have negligible to minor impacts on basic industries in the Haines area, compared to the No Action Alternative. Only the visitor industry could expect some minor impact from the marine alternatives.

Visitor Industry

Cruise Visitor Market: As is the case with the East Lynn Canal Highway and the West Lynn Canal Highway, the cruise ship visitor market to Haines would not be affected by the marine alternatives.

Independent Visitor Market: The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) indicates that traffic to Haines on all marine alternatives would range from 55 annual ADT (Alternative 4C) to 145 annual ADT (Alternative 4B) in 2020 and 2050. Total new visitor traffic would range from zero new traffic (Alternative 4C) to 50 annual ADT (Alternative 4B) in 2020. This 50 annual ADT would equate to approximately 28,000 new visitors to Haines in 2020.

Mining

Please see 3.1.6.1, General Effects of the Marine Alternatives.

Seafood Industry

Please see 3.1.6.1, General Effects of the Marine Alternatives.

Forest Products Industry

The economic effects on Haines' forest products industry would be negligible under the marine alternatives.

Effects on the Support Sector in Haines

The effects of the marine alternatives on Haines' support sector would be minor. Improved access between Juneau and Haines would increase marginally the level of leakage from the

community's support sector. The effect of the marine alternatives on shipping costs is expected to be negligible; therefore, no reduction in business profitability or the cost of living in Haines is expected. Spending by Juneau residents and other non-residents in Haines would increase, though again, that increase would be minor in the local economy overall.

Transportation

All marine alternatives provide measurable improvement over the No Action Alternative in marine passenger and vehicle transportation services in Lynn Canal, but as indicated by traffic forecasts, Alternative 4C has the same ADT as the No Action Alternative for Haines. The marine alternatives do not, however, provide improved freight transportation infrastructure in the region. Also please refer to Section 3.1.1, General Effects of Improved Access.

Local Government

The marine alternatives would have negligible to minor effects on local government in Haines. Also, please refer to Section 3.1.1, General Effects of Improved Access, for additional discussion.

Summary of Visitor Spending and Related Impacts in Haines

Based on data in the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), the total traffic to and from Haines associated with the marine alternatives varies between 55 annual ADT (Alternative 4C) and 145 annual ADT (Alternative 4B) in 2020. Alternative 4B would generate the highest level of overall traffic to Haines (145 annual ADT) and the highest level of new visitor traffic (50 annual ADT) in 2020. This traffic includes existing (baseline) traffic and, mostly, induced Juneau resident traffic. Traffic on the marine alternatives is predicted to remain constant over the 30-year period between 2020 and 2050. Because traffic volumes on the marine alternatives stay the same over the 30-year period, visitor spending and related impacts are anticipated remain the same. The impacts for 2020 are reported and the impacts for 2050 would be the same.

Excluding baseline and induced local traffic, and based on visitor traffic calculations described above, new visitor traffic to Haines with the marine alternatives would vary between zero annual ADT (Alternative 4C) and 50 annual ADT (Alternative 4B) in 2020.

Converting this vehicle traffic estimate to number of new visitors indicates that Haines would see between zero new visitors (Alternative 4C) and approximately 28,000 new visitors (Alternative 4B) in 2020 with the marine alternatives. These are conservative estimates because they are based on the assumption that all traffic is round-trip (in other words, 2 annual ADT equals one additional visiting vehicle, carrying an average of 3.2 people).

As described above, it is assumed that visitor spending in Juneau would average $77 per visitor per day (McDowell Group, 2012a). Based on these per-visitor-per-trip spending averages, Alternative 4B would result in total additional visitor spending of approximately $2.2 million per year in Haines in 2020.

The economic impact of this additional spending would include new employment and payroll in Haines. Based on visitor industry-related payroll and spending in Southeast Alaska for the 2010–

2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b). Based on this analysis, this increase in visitor spending in Haines would generate approximately $2.2 million in payroll and an estimated 20 additional jobs (annual average) in 2020 under Alternative 4B. Some portion of this increase in spending would be offset by increased Haines resident spending in Juneau. Table 3-19 summarizes visitor spending in Haines associated with each of the marine alternatives, along with the estimated employment and payroll impact of that spending.

Alternatives 4A, 4C, and 4D result in lower traffic and lower economic impacts than the No Action Alternative. Alternative 4C would generate approximately the same traffic as the No Action Alternative, and therefore is anticipated to have no measurable or economic benefits above the No Action Alternative in 2020.

Table 3-19: Alternatives 4A through 4D Projected Traffic and Resulting Visitor Economic Impacts in Haines, 2020

	Alternative			
	4A	4B	4C	4D
Total Traffic under No Action Alternative (annual ADT)	55	55	55	55
Total Traffic under Alternatives 4A and 4C (annual ADT)	90	145	55	135
Change in Traffic (annual ADT) (over No Action)	35	90	-	80
Change in Visitor Traffic (annual ADT) (over No Action)	20	50	-	40
Total New Visitors Annually (over No Action)	10,500	28,000	-	24,500
Total New Visitor spending Annually (over No Action)	$810,000	$2,160,000	-	$1,890,000
New Local Payroll Annually (over No Action)	$300,000	$810,000	-	$700,000
New Local Employment Annually (over No Action)	10	20	-	20

Because of relatively flat population projections in Southeast Alaska (i.e., 0.004 percent annual decline from 2020 to 2050; ADOLWD, 2013a), traffic on the marine alternatives is predicted to remain the same for the 30-year forecast period; therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Effects on Population in Haines

The marine alternatives would be expected to have negligible to minor impacts on Haines' current and future population. Alternative 4B, which generates the highest level of traffic, would result in 20 additional jobs in Haines or approximately 30 new residents (assuming each new job

would result in an increase of 1.5 people). This increase would have a minor impact (1.2 percent increase over the 2013 forecasted population of 2,609) on population.

Under the marine alternatives, the Haines-Skagway shuttle is no longer a Day Boat ACF. The ferry used on this route is smaller and requires fewer crew members to operate. The crew members who are no longer needed on the Haines-Skagway route may be transferred to work on a different AMHS ferry and relocate their households to another community. This out-migration would slightly reduce the population gain from new jobs; however, it is not considered in the assessment of overall population impacts in order to present the maximum potential effect of these alternatives.

Effects on Housing and Real Estate in Haines

The marine alternatives would not be expected to result in any measurable change in Haines' housing and real estate markets. Alternative 4B, which generates the highest level of traffic, would result in a population increase of 30 individuals, creating a demand for an additional nine units of housing (based on the 2010 Census estimate of 3.4 persons per household). This demand is within Haines' existing vacant housing capacity.

The Haines-Skagway ferry crew would be stationed in Haines under the marine alternatives; there would be a minor effect on housing and real estate.

Effects on Municipal Revenues and Expenditures in Haines

The marine alternatives would not be expected to result in any measurable change in the Haines Borough's revenues and expenditures. New visitor spending associated with Alternative 4B (estimated to be $2.2 million in 2020) would generate about $120,000 in Haines sales tax revenues (based on a 5.5 percent tax rate), the highest level among the marine alternatives.

The reduction in the Haines-Skagway ferry crew stationed in Haines under the marine alternatives is anticipated to result in a minor decrease in revenues.

3.1.6.4 Effects of the Marine Alternatives on Skagway

Effects on Basic Industry in Skagway

Visitor Industry

Cruise Visitor Market: As is the case with the East Lynn Canal Highway and the West Lynn Canal Highway, the cruise ship market to Skagway would not be affected by the marine alternatives.

Independent Visitor Market: The 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS indicates that traffic to Skagway on all the marine alternatives would range from 45 annual ADT (Alternative 4C) to 120 annual ADT (Alternative 4B). These traffic volumes represent negligible to minor increases in overall traffic. Total new visitor traffic would range from 5 annual ADT (Alternative 4C) to 60 annual ADT (Alternative 4B) in 2020. An increase in 60 annual ADT would equate to approximately 36,200 new visitors to Skagway in 2020. The economic impact of this increase in traffic is described below.

Effects on the Support Sector in Skagway

The effects of the marine alternatives on Skagway's support sector would be minor. Improved access between Juneau and Skagway would increase marginally the level of leakage from the community's support sector. The effect of the marine alternatives on shipping costs is expected to be negligible; therefore, no increase in business profitability or reduction in the cost of living in Skagway is expected. Spending by Juneau residents and other non-residents in Skagway would increase, but only slightly.

Transportation

All the marine alternatives provide measurable improvement over the No Action Alternative in marine passenger and vehicle transportation services in Lynn Canal; however, as indicated by traffic forecasts, Alternative 4C is only 10 annual ADT above the annual ADT for the No Action Alternative. The marine alternatives do not, however, provide improved freight transportation infrastructure in the region. Also please refer to Section 3.1.1, General Effects of Improved Access.

Local Government

The marine alternatives would have negligible to minor effects on local government in Skagway. Also please refer to Section 3.1.1, General Effects of Improved Access, for additional discussion.

Summary of Visitor Spending and Related Impacts in Skagway

Based on data in the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS), the total traffic to and from Haines associated with the marine alternatives varies between 45 annual ADT (Alternative 4C) and 120 annual ADT (Alternative 4B) in 2020. Alternative 4B would generate the highest level of overall traffic to Skagway (120 annual ADT) and the highest level of new visitor traffic (60 annual ADT) in 2020. This traffic includes existing (baseline) traffic and, mostly, induced Juneau resident traffic. Traffic on the marine alternatives is predicted to remain constant over the 30-year period between 2020 and 2050. Because traffic volumes on the marine alternatives stay the same, visitor spending and related impacts are anticipated to also to stay the same over that period. The impacts for 2020 are reported and the impacts for 2050 would be the same.

Excluding baseline and induced local traffic, and based on visitor traffic calculations described above, new visitor traffic to Skagway with the marine alternatives would vary between 5 annual ADT (Alternative 4C) and 60 annual ADT (Alternative 4B) in 2020.

Converting this vehicle traffic estimate to number of new visitors per year indicates that Skagway would see between approximately 4,100 new visitors (Alternative 4C) and 36,200 new visitors (Alternative 4B) in 2020 with the marine alternatives. These are conservative estimates because they are based on the assumption that all traffic is round-trip (in other words, 2 annual ADT equals one additional visiting vehicle, carrying an average of 3.2 people).

