

Appendix A
Socioeconomic Household Survey
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Ketchikan-Shelter Cove Road

Prepared for the

Alaska Department of Transportation and Public Facilities

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Prepared by



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Abbreviations

AADT	Average Annual Daily Traffic
ADCCED	Alaska Department of Commerce, Community, and Economic Development
ADNR	Alaska Department of Natural Resources
ADOL&WD	Alaska Department of Labor and Workforce Development
ADOT&PF	Alaska Department of Transportation and Public Facilities
AMHT	Alaska Mental Health Trust
ATV	All-terrain vehicle
CDS	Coordinated Data System
CEDS	Comprehensive Economic Development Strategy
CFEC	Commercial Fisheries Entry Commission
CIS	Community Information Summaries
KGB	Ketchikan Gateway Borough
KPU	Ketchikan Public Utilities
NEPA	National Environmental Protection Act
O&M	Operations and Maintenance
ROW	Right of Way
SEAPA	Southeast Alaska Power Agency
TLO	Trust Land Office
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USFS	U.S. Department of Agriculture Forest Service

1 Introduction

The proposed Shelter Cove Road would connect Ketchikan to Shelter Cove on Carroll Inlet through upgrades of existing roads and construction of new segments. It is anticipated that an environmental assessment will be sufficient to document the environmental and socioeconomic effects of the proposed road improvements. This report provides socioeconomic data and analysis intended to support the development of a purpose and need statement and an environmental assessment for a proposed road on Revillagigedo Island from Lake Harriet Hunt to Shelter Cove.

This report is organized into six major sections:

- **Section 1** provides a brief introduction to the proposed Shelter Cove Road.
- **Section 2** provides a socioeconomic profile of the Ketchikan Gateway Borough.
- **Section 3** provides supporting information to develop a purpose and need statement for the road.
- **Section 4** discusses existing land uses and potential land use impacts from construction of the road.
- **Section 5** discusses the economic impacts of the road's construction and annual maintenance activities.
- **Section 6** discusses potential secondary and cumulative effects arising from development of the road.

2 Socioeconomic Profile of the Ketchikan Gateway Borough

This section provides an overview of the local economy of the Ketchikan Gateway Borough (KGB) and the City of Ketchikan. The development of a new road connecting Lake Harriet Hunt to Shelter Cove would likely impact the economy of the Borough and the City of Ketchikan; thus, developing an understanding of the current economic conditions is important for evaluating the potential future impacts of the proposed development. The Ketchikan Gateway Borough is located in Southeast Alaska and encompasses an area of 1,219 square miles. The 2008 population of KGB is estimated to be 12,993 individuals. Ketchikan, the largest city, has a population of 7,508 and accounts for close to 60 percent of the Ketchikan Gateway Borough population.

The following sections cover the population and economy of the KGB, brief histories of the communities in the Borough, and a summary of the economic components of local planning efforts.

2.1 History of the Ketchikan Gateway Borough

The history of Ketchikan dates back as far as the 1880s when it was a small community dependent upon the fishing trade. Ketchikan became an important trading outpost as the mining industry grew, and later, as mining declined, the timber industry took off with the construction of the Ketchikan Pulp Mill. In the late 1980s the timber industry began to decline; however, other sectors of the economy were able to offset job losses and the employment level increased until the closure of the pulp mill in 1997 (Durbin, 1997). The closure of the Ketchikan Pulp Company's mill resulted in a loss of 558 manufacturing jobs, or 54 percent of the total manufacturing job sector from 1995 to 1999. (Miller, 2005) The significant loss of manufacturing jobs was only slightly mitigated by increases in other economics sectors. Today, the timber industry is almost non-existent and Ketchikan is now focused on the growing tourism industry. The number of cruise ship visitors visiting Ketchikan has steadily increased from 379,000 in 1994 to over 900,000 in 2008 (see Section 2.3.3).