As described above, it is assumed that visitor spending in Juneau would average $77 per visitor per day (McDowell Group, 2012a). Based on these per visitor per trip spending averages,

Alternative 4B would result in total additional visitor spending of approximately $2.8 million per year in Skagway in 2020.

The economic impact of this additional spending would include new employment and payroll in Skagway. Based on visitor industry-related payroll and spending in Southeast Alaska for the 2010–2011 season, a multiplier was derived to determine new visitor spending above spending with the No Action Alternative (McDowell Group, 2012b). Based on this analysis, this increase in visitor spending in Skagway would generate approximately $1 million in payroll and an estimated 30 additional jobs (annual average) in 2020 under Alternative 4B. Some portion of this increase in spending would be offset by increased Skagway resident spending in Juneau. Table 3-20 summarizes visitor spending in Skagway associated with each of the marine alternatives, along with the estimated employment and payroll impact of that spending.

Marine alternatives 4A, 4C, and 4D all result in lower traffic and lower economic impacts than the No Action Alternative. Alternatives 4C and 4D would not generate measurable traffic or economic benefits to Skagway above the No Action Alternative in 2020.

Table 3-20: Alternatives 4A through 4D Projected Traffic and Resulting Visitor Economic Impacts in Skagway, 2020

	Alternative			
	4A	4B	4C	4D
Total Traffic under No Action Alternative (annual ADT)	35	35	35	35
Total Traffic under Alternatives 4A and 4C (annual ADT)	75	120	45[1]	110[1]
Change in Traffic (annual ADT) (over No Action)	40	85	10	75
Change in Visitor Traffic (annual ADT) (over No Action)	30	60	5	55
Total New Visitors Annually (over No Action)	16,900	36,200	4,100	31,500
Total New Visitor spending Annually (over No Action)	$1,300,000	$2,790,000	$310,000	$2,430,000
New Local Payroll Annually (over No Action)	$490,000	$1,040,000	$120,000	$910,000
New Local Employment Annually (over No Action)	15	30	5	25

[1]Nearly all new traffic on these alternatives is Skagway resident travel.

Because of relatively flat population projections in Southeast Alaska (i.e., 0.004 percent annual decline from 2020 to 2050; ADOLWD, 2013a), traffic on the marine alternatives is predicted to remain the same for the 30-year forecast period; therefore, annual spending, employment, and payroll related to new vehicle traffic in 2050 would be the same as forecasted for 2020.

Traffic on the marine alternatives is not predicted to increase over the 30-year forecast period considered in the JAI Project SEIS; therefore, annual spending, employment, and payroll related to new visitor traffic is also expected to remain about the same as it would be in 2020.

Effects on Population in Skagway

The marine alternatives are expected to have minor impacts on Skagway's current and future population. Alternative 4B, which generates the highest level of traffic, would result in an estimated 30 additional jobs in Skagway or approximately 45 new residents (assuming each new job would result in an increase of 1.5 people). This increase would have a minor impact on population (approximately 4.5 percent increase over the 2013 forecasted population of 991).

Effects on Housing and Real Estate in Skagway

The marine alternatives are expected to have minor impacts on Skagway's housing and real estate markets. Alternative 4B, which generates the highest level of traffic, would result in a population increase of approximately 45 individuals, creating a demand for an additional 18 units of housing (assuming 2010 Census estimate of 2.5 persons per household). This demand is within Skagway's existing vacant housing capacity.

Effects on Municipal Revenues and Expenditures in Skagway

The marine alternatives are expected to have minor impacts on Skagway's municipal revenues and expenditures. New visitor spending associated with Alternative 4B (estimated to be $2.8 million in 2020) would generate about $110,000 in Skagway sales tax revenues (based on a 4 percent tax rate), the highest level among the marine alternatives.

3.1.6.5 Summary of the Marine Alternatives Effects

Table 3-21: Summary of Effects of Alternatives 4A through 4D

Geographic Area	Industry	Summary of Effects
All Areas		
	Construction	Terminal construction expenditures of between $37.5 and $70.3 million and employment of between 65 and 121 jobs for the 2-year construction period.
	Mining	Negligible effects.
	Seafood	No economic effects expected.
Juneau		
	Basic Industries	Minor visitor industry impacts associated with increased visitor spending.
	Support Industries	Minor retail and service sectors benefits associated with increased visitor spending.
	Population	Negligible effects.
	Housing and Real Estate	Negligible effects.
	Municipal Revenues and Expenditures	Negligible effects.
Haines		
	Basic Industries	Negligible to minor visitor industry impacts.
	Support Industries	Negligible to minor effects.
	Population	Negligible to minor effects.
	Housing and Real Estate	Negligible to minor effects.
	Municipal Revenues and Expenditures	Negligible to minor effects.
Skagway		
	Basic Industries	Minor visitor industry effects.
	Support Industries	Negligible to minor effects.
	Population	Minor effects.
	Housing and Real Estate	Minor effects.
	Municipal Revenues and Expenditures	Minor effects.

3.2 Public Utilities Impacts

3.2.1 General Effects of Improved Access

3.2.1.1 General Effects of Improved Access on Water Supply

None of the alternatives would affect Juneau's water supply, which is adequate to accommodate any population increases attributable to improved access. The East Lynn Canal Highway and the West Lynn Canal Highway would place additional demands on the water supply systems of Haines Borough and the Municipality of Skagway Borough.

3.2.1.2 General Effects of Improved Access on Wastewater and Sewer Treatment

None of the alternatives would affect the wastewater and sewer treatment for the Juneau area. The East Lynn Canal Highway and the West Lynn Canal Highway would place additional demands on the Haines Borough and Municipality of Skagway Borough. Other alternatives would have minimal effects on Haines and Skagway's infrastructure requirements.

3.2.1.3 General Effects of Improved Access on Solid Waste

Given the life spans of the landfills, the projected increase in population, and the intent to build a cogeneration facility in the future as suggested in the *Solid Waste Management Strategy* (CBJ, 2008), all of the JAI Project alternatives would have negligible impacts on solid waste disposal in Juneau and Haines. During the summer months, the Municipality of Skagway Borough operates at capacity due to the heavy cruise traffic. A permit has been acquired for the Municipality of Skagway to expand its landfill capacity. Although the Municipality has yet to initiate construction, none of the proposed access improvements would impact its plans for expansion.

3.2.1.4 General Effects of Improved Access on Hazardous Waste

Given current hazardous waste programs in Juneau, Haines, and Skagway, the projected increase in population from any of the project alternatives, all of the JAI Project alternatives would have negligible impacts on hazardous waste disposal in these communities.

3.2.1.5 General Effects of Improved Access on Electricity

None of the project alternatives would impact Juneau electrical power supplies. Currently, there is sufficient installed capacity to accommodate projected population growth. As a result, any population increases attributable to the JAI Project alternatives would have a negligible impact.

None of the project alternatives would impact electrical power supplies in the Haines Borough or the Municipality of Skagway Borough. The construction of the Kasidaya Creek Hydroelectric project helps to offset AP&T's need to use diesel generation for back-up capacity in Skagway and Haines.

No substantial hydroelectric sites would become available as a result of any of the alternatives, and none would be affected in any way by the any of the alternatives (Venables, personal communication, 2012).

3.2.2 Alternative 1 – No Action Alternative

3.2.2.1 General Effects of the No Action Alternative

The No Action Alternative would have no effect on public utilities in Juneau, Haines, or Skagway. See Section 3.1.1, General Effects of Improved Access.

3.2.3 Alternative 1B – Enhanced Service with Existing AMHS Assets

3.2.3.1 General Effects of the Enhanced Service with Existing AMHS Assets Alternative

Alternative 1B would have no effect on public utilities in Juneau, Haines, or Skagway. The *M/V Malaspina* would homeport in Auke Bay. No adverse impacts are anticipated because the crew would live aboard the ferry. As with the No Action Alternative, one Day Boat ACF would homeport in Haines; no adverse effects are anticipated. See Section 3.1.1, General Effects of Improved Access.

3.2.4 Alternative 2B – East Lynn Canal Highway to Katzehin, Shuttles to Haines and Skagway

3.2.4.1 General Effects of the East Lynn Canal Highway

Hazardous waste and electrical utilities would not be affected by the East Lynn Canal Highway. Public utility effects are expected to be negligible for all communities except the Municipality of Skagway Borough, which may experience the need for additional water, solid waste, and wastewater and sewer treatment capacity.

3.2.4.2 Effects of the East Lynn Canal Highway on the City and Borough of Juneau

Effects on Juneau's public utilities would be negligible under the East Lynn Canal Highway. See Section 3.1.1, General Effects of Improved Access.

3.2.4.3 Effects of the East Lynn Canal Highway on the Haines Borough

Solid waste, hazardous waste, and electric utilities would not be affected in Haines Borough by the development of the East Lynn Canal Highway. Water usage and wastewater and sewer treatment would be affected, however, because a net increase in traffic is anticipated. Additional traffic associated with improved access would hasten the need for future investment in these systems (Haines Borough, 2012).

Haines' water supply is adequate to accommodate current and expected water demand for the next 20 years (Haines Borough, 2012). The East Lynn Canal Highway could generate some population growth over the long term, and therefore would contribute to the eventual need for expansion of water supply facilities.

Haines' wastewater system is also adequate to handle expected demand for the next 20 years (Haines Borough, 2012). Over the long term, if Haines population grows, additional treatment facilities may be required. To the extent that the East Lynn Canal Highway contributes to

population growth in Haines, the eventual need for additional wastewater treatment capacity would expand.

The Haines solid waste site has an expected life of 25+ years (Haines Borough, 2012); therefore, impacts to the collection of solid waste are negligible for the East Lynn Canal Highway.

3.2.4.4 Effects of the East Lynn Canal Highway on Skagway

The East Lynn Canal Highway would increase demands on utilities in the Municipality of Skagway Borough. Hazardous waste and electric utility capacity would not be affected. Water supply, solid waste, and sewer treatment, however, would be affected.

Current water supply capacity in Skagway is adequate for the current population and for supplying cruise ships in the summer. A booster station was recently completed at 17th and State Street, which includes a new well and pump to improve water pressure for the north end of town (Municipality of Skagway, 2009). One Day Boat ACF, however, would homeport in Skagway. It would have two crews of 10 to 12 people, and it is possible that the 20 to 24 crew members would bring their families to Skagway and slightly increase the year-round population. Cruise ships essentially take whatever water is available to them. The city allows the cruise ships to deplete the water supply down to 40 percent of total reserves. Increased non-cruise ship-related demand could be accommodated by further limiting cruise ship purchases.

Skagway's incinerator is adequate for non-peak demand, but use is maximized during the summer peak. A rebuild of key equipment at the plant is presently underway. Maximum demand during the summer is approximately 8 tons per day and averages between 8 and 16 tons per week for the remainder of the year. Anticipated growth in cruise ship traffic will place additional demands on the system. (Cruise ships dispose of only a small amount of trash in Skagway; however, shore-side passenger-related commercial activity generates a large volume of waste.)

Skagway's wastewater treatment system operates at near full hydraulic capacity (630,000 GPD) for short periods of time during the fall wet season (average daily flow is approximately 200–300 thousand GPD). During the summer, the wastewater volumes are higher due to the large number of visitors in town and the commercial bus lines that empty their wastewater systems for processing in Skagway. Increased summer visitor traffic associated with the highway alternatives would not measurably affect this fall peak, but could increase summer volumes. The treatment plant is presently being upgraded to add enhanced sedimentation units to improve consistency of biological oxygen demand removal and increase solids removal (State of Alaska, 2010). Overall, the system is adequate for the next 20 to 25 years (Lawson, personal communication, 2013).

3.2.5 Alternative 3 – West Lynn Canal Highway

3.2.5.1 General Effects of the West Lynn Canal Highway

Solid waste, hazardous waste, and electrical utilities would not be affected by the West Lynn Canal Highway. Public utility effects for the West Lynn Canal Highway are expected to be negligible for all communities except the Haines Borough, which may experience the need for additional water and wastewater and sewer treatment capacity.

3.2.5.2 Effects of the West Lynn Canal Highway on the City and Borough of Juneau

Juneau's public utilities would not be affected by the West Lynn Canal Highway. See Section 3.1.1, General Effects of Improved Access.

3.2.5.3 Effects of the West Lynn Canal Highway on the Haines Borough

Solid and hazardous waste facilities and electric utilities in the Haines Borough have adequate capacity to meet the slight increase in demand associated with the development of the West Lynn Canal Highway. Water and wastewater and sewer treatment would be affected.

Haines' water supply is adequate to accommodate current and expected water demand for the next 20 years (Haines Borough, 2012). The slight population growth associated with the West Lynn Canal Highway could contribute to the eventual need for expansion of water supply facilities.

Haines' wastewater system is also adequate accommodate current and expected demand for the next 20 years (Haines Borough, 2012). Over the long term, as Haines' population grows, additional treatment facilities may be required. The slight population growth associated with the West Lynn Canal Highway could add to the long-term need for additional treatment facilities.

The Haines solid waste site has a predicted life of 25+ years (Haines Borough, 2012). Given the expected slight population increase, impacts to the collection of solid waste are negligible.

3.2.5.4 Effects of the West Lynn Canal Highway on Skagway

Skagway's public utilities would not be affected by the West Lynn Canal Highway. See Section 3.1.1, General Effects of Improved Access.

3.2.6 Alternatives 4A through 4D – Marine Alternatives

3.2.6.1 General Effects of the Marine Alternatives

Public utilities in the communities of Juneau, Haines, and Skagway would not be substantially affected by the marine alternatives. In 2020 and 2050, Alternative 4B would generate the most traffic to and from Juneau (265 annual ADT) among the marine alternatives. Conversely, the No Action Alternative is projected to induce the least amount of traffic (90 annual ADT), followed by 4C (100 annual ADT), 1B (110 annual ADT), 4A (165 annual ADT), and 4D (245 annual ADT). Despite the fact that all the marine alternatives are predicted to result in substantially less annual ADT than the highway/ferry alternatives (with the East Lynn Canal Highway expected to result in 835 annual ADT), the traffic volume increases in Juneau, Haines, and Skagway would place additional demands on local utilities.

See Section 3.1.1, General Effects of Improved Access, for additional discussion.

3.2.6.2 Effects of the Marine Alternatives on the City and Borough of Juneau

The marine alternatives would have no effect on public utilities in Juneau. See Section 3.1.1, General Effects of Improved Access.

3.2.6.3 Effects of the Marine Alternatives on Haines

Alternatives 4B and 4D would increase traffic to and through Haines. The increased traffic could place additional demands on local utilities. As noted for the East Lynn Canal Highway and the West Lynn Canal Highway, water and wastewater systems in Haines can accommodate additional demand. Additional traffic associated with improved access would hasten the need for future investment in these systems (Haines Borough, 2012).

See Section 3.1.1, General Effects of Improved Access.

3.2.6.4 Effects of the Marine Alternatives on Skagway

The marine alternatives would have negligible effects on public utilities in Skagway. See Section 3.1.1, General Effects of Improved Access.

3.2.7 Impact on the Economic Feasibility of a Juneau-Haines-Skagway Electrical Intertie

This section provides a brief overview of the potential effects of the JAI Project on the economic feasibility of a Juneau-Haines-Skagway electrical transmission line. In 2003, the Southeast Conference sponsored the *Southeast Alaska Intertie Study*, prepared by Hittle & Associates. That study proposed an option to interconnect Juneau, Haines, and Skagway with a 69-kilovolt (kV) overhead line from Auke Bay to a point east of Haines (82.5 miles of transmission line) where the line would be transformed to 34.5-kV and continue underwater to Haines to tap the existing 34.5-kV underwater cable connecting Skagway and Haines (Hittle & Associates, 2003). The $70 million cost estimate is based on roadless construction along the east side of Lynn Canal.

An earlier study in 1992 addressed the economic feasibility of the Lake Tyee-Swan Lake transmission intertie and found potential intertie construction cost savings of about $70,000 per mile for highway construction as opposed to helicopter construction (AEA, 1992). Assuming that cost savings would be about $90,000 per mile in current dollars, the East Lynn Canal Highway would reduce the cost of Lynn Canal intertie construction by approximately $4.5 million. The Southeast Conference report indicated that with a highway, line maintenance would be easier; however, reliability would be low due to avalanches (Hittle & Associates, 2003).

The Southeast Conference study suggested that the benefit of a Juneau-Haines-Skagway intertie would be the sale of surplus hydroelectric energy generated at the Kasidaya Creek project to AEL&P. The Kasidaya Creek project came on line in 2008 and has a 3-MW peak capacity. The study estimated that with the Kasidaya Creek project, the upper Lynn Canal area would have surplus hydroelectric energy for an estimated 30 years.

The most recent study was conducted by Black and Veatch in 2012 for the Alaska Energy Authority is the *Southeast Alaska Integrated Resource Plan* (AEA, 2012). The study found that the region's limited size directly affects the ability to justify the expansion of the region's transmission network, based on fundamental economics. This means that regional loads are insufficient to result in sufficient flows of electricity over an expanded transmission network to justify the capital and operating costs. Except for transmission projects that are part of committed resources, none of the previously studied transmission intertie projects—including the Juneau-Haines-Skagway electrical transmission line—were recommended for inclusion in the region's

expansion plans. The study notes, however, that the State may decide to move forward with one or more of these interconnections for noneconomic reasons.

Should the State decide to construct the proposed intertie, the East Lynn Canal Highway would not affect the timing of intertie development.

3.3 Social Environment

3.3.1 General Social Effects of Improved Access

3.3.1.1 General Effects on Education

Improved access, whether by ferry or highway/ferry, generally benefits educational programs and organizations. While there is already some exchange between the communities of Juneau, Haines, and Skagway, it is expected that improved access will allow more frequent, more convenient, and less costly exchanges between the communities. Training opportunities for educators in all three communities are expected to be more heavily attended with improved access. In addition, more training opportunities may become available as a result of better attendance. Sports programs and events will be enhanced, both with athlete and audience participation if cheaper, more reliable transportation services are offered. The relative benefit of different alternatives on Haines, Skagway, and Juneau will vary.

Local School Districts

Enrollment: School enrollment is a function of population. Since population impacts are expected to be very small, this would also be true of impacts on enrollment. The maximum impact on Juneau population of any alternative is estimated at only about 1 percent. This would mean an additional 32 students, spread across all grades. Increases in Haines and Skagway enrollment are not expected to be substantial. Haines enrollment could increase by a maximum of 18 students and Skagway enrollment by maximum of about 11 students, assuming enrollment increases at the same rate as population. Depending on the alternative, AMHS crews may move their families, which may include school-age children, to these homeports and slightly increase enrollments at local schools.

Budget: Improved access would reduce the cost of goods and services purchased by Haines and Skagway schools from suppliers in Juneau. It would also make such purchases more convenient and therefore more likely, relative to purchases from suppliers outside the region. Lower cost transportation between Juneau and Haines and Skagway would reduce the cost of professional services exchanged between the three school districts. It would also make centralized training and conferences somewhat less expensive. School board members and administrators from nearby districts would benefit from better vehicle access to the state capital, whether by ferry or highway. However, driving to Juneau would likely remain unattractive to busy board members and administrators from farther away than Haines and Skagway.

Facility Capacity: Enrollment impacts are not expected to be large enough to be a factor in decisions regarding the maintenance, design, construction, or expansion of new facilities.

Educational Programs: Opportunities for coordination and cooperation between school districts would be enhanced by improved access by highway or ferry. Haines and Skagway staff would have better access to training, technical assistance, and professional exchange with colleagues in Juneau. Easier, faster, or cheaper travel by students for school-related activities would be an important benefit of improved access to Juneau. An important benefit of some, but not all, alternatives would be less missed class time and reduced need for overnight stays. Students would also have better access to cultural resources in all three communities, as well as in Whitehorse. While student cultural trips, including travel to view the Capitol and legislature, are currently possible, lower cost and more convenient scheduling would encourage more travel.

University of Alaska

UAS does not anticipate major impacts from improved access, either by highway or ferry. Travel to Haines and Skagway by instructors occurs, but is infrequent. UAS provides courses by distance delivery to students outside Juneau; this would not likely be affected. It is possible that UAS recruitment would benefit, if more prospective students from around the state were able to visit the Juneau campus (Meyers, 2003).

With improved access, the Juneau branch of the UAF Cooperative Extension Service would be able to offer more courses, conferences, and activities, such as the 4-H youth program, in Haines and Skagway. Attendance at events in Juneau by residents of Haines and Skagway would also increase.