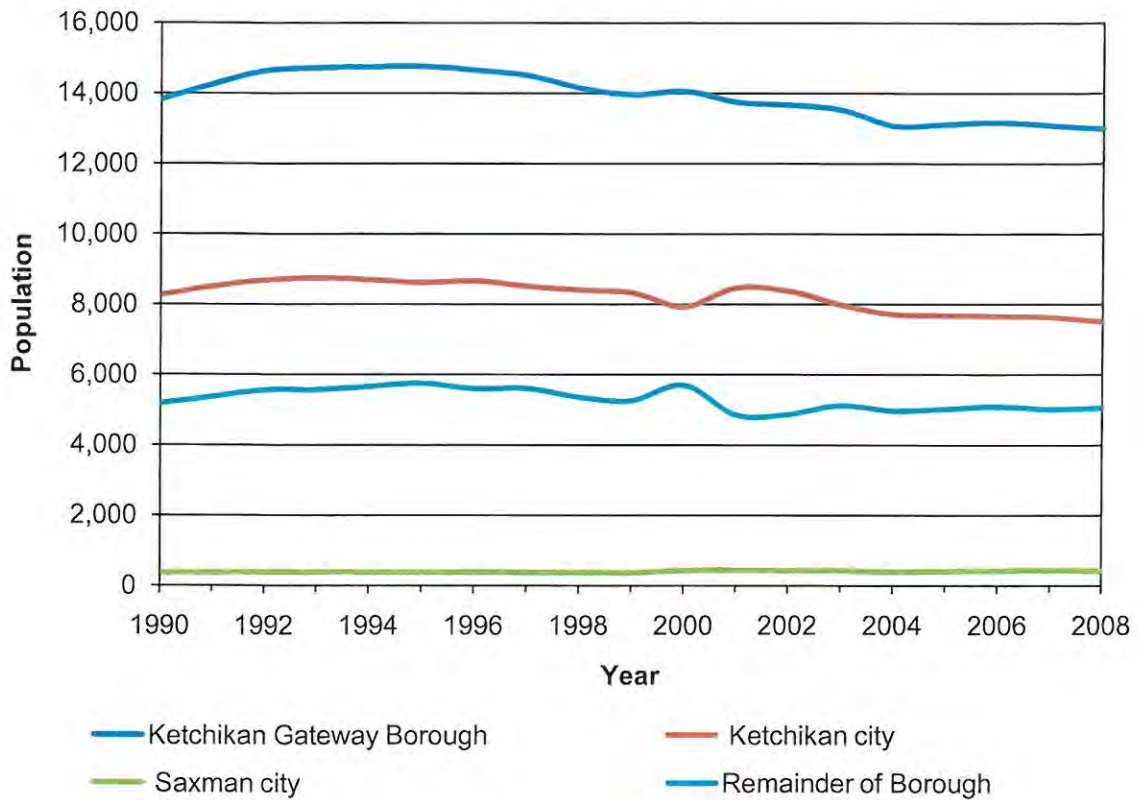
The City of Saxman, the only other city in the borough, is a small community located about three miles south of Ketchikan. It has a total population of about 425 individuals, many of whom are Tlingit. The community was founded in the 1880s and was incorporated as a city in 1929. The socioeconomic data provided in this section focuses on Alaska, the Ketchikan Gateway Borough, and the City of Ketchikan. However, the household survey provides information about all residents of the borough, including residents of Saxman as well as other unincorporated areas.

2.2 Demographics of the Ketchikan Gateway Borough

2.2.1 Population

In 1995, the Ketchikan Gateway Borough population peaked at 14,764 individuals. Thereafter the population has continued to steadily decline at an annual average rate of one percent. The city of Ketchikan is the largest community in the Ketchikan Gateway Borough and accounts for close to 60 percent of the population. Figure 1 shows the populations of the Ketchikan Gateway Borough, City of Ketchikan, and City of Saxman for 1990 through 2008.