Community Education and Education Services

Improved access would benefit organizations and agencies providing educational and related services to Haines and Skagway directly from Juneau. The Vocational Training and Resource Center estimates that a few more students from outlying communities might enroll, but notes that availability of affordable student housing in Juneau is more of an issue than transportation access.

Comparison of Effects of Alternatives on Education

The effects of different alternatives correlate closely with travel convenience. Convenience is discussed below in Section 3.3.1.4, General Effects on Quality of Life. In general, the highway alternatives make intra-community travel cheaper and more convenient. This would encourage more travel by school athletic teams and other groups. To some extent it would encourage travel by staff and administrators, though air would continue to be an attractive alternative due to the high value of time for these professionals. As noted above, highway alternatives would encourage attendance at special events somewhat more than ferry alternatives.

The East Lynn Canal Highway and the West Lynn Canal Highway, which include highways, are more convenient for obtaining supplies from Juneau. However, this would apply only when a vehicle is taken to Juneau for purposes of shopping. The marine alternatives still allow supplies to be ordered and delivered by ferry with a frequency that varies from daily to more than twice a day. Delivery of items for shipment by ferry is much more convenient for alternatives that use the Auke Bay Ferry Terminal (Alternatives 1B, 4A, and 4C), rather than the Sawmill Cove Ferry Terminal.

3.3.1.2 General Effects on Health Care and Social Services

Health and social services demand is mainly a function of population, and would therefore not be expected to change measurably. Additional visitors to Juneau, particularly older retirees, will place some new demands on emergency room and other services in Juneau. Demand for health care services resulting from additional highway accidents would be negligible, compared with existing demand.

The Haines Medical Clinic is operated by SEARHC. SEARHC is a regional organization that also has a large presence in Juneau. The Dahl Memorial Clinic is operated by the Municipality of Skagway. Neither clinic offers inpatient care. Overnight or long-term care patients are transferred to Sitka (SEARHC) or Juneau. Improved access between Juneau, Haines, and Skagway would reduce cost and increase the efficiency of health care operations in northern Southeast Alaska.

Improved access would make it somewhat easier and faster to transport patients—either on an emergency or scheduled basis—to Juneau from Haines or Skagway. However, air transport would likely remain the method of choice. Similarly, family and friends from those communities would find it easier to visit patients in Juneau. Both highway and all-ferry access alternatives are somewhat dependent on weather. Improved transportation might encourage more inter-community service travel by medical specialists, but this is speculative.

3.3.1.3 General Effects on Public Safety

Local impacts on public safety from improved access are expected to be minor in Haines or Skagway. Fire service, EMS, and police in those communities restrict coverage mainly to the local road system. Any influx of new traffic is not likely to be large enough to affect the basic level of local demand for safety services in Haines or Skagway. Juneau will likely experience a small increase in local police and EMS calls as a result of additional visitors in town, but more visitors would also result in more resources for the local economy (Decker, personal communication, 2012).

As with any rural Alaska road system, emergency situations occurring far from downtown areas will create response challenges for fire, EMS, and police departments. Depending on the nature and location of the emergency, personnel and equipment will be pulled away from normal duties, possibly for extended periods. The agencies with the most resources available—State Troopers, JPD, and CCFR—say they are already operating at minimal staffing levels given the extent of their current responsibilities and service areas. The State Troopers currently have 32 first-responders to cover all of Southeast Alaska.

The East Lynn Canal Highway and the West Lynn Canal Highway would add to the responsibilities of emergency response agencies in all communities. The East Lynn Canal Highway would add approximately 32 miles to the Juneau road system, beginning at Cascade Point and ending in the area of Eldred Rock, and approximately 20 miles in Haines Borough from Eldred Rock to the area of the Katzehin River. For the West Lynn Canal Highway, approximately 1 mile of new road would be added to the Juneau road system, ending in Sawmill Cove. All of the highway from William Henry Bay north would be located within the Haines Borough.

Neither the State Troopers nor the police in any of the three communities anticipate regular patrols of highway segments between Echo Cove and Haines. The new highway segments would be outside the fire service districts for both the Haines and Juneau boroughs. All public safety agencies in the area, however, say they will do their best to respond to emergency situations, and will formulate response plans and cooperation agreements if and when a highway is built for either alternative.

Based on the 2009 average number of 1.001 crashes per million miles traveled on rural Alaska highways (DOT&PF, 2012), if the East Lynn Canal Highway were in service today, one would expect approximately 15.4 crashes per year to occur along the proposed road segments. For the West Lynn Canal Highway, approximately 11 crashes per year would be expected to occur along the proposed road segments. If either Alternative 4B or 4D were in service today, about 1 crash per year would be expected along the proposed road segments.

Juneau

Fire Protection and EMS: Traffic increases resulting from improved access are not expected to have an effect on fire and EMS within the current service areas (Lundfelt, 1994; Ethridge, 2003). Currently, the CCFR responds to fire calls as far as Cohen Drive to the north. CCFR's station closest to the East Lynn Canal Highway is at the airport, which means a long response time to the CBJ boundary. This would be the station most likely to be dispatched to emergencies if the Glacier Highway were extended. Because of the long response time, which leaves the station without staff and sometimes without equipment, CCFR asks off-duty personnel to come in to the station so CCFR can respond to nearby emergencies. CCFR has access to all types of equipment that might be necessary to respond to an emergency on an extended Glacier Highway, such as ATVs, snow machines, helicopters, and water craft. CCFR also works with the U.S. Coast Guard as needed, so the agency has additional marine options (Jager, personal communication, 2012).

Police Protection: Improved access would have only a modest impact on police services. Historically, visitors to Juneau have not been a substantial source of crime. However, the JPD is currently operating at the limits of its capacity and would need additional personnel to incorporate new responsibilities without affecting current services. Impacts expected would be of two types: 1) a small increase in local traffic congestion, vehicle infractions, and traffic accidents, and 2) for highway alternatives, the need to respond to occasional emergency calls on the new highway areas within CBJ boundaries, which would call for more resources. In the absence of some additional staffing, there would likely be some effect on current services in the rest of the CBJ, when calls take officers to areas outside their current patrol areas. Increases in costs associated with police services would be offset by increases in sales tax revenues associated with increased visitor traffic (Decker, personal communication, 2012).

In response to concerns voiced by members of the public, the JPD has discussed whether connecting Juneau to the outside highway system would result in new types of crime or more serious crime. Currently, a very small percentage of local crime is associated with non-residents. Only 5 percent of arrests involve non-Juneau residents and less than 2 percent involve people from outside Alaska. Juneau also has very low rates for many of the crimes associated with more "connected" communities, such as gang activity and car theft. It has relatively higher incidence

of crime that may be associated with isolation; e.g., domestic and alcohol-related crimes. One possibility that has been raised is that ending either a highway or mainline ferry service in Juneau would precipitate an "end-of-the-road" effect, bringing to town more transients who are unable to support themselves and individuals with mental and behavioral problems. However, the U.S. and Canadian customs stations on the Haines and Skagway highways act as a filter in this regard. Existing screens include license plate, driver's license, and passport checks. Depending on the level of security alert, additional checks may be implemented.

While these may be valid concerns, the JPD believes there is not enough evidence or precedent to suggest that simply improving access would affect the nature and rates of local crime. Much more of a factor than access is Juneau's distance from other population centers, particularly large cities. The JPD believes a highway connection might be associated with some increase in teen runaways and perhaps some additional auto theft and credit card incidents. There could be an increase in importation of illegal drugs; however, it is already relatively easy to move these substances in and out of Juneau.

The Alaska State Troopers, under the Department of Public Safety, do not provide enforcement services within the municipalities, but respond to calls everywhere else in the boroughs. This means that the troopers are responding to calls in areas where the Glacier Highway would be extended (the East Lynn Canal Highway) and where a highway from William Henry Bay to Haines would be built (the West Lynn Canal Highway). If the East Lynn Canal Highway is implemented, the Department of Public Safety may need to reallocate some of its resources to adjust to needs. The Department of Public Safety reports that the troopers use patrol cars, planes, boats, ATVs, snow machines, or whatever is necessary to respond to emergency or rescue calls (Vrabec, personal communication, 2012).

Haines

Fire Protection and EMS Services: Increased traffic to and through Haines would place additional demands on the community's fire protection and EMS services. If fire and EMS personnel respond to incidents outside current service areas, it will reduce capacity to deliver normal services while those personnel and equipment are occupied. This impact may be most pronounced with the West Lynn Canal Highway, which is forecast to increase to a total annual ADT of 655 vehicles in 2020 (650 annual ADT in 2050). This increase in new traffic is not likely to be enough to affect the basic level of local demand for fire and emergency response services in Haines.

Police Protection: The Haines Police department does not expect any substantial impact from improved Juneau access. Most crime in Haines is local, in spite of the highway connection to the north. The department operates within the Townside Service Area from just beyond the airport and to about 5 miles in each direction from downtown Haines. Officers respond to areas outside the Townside Service area on an availability basis. Depending on the emergency and officers' existing responsibilities, personnel may be dispatched to outside areas. The department would not respond to incidents on the East Lynn Canal Highway, but would respond to emergencies on the West Lynn Canal Highway, as they do now, if a trooper was not available (Lowe, personal communication, 2012).

At this time, the single Alaska State Trooper currently in Haines is a Wildlife Trooper who would have very little capacity to respond to any incidents resulting from improved access. The Troopers would anticipate a memorandum of understanding between all regional enforcement agencies to define responsibilities for any new highway segments such as those called for in the West Lynn Canal Highway.

Skagway

Fire Protection and EMS Services: Emergency response demands from additional traffic through Skagway could affect the SVFD. The SVFD's size and reliance on volunteers makes responding to multiple emergencies very challenging. Of the proposed alternatives, the East Lynn Canal Highway and the West Lynn Canal Highway would result in the largest annual ADT increases in Skagway, at 380 and 235 annual ADT in 2020 (projected to be 375 and 235 annual ADT in 2050), respectively. It is possible that such a large increase in annual ADT could strain present SVFD resources and could require additional paid staff.

Police Protection: Skagway police would not expect a substantial increase in activity as a result of improved access. The department already adds four seasonal officers to address the influx of summer population and visitors, and this is enough to handle whatever additional demand is generated by improved ferry service. The department typically has two officers on duty around the clock.

Police incidents in Skagway tend to involve one of four groups: residents, seasonal workers, cruise visitors, or Canadian visitors. Because three of the four groups constitute non-residents, the proportion of non-resident arrests is fairly high, perhaps 75 percent by department estimates. Police activity occasionally correlates with celebration of Canadian holidays by visitors driving down the Klondike Highway (Sexton, 1994; Spurrier, 2003).

Comparison of Effects of Alternatives on Public Safety

In general, Alternative 1B and the marine alternatives would have very little impact on public safety. Historically, the need to send fire and emergency personnel to address a ferry incident has arisen very infrequently. The East Lynn Canal Highway, the West Lynn Canal Highway, and Alternatives 4B and 4D, which call for new terminals north of Auke Bay, would be more challenging for safety personnel than the baseline case. Incident response time would increase in proportion to the distance of the new terminals from either downtown Juneau or downtown Haines.

To the extent that the marine alternatives offer more frequent or faster service than the No Action Alternative, it would be slightly more useful for evacuation of emergency cases from Skagway and Haines to Juneau. However, air transport would remain the best evacuation method in most cases, weather permitting.

Currently, none of the emergency response agencies in the three communities, with the exception of the CCFR medevac plane, own air or marine response equipment, but the Juneau agencies have access to such equipment if it is needed. Ferry terminals in remote areas may also be sites of vandalism and related incidents. The East Lynn Canal Highway and the West Lynn Canal Highway would also have the probability of highway-related emergencies. The implications of

avalanche hazard for the East Lynn Canal Highway and the West Lynn Canal Highway are addressed in the *Snow Avalanche Technical Studies*.

3.3.1.4 General Effects on Quality of Life

Improved access is viewed as having a positive impact on quality of life by most, but not all, residents of the three communities. The benefits of the East Lynn Canal Highway and the West Lynn Canal Highway are generally seen as greater than those of Alternative 1B and the marine alternatives; however, so are the drawbacks. Travel between the three communities by local residents is projected to increase substantially if the East Lynn Canal Highway is built.

The quality of life may be most improved for those Juneau residents who cannot afford ferry fares or airfare associated with travel to outside destinations. Another quality of life benefit would be associated with simply having the alternative of driving to and from Juneau.

Overall, a highway would alter the character of the region in ways that are seen by some as mainly positive and by others as mainly negative. Because Lynn Canal has had regular ferry service for more than 40 years, and a portion of residents in all three communities prefer ferry service to highway construction, it seems likely that elimination of ferry service north of Juneau would be seen by these residents as a negative impact on quality of life.

Residents of all three communities say that the main benefit of better access would be economic growth and more recreation opportunities, both of which would be best achieved by the East Lynn Canal Highway or the West Lynn Canal Highway. Loss of wilderness and scenic values is seen as a drawback to highway construction in all three communities. This would be amplified if a highway led to visible logging or other industrial activity. Traffic impacts vary by community.

Juneau

Overview: In the 1994 *Juneau Access Household Survey*, it was found that more than three-quarters of Juneau residents agree that improved access to their community is important. There is less agreement on whether quality of life is best served by access via highway or via ferry service. Many proponents of a highway acknowledge that better ferry service would improve quality of life, but not enough. Many proponents of ferry service believe that, while better access is important, only ferry access would result in an overall improvement in quality of life.

The reasons for these differing views are complex and interwoven with how individuals view Juneau's unique status as the only state capital without highway access. Research and public comment have revealed that some residents cherish this condition, while others deplore it. Further, improved transportation is generally associated with growth opportunities, and growth impacts quality of life. Finally, as was noted in the 1994 Juneau Access *Socioeconomic Effects Report*, the isolation associated with lack of highway access induces a sense of psychological comfort in some residents and a feeling of frustration and "claustrophobia" in others.

Survey Results: In 2003, 32 percent of residents surveyed said improved transportation is important, and 46 percent said it is very important. Nearly three quarters of those surveyed said they would travel to or through Haines or Skagway more often if it were more convenient. Recreation is the most important reason for having improved access (cited by 73 percent of

respondents)[29]. Other reasons for better access include visiting friends and family (cited by 22 percent), combination business/recreation trips (cited by 19 percent), shopping (cited by 14 percent), and business or medical (cited by 5 percent each) (McDowell Group, 2003).

In the 1994 *Juneau Access Household Survey*, Juneau residents said benefits of improved access would include economic growth (41 percent), enhanced recreation (31 percent), and access to Juneau's job market (29 percent). Negative impacts anticipated by respondents include social changes such as increased crime and transients in town (55 percent) and traffic from increased tourism (15 percent). Seventeen percent said they expected no negative impacts.

Traffic Impacts: Overall vehicle traffic between Juneau and either Haines or Skagway under a marine alternative is projected to be between 100 annual ADT and about 265 annual ADT in 2020 and 2050, leaving substantial unmet Lynn Canal demand (the East Lynn Canal Highway would produce a combined 835 annual ADT in 2020 and 825 in 2050). The marine alternatives and Alternative 1B would also do little to increase local recreation traffic (i.e., day trips to the Berners Bay area, see below).

The East Lynn Canal Highway would have a much larger impact on traffic, but the impact would still be small relative to overall traffic in Juneau. The impact would be most noticeable in particular areas of town. The following discussion compares existing traffic (measured in 2011) with the traffic estimated to result if the highway alternatives were implemented[30].

If the East Lynn Canal Highway were placed in service, it is estimated that annual ADT between Juneau and both Haines and Skagway would increase from 90 annual ADT (the present traffic) to 835 annual ADT in 2020 and 825 annual ADT in 2050. Traffic would be less than twice as heavy in summer and less than half as heavy in winter as the annual daily average. In addition to this through traffic, local day trips for recreation along the roadway would also increase, as described below.

For reference, the annual ADT at Egan Drive near the Douglas Bridge in 2011 was approximately 17,100. Annual ADT ranges from 1,170 on Seward Street near 4th Street, to 3,345 on South Franklin Street, to 11,872 in front of the Goldbelt Hotel. (These are year-round numbers; daily average numbers in the summer are higher.) Glacier Highway at Engineer's Cutoff had 11,800 annual ADT and at the Auke Bay Ferry Terminal, 5,375 annual ADT. North of the ferry terminal, traffic declines steadily, reaching about 950 annual ADT near Cohen Drive and less than 150 annual ADT as the road approaches Echo Cove (AMHS, 2012).

Negative effects of traffic are most likely to be felt in the sparsely populated areas north of Auke Bay. The 835 annual ADT projected new through traffic (the East Lynn Canal Highway) represents about an 87 percent increase near Cohen Drive, and about a 600 percent increase at Echo Cove. The incremental increase in more populated areas, such as downtown Juneau, would be much less important. Although traffic on South Franklin Street is recognized as badly congested, a proposal to widen it was abandoned. To address pedestrian congestion on South

[29] Respondents were given the option of multiple answers

[30] The actual implementation date for any new access alternative would be approximately 2020, assuming financing, design and construction move forward without unforeseen delays.

Franklin Street, a new section of Seawalk, approximately 150 feet in length, was added behind People's Wharf and Warner's Wharf. There are plans to construct a new cruise dock (16 B), which is anticipated to help alleviate congestion in the area (Watt, 2013). The number of RVs visiting Juneau would increase with improved access. It is estimated that the number of RVs visiting Juneau would increase from the current level of 597 per year to approximately 2,100 per year, if the East Lynn Canal Highway were constructed. Ninety percent would visit during the summer, with the majority anticipated to stay in Juneau an average of about 2 to 3.5 days.

In 2010, RVs made up approximately 5 percent of the traffic in Lynn Canal during the summer, and this percentage is anticipated to remain the same. This means that, during the summer months in 2020 and 2050, one would expect to encounter an average of about 40 RVs traveling on the East Lynn Canal Highway on a summer day. Peak weeks in the summer might yield approximately 110 RVs traveling on the new highway (based on existing peak week RV traffic). This is not enough to affect Egan Drive traffic. However, the RVs would slow traffic on two-lane roadways and contribute somewhat to congestion, particularly in the downtown core. Improved marine access would have much less impact on the number of RVs in Juneau, assuming ferry fares remain at current levels.

The 835 annual ADT traffic volume reported above for the East Lynn Canal Highway represents vehicles traveling from Juneau to Haines and Skagway and vice versa. In addition, alternatives with highway segments (the East Lynn Canal Highway and the West Lynn Canal Highway) would generate more local traffic, because they would create opportunities for recreational day and camping trips by Juneau residents that would involve driving part way to Haines or Skagway and returning. The most obvious of these opportunities within the CBJ is the area of Berners Bay. Appendix E of the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) shows that the East Lynn Canal Highway could generate recreational trips totaling approximately 380 additional annual ADT at Berners Bay. Combined with the 835 annual ADT from through traffic, this would mean a total of perhaps 1,215 annual ADT at what is now the northern end of the Juneau road system. This is nearly comparable to the existing traffic at Cohen Drive and also at the central portion of Thane Road. It is also similar to traffic on the North Douglas Highway just before the Eaglecrest Road turnoff. Traffic on the North Douglas Highway after the Eaglecrest Road turnoff is approximately 400 annual ADT.

The amount of traffic actually observed on a day-to-day basis would vary considerably from the annual ADT depending on the season. Traffic between Juneau and Haines on a winter day would average as much as 250 vehicles if the East Lynn Canal Highway were implemented, about half the annual ADT of 455 in 2020 and 450 in 2050. In the summer, traffic would increase to an average of about 730 vehicles in 2020 and 725 in 2050.

By 2050, traffic between Juneau and Haines would decrease to 250 per day in winter and reach 725 per day in summer, under the East Lynn Canal Highway. Day recreation trips could add another 600 to 700 annual ADT in summer in the area of Echo Cove and Berners Bay.

Other Quality of Life Impacts: Recreational areas between Auke Bay and Echo Cove would receive greater use as a result of the additional traffic associated with the East Lynn Canal Highway and the West Lynn Canal Highway. This is particularly true of the Eagle Beach area,

which is highly attractive and is visible and readily accessible from the road. Other popular local recreation areas would also receive some additional use. In general, new highway segments would degrade the wilderness character of the areas they pass through. However, they would make access easier to the water and to backcountry areas between Echo Cove and Haines. It is also possible that Goldbelt land at Echo Cove would experience increased trespassing and vandalism (NEI, 2013).