Figure 1. Population Growth Trend, Ketchikan Gateway Borough, City of Ketchikan, City of Saxman, and Remainder, 1990 to 2008



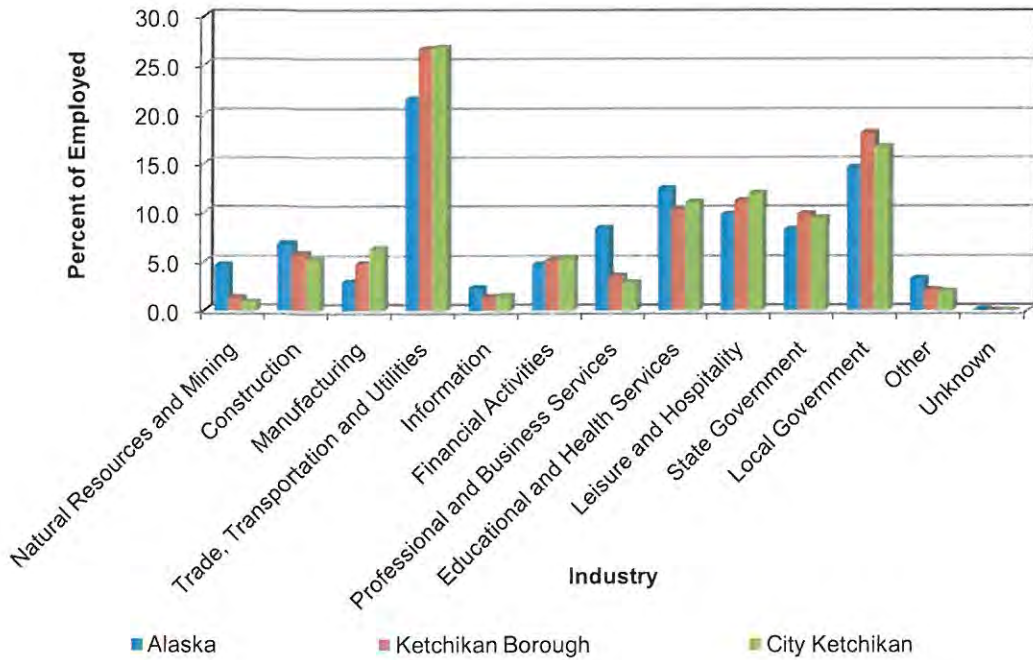
Source: Alaska Department of Labor and Workforce Development

2.2.2 Employment

The leading industry for employment in the Ketchikan Gateway Borough and Ketchikan City is trade, transport, and utilities (Figure 2.) In 2008, that sector was responsible for one-fourth of both the borough and Ketchikan city employment. The next leading industry is local government, which accounts for just over 15 percent of total employment. Figure 2 shows employment by industry sector for the State of Alaska, the KGB, and the City of Ketchikan.

A significant amount of seasonal hiring takes place in Ketchikan due to the tourism and construction-related activities that take place during the summer. Much of this seasonal employment is captured in the local government sector, though the full extent of the employment effects are hidden by the fact that the chart shows annual average employment.

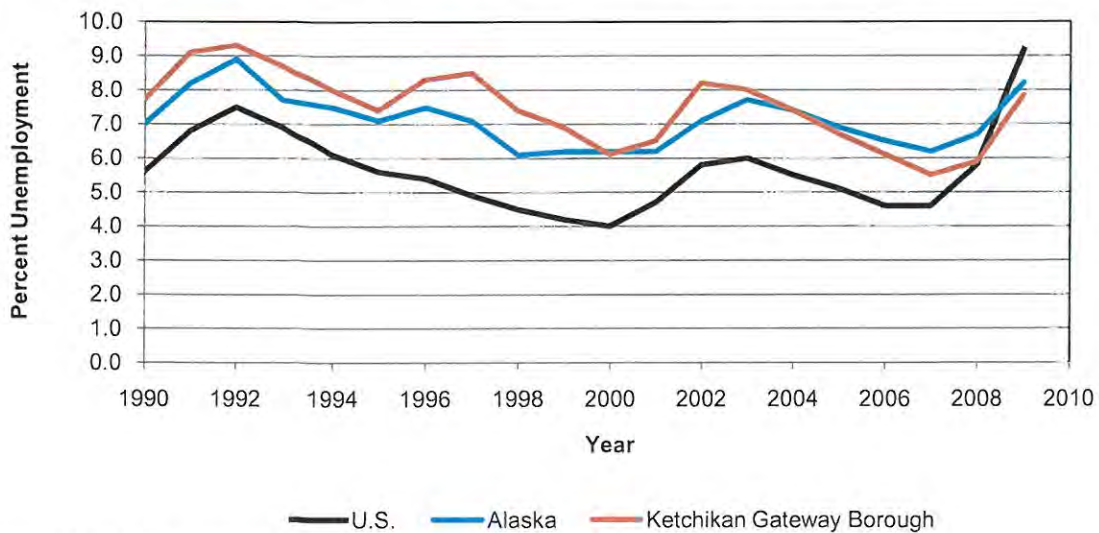
Figure 2. Employment by Industry for Alaska, the KGB, and the City of Ketchikan, 2008