Construction of a ferry terminal at Sawmill Cove and/or Slate Cove would also change the wilderness character of the area. Further alteration would occur, if a highway to the Berners Bay area precipitates industrial development on nearby private land; for example, on property owned by Goldbelt, Inc. near Sawmill Creek. However, highway segments would also create access to new areas for hunting, fishing, and back country travel.

Improved access to Juneau, and the small (less than 1 percent) population increase associated with it, is not expected to alter residential and shopping patterns, though an overall increase in local spending would likely result from new visitors to town. The new traffic would encourage some residential and commercial development, particularly on private land north of Cohen Drive. Cultural institutions and opportunities would be largely unaffected. Some professional service providers in Juneau may find it easier to serve customers in Haines and Skagway, and, potentially, Whitehorse. This additional economic activity would benefit the community as a whole to the extent that it produces tax revenues in excess of the costs associated with increased traffic and visitors.

Haines

Overview: Haines's quality of life would benefit in a number of ways from improved access to Juneau. Better access to shopping, health care, and other services; economic growth; increased tourism; and more recreation opportunities are potential benefits cited by Haines residents. Overall negative impacts cited include increases in crime, undesirable transients, traffic, and loss of local business sales (McDowell Group, 1994).

The impacts of individual alternatives differ, however. The East Lynn Canal Highway would lead to the largest increase in Haines visitor traffic. Assuming that ferry service between Haines and Katzehin is relatively frequent and inexpensive, the East Lynn Canal Highway would bring an estimated 89,400 additional visitors to Haines in 2020. At issue for any alternative would be how increased visitor spending in Haines would balance increased resident spending in Juneau. The East Lynn Canal Highway is anticipated to result in a net increase in spending in Haines of $5.6 million in 2020.

Any improvement in access would increase travel to Haines by Juneau residents, primarily for weekend recreation. Key factors are cost and frequency of shuttle ferries, type and number of recreation opportunities, and, to some extent, availability and cost of second-home and camping sites.

Improved access would increase the attractiveness of Haines as a retirement community—mainly through better access to Juneau health care—and as a location for vacation homes owned by Juneauites. The former is seen as an enhancement to quality of life by most Haines residents. The

latter is viewed by some as a benefit (mainly economic) and by others as a detraction, in view of more traffic and higher real estate costs.

The East Lynn Canal Highway and the West Lynn Canal Highway would result in some degradation of local views and wilderness character. This effect would be most pronounced with the East Lynn Canal Highway, which would be visible from many places in Haines, as well as parts of Battery Point State Recreation Area and Chilkat State Park. The West Lynn Canal Highway would alter views from the southwest side of Chilkat Peninsula, including Chilkat State Park.

Traffic Impacts: Haines is already oriented toward serving and accommodating visitor vehicle traffic. Over time, the additional traffic from the West Lynn Canal Highway would cause some congestion in the downtown area. Parking is not likely to be an issue, as options for expanding downtown parking are fairly numerous. Partly as a result of Juneau recreational travel, there would be additional traffic on roads near Haines scenic attractions; for example, Mud Bay Road and the Haines Highway in the vicinity of the Chilkat Bald Eagle Preserve.

Survey Results: When surveyed in 2003, 87 percent of Haines residents said improved access to Juneau is important (22 percent) or very important (65 percent). Most (67 percent) said ferry service is the best way to improve access; 29 percent chose a highway. Haines residents say they make an average of 8.8 trips per household per year to or through Juneau, according to survey results. The main reasons for traveling are business (19 percent), medical (19 percent), to connect with jet flights at Juneau Airport (18 percent), shopping (17 percent), vacation/recreation (16 percent), and visiting friends and relatives (10 percent).

Skagway

Overview: In 1994, Skagway residents said that increased tourism, economic growth, and enhanced recreation would be the main benefits of improved access to Juneau. Negative impacts cited include increased crime, undesirable transients, and loss of spending in local businesses. Skagway is well located to act as an interim shopping/dining spot for travelers between Juneau and Whitehorse. In 2020, visitor spending in Skagway is anticipated to be $4.7 million.

Survey Results: In the 2003 survey, most Skagway residents said that improved access to Juneau is important (24 percent) or very important (59 percent). Residents said the best way to provide access is by ferry (60 percent); 35 percent chose a highway. On average, Skagway residents make an average of 10.1 trips per household per year to Juneau. The main reasons for traveling are vacation/recreation (27 percent), to connect with jet flights at Juneau Airport (17 percent), business (17 percent), medical (16 percent), shopping (15 percent), and visiting friends and relatives (8 percent).

Traffic Impacts: Improved access would increase traffic in Skagway. The East Lynn Canal Highway would produce visitor traffic to and through Skagway of 250 annual ADT soon after the highway is built. The West Lynn Canal Highway would produce visitor traffic to and through Skagway of 145 annual ADT soon after the highway is built. The largest source of new traffic would be from Juneau resident travel, including through travel between Juneau and Whitehorse.

Traffic impacts would be most noticeable in the port/waterfront area and along Broadway Street. Because the majority of new traffic would occur in summer, and Skagway is already largely oriented around summer tourists, traffic impacts in the downtown area are not considered negative by many local residents (McDowell Group, 1994). Similarly, land use patterns would not be expected to change except for intensified use of what is already zoned for commercial use. However, there will be additional pressure on downtown parking, which is identified as a needed capital improvement in the *2020 Skagway Comprehensive Plan*. Additional parking may also be needed near the small boat harbor. The likelihood of new residential, commercial, or industrial use along any new roadway south of town is low because of the steep terrain.

Comparison of Effects of Alternatives on Quality of Life

Overall, the East Lynn Canal Highway and the West Lynn Canal Highway have greater positive and negative impacts on quality of life than the marine alternatives and Alternative 1B. The East Lynn Canal Highway and the West Lynn Canal Highway provide more convenient access than the marine alternatives and Alternative 1B. The cost of this convenience is a greater impact on traffic, the character of the environment, public safety, and other areas described above, including loss of ferry service in Lynn Canal.

The marine alternatives do less to improve quality of life through convenient access than the East Lynn Canal Highway and the West Lynn Canal Highway. However, they have very few negative impacts on quality of life. The major negative impacts are associated with building a new ferry terminal at Sawmill Cove (Alternatives 4B and 4D), which would have some of the same traffic and environmental impacts as the East Lynn Canal Highway and the West Lynn Canal Highway, though to a lesser extent.

In addition to the complex implications of the highway versus marine debate, the East Lynn Canal Highway and the West Lynn Canal Highway have different quality of life implications for all three communities. The character of Berners Bay is much more affected by the East Lynn Canal Highway than by the West Lynn Canal Highway. In order of impact on Berners Bay, the East Lynn Canal Highway would have the most impact because it calls for a highway around the perimeter of the bay. Of the highway alternatives, the West Lynn Canal Highway has the least impact on the bay, because all traffic on the east side of Lynn Canal would end at Sawmill Cove.

The East Lynn Canal Highway, the West Lynn Canal Highway, and Alternatives 4B and 4D call for widening the newly constructed portion of Glacier Highway and therefore make it more likely that there will be commercial or industrial development along Glacier Highway north of Auke Bay and on Goldbelt, Inc. property near Sawmill Cove. Kensington Mine officials say that highway development is not a requirement for the current operation of the mine. Now that the mine is open, however, the East Lynn Canal Highway and the West Lynn Canal Highway would make employment there somewhat more feasible for Skagway and Haines residents, who could commute to work via a ferry/highway route. The East Lynn Canal Highway would also facilitate purchases of occasional supplies in Juneau and make medevac of mine workers less weather-dependent. Most of the industrial supplies needed to operate the mine would be transported directly to the site by water, regardless of improved highway or ferry access to Juneau.

The following No Action Alternative discussion presents the unusual nature of the baseline alternative. Sections on the other alternatives, also below, address mainly the relative impacts of the alternatives on travel convenience, which is one aspect of quality of life. Judged purely by convenience—a combination of the number of opportunities to travel and the overall time needed to get from one point to another—the West Lynn Canal Highway is the most convenient, followed in descending order by the East Lynn Canal Highway, Alternatives 4B, 4A, 4D, 1B, and 4C.

3.3.2 Alternative 1 – No Action

Alternative 1, the No Action Alternative, is not synonymous with existing service. Rather, it incorporates some existing mainline ferry service and some new service—one of the new Day Boat ACFs will operate between Juneau and Haines, while the other operates between Haines and Skagway. One Day Boat ACF will homeport in Haines. It is anticipated to add 20 new jobs in Haines (two crews of 10 people). Some or all of the crew members and their families may relocate to Haines. The Day Boat ACFs will operate six days per week in the summer and a minimum of three days per week in the winter. The Day Boat ACFs would not operate on the seventh day in the summer because the mainline ferry would be on a similar schedule. In that respect, the social impacts of the No Action Alternative are not known. For example, ferry service is viewed as somewhat undependable. To an extent, this is a result of tidal, mechanical, navigation, and loading/unloading delays that may or may not affect the new Day Boat ACFs. As a result, perceptions of ferry dependability may change under Alternative 1.

In addition to the uncertain impacts of Day Boat ACF service, a number of other actions by the AMHS could affect traffic independent of the alternatives. These actions could alter the social impacts of ferry service. Among these are better reservations procedures and equipment that would make it easier to get reservations on short notice, better load management that would make it less likely that a particular voyage is sold out, and lower or special fares resulting from more efficient service (including better load management) or government policy.

3.3.3 Alternative 1B – Enhanced Service with Existing AMHS Assets

Alternative 1B would approximately double summer ferry service in Lynn Canal, extend the hours of operation for the reservations center service schedule, and reduce fares in Lynn Canal to cut travelers' costs and increase ridership. Alternative 1B would have a lower user cost than the No Action Alternative. All of the Lynn Canal communities would receive social benefits from Alternative 1B, as it provides direct access to Juneau, Haines and Skagway. Alternative 1B also has a lower user cost than the No Action Alternative.

3.3.4 Alternative 2B – East Lynn Canal Highway

For travelers between Haines and Juneau, the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) shows the East Lynn Canal Highway and the West Lynn Canal Highway are approximately equal with respect to travel time and user cost. Between Skagway and Juneau, the travel time for the East Lynn Canal Highway is approximately 2 hours faster than the West Lynn Canal Highway and approximately $14 less expensive. The East Lynn Canal Highway results in approximately equal convenience for all travelers, regardless of destination, since everyone must ferry from Katzehin to either Haines or

Skagway. The East Lynn Canal Highway has the lowest travel time and user cost of all the alternatives.

Because large groups tend to have less scheduling flexibility than individuals and small groups, the East Lynn Canal Highway is particularly attractive for students, cultural groups, the military, tour groups, and others who travel by bus or on the same schedule in multiple vehicles.

3.3.5 Alternative 3 – West Lynn Canal Highway

For travelers between Haines and Juneau, the 2014 Juneau Access *Traffic Forecast Report* (Appendix AA of the 2014 JAI Project Draft SEIS) shows the East Lynn Canal Highway and the West Lynn Canal Highway are approximately equal with respect to travel time and user cost. Between Skagway and Juneau, the West Lynn Canal Highway has a higher travel time and user cost ($14.37). With the West Lynn Canal Highway, travel between Skagway and Juneau requires two ferry connections which is similar to the No Action Alternative. The other alternatives only require ferry connection to make this trip. Both the East Lynn Canal Highway the West Lynn Canal Highway provide more convenient access at lower cost to users than the marine alternatives.

3.3.6 Alternatives 4A through 4D – Marine Alternatives

As with the No Action Alternative, perceptions of ferry dependability may change as AMHS assets are rebalanced to best serve Lynn Canal and the planned other procedure and equipment changes are implemented. Under Alternative 4, the perception of reliability, dependability, and convenience may be greatly enhanced. If that is the case, the social aspects of Lynn Canal communities would be improved.

4. References

Abrahamson, Mali. 2011. "Juneau at a Glance: Government, natural resources buoy capital city." *Alaska Economic Trends*, April 2011, pp. 4–9.

———. 2013. *Seafood Express: Rates and destinations effective September 14, 2011*.

Alaska Department of Commerce, Community, and Economic Development (ADCCED). 2010. *Alaska Taxable 2010: Municipal Taxation – Rates and Policies, Full Value Determination, Population and G.O. Bonded Debt*. Volume L. Available online at www.dced.state.ak.us/dca/osa/pub/10Taxable.pdf

———. 2011. *Alaska Taxable 2011: Municipal Taxation – Rates and Policies, Full Value Determination, Population and G.O. Bonded Debt*. Volume LI. Available online at http://www.dced.state.ak.us/dca/osa/pub/11Taxable.pdf

———. 2012. Alaska Department of Commerce, Community, and Economic Development Website. Available online at http://www.dced.state.ak.us/.

Alaska Department of Fish and Game (ADF&G). 2010. *Southern Southeast Chinook Salmon Enhancement.*

Alaska Department of Labor and Workforce Development (ADOLWD). 2010. "Industry and Occupational Forecasts 2008 to 2018." *Alaska Economic Trends*, September 2010.

———. 2011a. *Methods for the Alaska Population Estimates.* Available online at http://labor.alaska.gov/research/pop/estimates/data/AKPopEstMethods.pdf (accessed June 12, 2011).

———. 2011b. *American Community Survey: 2009-2011 3-Year Data for Juneau City and Borough*. Available online at http://live.laborstats.alaska.gov/cen/acsdetails.cfm?l=14&ay=20113&an=Juneau+City+and+Borough&ds=16

———. 2012a. *Population Estimates - Economic Regions and Boroughs/Census Areas, Population 2000–2012*. Available online at http://labor.alaska.gov/research/pop/popest.htm (accessed July 10, 2012).

———. 2012b. *Population Estimates - Cities and Census Designated Places (CDP's), 2000-2012*. Available online at http://labor.alaska.gov/research/pop/popest.htm (accessed June 2011).

———. 2012c. *Employment and Earnings Summary Reports for the Years 1980 through 2011.* Available online at http://labor.alaska.gov/research/pop/popest.htm.

———. 2012d. *Quarterly Census of Employment and Wages (QCEW).* Available online at http://laborstats.alaska.gov/qcew/qcew.htm.

———. 2013a. *City and Borough of Juneau Employers – Scheduled Air Transportation.* Available online at http://live.laborstats.alaska.gov/employers/emplist.cfm.

———. 2013b. *May 2012 Wages in Alaska, Alaska Statewide*. Available online at http://live.laborstats.alaska.gov/wage/index.cfm?at=01&a=000000#g47

Alaska Department of Natural Resources (ADNR). 2002. *Haines State Forest Management Plan*. Division of Mining, Land & Water. Division of Forestry.

———. 2011. *Forestry Strategic Plan – December 2011 Update*. Division of Forestry.

Alaska Department of Transportation and Public Facilities (DOT&PF). 2004. *Juneau Access Improvements, Supplemental Draft, Environmental Impact Statement, Appendix H-Socioeconomic Effects Technical Report*. Available online at http://dot.alaska.gov/sereg/projects/juneau_access/index.shtml.

———. 2006. *Juneau Access Project: Final Environmental Impact Statement.* Available online at http://www.dot.state.ak.us/stwdplng/projectinfo/ser/juneau_access.

———. 2011. *Downtown Juneau Traffic Map Enlargement, with AADT Counts.*

———. 2012. *2009 Alaska Traffic Crashes*. Division of Program Development, Transportation Information Group.

———. 2013. *2004 Southeast Alaska Transportation Plan Update*.

Alaska Energy Authority (AEA). 1992. *Feasibility Study – Lake Tyee to Swan Lake Transmission Intertie*. Prepared by R. W. Beck and Associates for Alaska Energy Authority.

———. 2012. *Southeast Alaska Integrated Resource Plan*. B&V Project #172744. Prepared by Black & Veatch for Alaska Energy Authority.

Alaska Marine Highway System (AMHS). 2002. *2002 Traffic Report*.

———. 2012. *Annual Traffic Volume Report*. Editions for 2008-2011. Available online at http://www.dot.state.ak.us/amhs/reports.shtml.

———. 2013. *Southeast Alaska/Inside Passage Passenger and Vehicle Fares – Summer 2013 through September 2013*. Available online at http://www.dot.state.ak.us/amhs/doc/fares/W12S13_SETariffs.pdf

Alaska Marine Lines (AML). 2013. Personal communication – telephone record of conversation between AML Customer Service and Jessica Conquest (HDR Alaska), January 3, 2013.

Alaska Seaplanes. 2013. *Flight/Activity Selection*. Available online at https://akseaplanes.trekres.com:4000/cgi-bin/mgrqcgi015

Associated Press. 2001. "Haines economy weathers loss of cruise ship traffic: Tax receipts increase, building permits on the rise." *Juneau Empire*, October 14, 2001. The Associated Press, New York, NY.

Bennett, Brittany. 2010. "Coeur Alaska sells half of Alaskan gold to China." *The Northern Light*, July 29, 2010.

Chilkat Indian Village. No date. *Tribal Government*. Available online at http://chilkatindianvillage.org/government.

City and Borough of Juneau (CBJ). 2003. *Project Summary Report: Downtown Tourism Transportation Study*. Prepared by Kittelson & Associates, Portland, OR. September 2003.

———. 2008. *Solid Waste Management Strategy – Final Report*.

———. 2010a. *Comprehensive Annual Financial Report*.

———. 2010b. *Downtown Juneau Parking Management Plan*. Ordinance 2010-21.

———. 2012a. *Juneau School District Budget – FY 2013*. Available online at http://www.juneauschools.org/uploads/0/district/administrative_services/our_budget/budget-fy2013-pfd-entire-document.pdf.

———. 2012b. *Willoughby District Land Use Plan – Juneau, Alaska*. Prepared Sheinberg Associates with the assistance of Northwind Architects, Walker Macy, and Kittelson Associates.

———. 2013. *Juneau Docks and Harbors: Welcome to Juneau!* Available online at http://www.juneau.org/harbors/factsheet.php.

City of Skagway. 1991. *Skagway Coastal Management Program*. May 1991.

Coeur Alaska, Inc. 2001. *Amended Plan of Operations for the Kensington Gold Project* Prepared for the USDA Forest Service, November 2001.

Decker, Page. 2012. Personal communication (telephone conversation) between Page Decker (Assistant Chief, Juneau Police Department) and Terri Morrell (HDR), September 4, 2012.

Ethridge, Richard. 2003. Telephone interview between Richard Ethridge (Fire Marshal, City and Borough of Juneau) and Scott Miller (Senior Consultant, McDowell Group), November 2003.

Fehd, Amanda. 2007. "Limits on air freight crimp fresh fish sales: Increase in exports could bring millions to regional economy." *Juneau Empire*, November 9, 2007.

Gerrish, John. 2012. Personal communication (e-mail) between John Gerrish and Northern Economics, Inc., June 2012.

Gilbertsen, Neal. 2002. "Industry Classification System Changes." *Alaska Economic Trends*, July 2002.

Goldbelt, Inc. 1996. *Echo Cove Master Plan*.

Haines Borough. 2010. *Haines Borough Financial Statements for the Year Ended June 30, 2010, Together with Independent Auditors' Report*. Available online at http://www.hainesalaska.gov/sites/default/files/fileattachments/finance/fy10_financial_statements.pdf

———. 2012. Haines Borough website. Available online at http://www.hainesalaska.gov/.

Haines Borough School District (HBSD). 2012. *FY2013 Approved Budget*. Available online at http://www.hbsd.net/cms/lib7/AK01001440/Centricity/Domain/3/FY13_HBSD_BUDGET.pdf.

Haines Chamber of Commerce. No date. *Community Profile*. Available online at http://haineschamber.org/profile

Haines Convention and Visitors Bureau (HCVB). 2012. *Haines: The Adventure Capital of Alaska*. Available online at http://haines.ak.us/ (accessed September 26, 2012).

Haines-Skagway Fast Ferry, LLC. 2012. Haines-Skagway Fast Ferry, LLC website. Available online at http://hainesskagwayfastferry.com/index.html (accessed January 3, 2013).

HDR Alaska, Inc. (HDR Alaska). 2013. *Alternatives – Ferry Fares Draft Memo to File*.

Hittle & Associates, Inc. 2003. *Southeast Alaska Intertie Study – Phase 2 Final Report*. Prepared for the Southeast Conference, December 12, 2003.

Internal Revenue Service (IRS). 2012. *IRS Announces 2012 Standard Mileage Rates, Most Rates Are the Same as in July*. Available online at http://www.irs.gov/uac/IRS-Announces-2012-Standard-Mileage-Rates,-Most-Rates-Are-the-Same-as-in-July

Jager, Dan. 2012. Personal communication between Dan Jager (Fire Marshall, Capital City Fire and Rescue) and Terri Morrell (HDR Alaska), September 27, 2012.

Juneau Convention and Visitors Bureau (JCVB). 2012. *Cruise Passenger Traffic to Juneau 1982-2012*.

Juneau Economic Development Council (JEDC). 2012. *The 2012 Juneau and Southeast Alaska Economic Indicators*. Available online at http://www.jedc.org/sites/default/files/02%20Juneau%20%26%20SE%20Overview.pdf

Juneau Taxi & Tours, Capital Cab, and Glacier Taxi & Tours. 2012. Personal communication (telephone record of conversation) between staff from Juneau Taxi & Tours, Capital Cab, and Glacier Taxi & Tours and Jessica Conquest (HDR, Alaska), November 14, 2012.

Lawson, Grant. 2013. Telephone record of conversation between Grant Lawson (Public Works Director, Skagway), Tim (Water Operator, Skagway), and Jessica Conquest (HDR Alaska) regarding public works upgrades, January 28, 2013.

Lowe, Gary. 2012. Personal communication – telephone record of conversation between Gary Lowe (Chief, Haines Police Department) and Terri Morrell (HDR Alaska), August 30, 2012.

Lundfelt, Charles. 1994. From 1994 *Juneau Access Socioeconomic Impact Report*. Fire Marshall, City and Borough of Juneau.

McCluskey, M. 2013. Personal communication (e-mail) from M. McCluskey (Skagway Convention and Visitors Bureau), January 17, 2013.

McDowell Group, Inc. (McDowell Group). 1994. *Juneau Access Household Survey*. Prepared for the Alaska Department of Transportation and Public Facilities, 1994.

———. 2000. *Economic Impact of the Cruise Industry in Southeast Alaska*. Prepared for the Southeast Conference.

———. 2001. *Survey on Juneau Visitor Center Needs*. Prepared for the City and Borough of Juneau, November 2001.

———. 2002a. *Haines Tourism Management Plan*. Prepared for the City of Haines. Available online at http://haines.ak.us/sites/default/files/Haines%20Tourism%20Management%20Plan%202002.pdf

———. 2002b. *The Capital Economy: An Assessment of the Economic Impact of a Capital Move on Southeast Alaska*. Prepared for the Alaska Committee, August 2002.

———. 2003. *Juneau Access Household Survey Results: Juneau, Skagway, Haines and Whitehorse*. Prepared for the Alaska Department of Transportation and Public Facilities.

———. 2006. *Juneau Tourism Community Opinion Survey 2006*. Prepared for the City and Borough of Juneau. November 2006.

———. 2008. *Skagway Community Survey*. Prepared for Sheinberg Associates. Appendix B of the *Municipality of Skagway Comprehensive Plan*.

———. 2009. *Economic Impacts of Douglas Island Pink and Chum, Inc*. Prepared for Douglas Island Pink and Chum, Inc. November 2009. Available online at http://www.adfg.alaska.gov/static/fishing/PDFs/hatcheries/dipac_report_09.pdf.

———. 2011a. *Haines Household Opinion Survey*. May 2011. Available online at http://hainesnews.net/wp-content/uploads/2011/06/Haines-Survey-Report-Final.pdf.

———. 2011b. *International Visitors to Alaska*. Alaska Visitors Statistic Program VI Executive Summary. Prepared for the Alaska Department of Transportation and Public Facilities.

———. 2012a. *Alaska Visitor Statistics Program VI, Summer 2011*. Prepared for the Alaska Department of Commerce, Community, & Economic Development, March 2012. Available online at http://commerce.alaska.gov/dnn/Portals/6/pub/TourismResearch/AVSP/2011and2012/Summer/02%202011AVSP-FullReport.pdf.

———. 2012b. Economic Impact of Visitors to Southeast Alaska, 2010-11. Prepared for Alaska Wilderness League, August 2012. Available online at http://www.alaskawild.org/wp-content/uploads/mcdowell_report_final.pdf.

Miller, T. 2012. Personal communication (email) between Terry Miller (Visitor Information Coordinator, JCVB) and Terri Morrell (HDR Alaska) regarding RV sites. September 5, 2012.

Municipality of Skagway. 2009. *2020 Comprehensive Plan*.

———. 2010. *Financial Report – June 30, 2010.* Available online at http://www.skagway.org/vertical/Sites/%7B7820C4E3-63B9-4E67-95BA-7C70FBA51E8F%7D/uploads/%7B8CDB0AFE-9F06-4752-A808-018677183DF9%7D.PDF

Northern Economics, Inc. (NEI). 2012. *Memorandum: Lynn Canal Market Segments*. October 25, 2012.

———. 2013. *Summary of Findings from Stakeholder Interviews.* Memorandum from M. Hartley (NEI) to File. March 8, 2013.

Northern Economics, Inc. (NEI) and Parametrix, Inc. 2011. *Southeast Alaska Mid-Region Access Traffic Projections*. Technical Memorandum. Prepared for the FHWA. Portland, OR. Available online at http://dot.alaska.gov/sereg/projects/mid_region/assets/MRA_Traffic_Memorandum.pdf

Pacific Seaflight. 2012. *Pacific Seaflight—Wingships*. Available online at http://pacificseaflight.com/.

Rasmussen, Dean. 2013. Personal communication between Dean Rasmussen (Federal Programs Supervisor, Alaska Department of Labor and Workforce Development, Research and Analysis Section) and Jessica Conquest (HDR Alaska), January 24, 2013.

Research and Innovative Technology Administration (RITA). 2013a. *Haines Airport, Scheduled Services except Freight/Mail*. Bureau of Transportation Studies.

———. 2013b. *Skagway Airport, Scheduled Services except Freight/Mail*. Bureau of Transportation Studies.

Retherford, Brittany. 2007. "Skagway Air to shut down after 43 years." *Juneau Empire*, June 21, 2007. Available online at http://juneauempire.com/stories/062107/sta_20070621021.shtml

Rural Community Assistance Partnership (RCAP). 2004. *Still Living Without the Basics in the 21st Century: Analyzing the Availability of Water and Sanitation Services in the United States*. Available online at http://win-water.org/reports/RCAP_full_final.pdf

Sandhofer, Ted. 2012. Personal Communication between Ted Sandhofer (U.S. Forest Service), and Donette Miranda (HDR Alaska), September 27, 2012.

Sexton, Dave. 1994. From 1994 *Juneau Access Socioeconomic Impact Report*. Skagway Police Chief.

Skagway Convention and Visitors Bureau. 2012. *Skagway Visitor Stats, 1983-2011*.

Skagway Development Corporation (SDC). 2013. *Skagway, Alaska: Demographics & Workforce*.

Skagway School District. 2012. *FY11/12 Budget, Revision #2*. June 30, 2012. Available online at http://www.skagwayschool.org/UserFiles/Servers/Server_973386/File/Board%20Meetings/2012-2013/Board%20Packet/August/FY11-12%20Final%20Budget%20Revision%202.pdf

Southeast Strategies and Dean Runyan Associates. 2000. *Skagway Economic Impact Study*. Prepared for the City of Skagway.

Spurrier, Dennis. 2003. Telephone interview between Dennis Spurrier (Police Chief, Skagway) and Scott Miller (Senior Consultant, McDowell Group), November 2003.

State of Alaska. 2010. *FY 2011 Capital Budget, TPS Report 53880v2*. Skagway – Municipal Wastewater Treatment Facility Improvements Due to Seasonal Impacts.

———. 2014. *Statistics & Reports – Enrollment Totals: as of October 1 of each year*. Alaska Department of Education & Early Development. http://education.alaska.gov/Stats/

Stuart, Jilia. 2012. Personal Communication between Jilia Stuart (Chief Fiscal Officer, Haines Borough) and Northern Economics, Inc., August 3, 2012.

U.S. Army Corps of Engineers (USACE). 2010. *Tons by Community*. Available online at http://navigationdatacenter.us/wcsc/webpub10/Part4_Ports_tonsbycommCY2010.HTM.

U.S. Bureau of Economic Analysis (BEA). 2010. *Income – City and Borough of Juneau*.

U.S. Census Bureau. 2010a. *2010 Census*.

———. 2010b. *American Community Survey*. American FactFinder.

———. 2013. *2007-2011 American Community Survey 5-Year Estimates*. American FactFinder. Available online at http://www.census.gov/acs/www/data_documentation/2011_release/ (accessed January 29, 2013).

U.S. Forest Service (USFS). 2006. *FSM 2400 – Timber Management, Chapter 2430 – Commercial Timber Sales.* U.S. Forest Service Manual Supplement No. R-10 2400-2006-2. November 17, 2006.

Vrabec, Terry. 2012. Personal communication (telephone call) between Terry Vrabec (Deputy Commissioner, Alaska Department of Public Safety) and Terri Morrell (HDR Alaska), September 5, 2012.

Watt, Rory. 2013. Telephone record of conversation between Rory Watt (City Engineering Director, City and Borough of Juneau) and Jessica Conquest (HDR Alaska) regarding South Franklin St. Widening Project, March 18, 2013.

Wings of Alaska. 2013. *SeaPort Airlines Availability*. Available online at http://seaport.booksecure.net/...ar=2013&subwebfaretype=1&isavailforpackages=False&BookingID=b5fe3552-18ad-480a-bfd0-b1b4b7bb4aa4

Yukon Department of Tourism and Culture. 2012. *Tourism Statistics and Figures*. Available online at http://www.tc.gov.yk.ca/Stats_and_Figures.html

Zigarlick, Wayne. 2012. Letter from Wayne Zigarlick (General Manager, Coeur, Alaska) to Alaska Energy Authority, March 26, 2012. Available online at http://www.akenergyauthority.org/SEIRP/comments2/SEIRP%20Comments_Coer%20Kensington%20Gold%20Mine_W%20Zigarlick.pdf (accessed October 24, 2012).