Source: ADOL&WD, Northern Economics analysis

Figure 3 shows the unemployment rate for the United States, Alaska, and Ketchikan Gateway Borough. Until 2009, the unemployment rate for Alaska and the KGB has tended to be one or two percentage points higher than the national average. The unemployment rate for 2009 is an average of the unemployment rate from January to August of 2009.

Figure 3. Unemployment Rate for Alaska and Ketchikan Gateway Borough 1990 to 2009



Source: ADOL&WD and Northern Economics analysis

The Borough's largest employers in 2008 were the State of Alaska, Ketchikan Gateway Borough School District, the City of Ketchikan, and Peace Health-Ketchikan General Hospital, as shown in Table 1.

Table 1. Top Employers for Alaska, Ketchikan Gateway Borough, and the City of Ketchikan, 2008

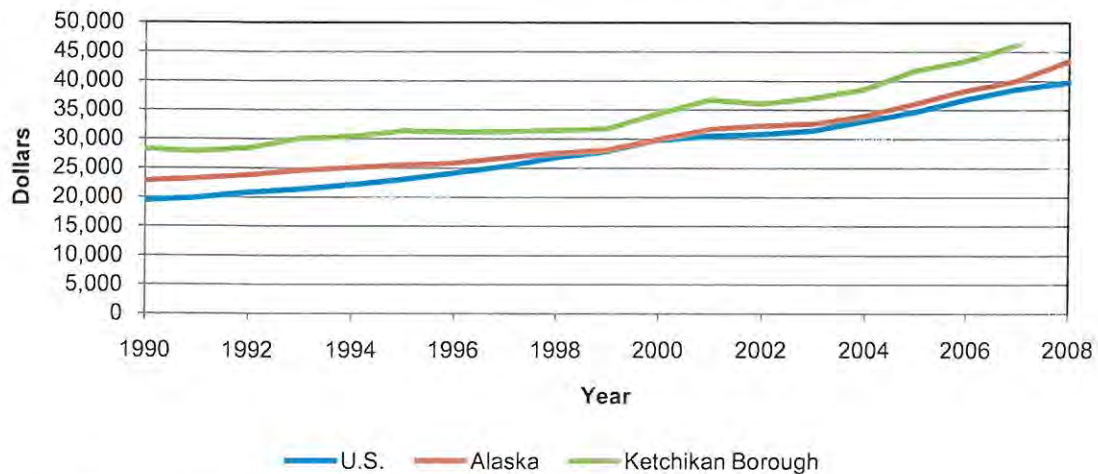
Rank	Alaska	Ketchikan Gateway Borough	City of Ketchikan
1	State of AK (excludes U of A)	State of AK (excludes U of A)	State of Alaska (excludes U of A)
2	Anchorage School District	Ketchikan Gateway Borough School District	Peace Health-Ketchikan General Hospital
3	University of Alaska	City of Ketchikan	City of Ketchikan
4	Providence Hospital	Peace Health-Ketchikan General Hospital	Ketchikan Gateway Borough School District
5	Safeway Inc	Ketchikan Gateway Borough	Ketchikan Indian Corp
6	Municipality of Anchorage	Ketchikan Indian Corp	Ketchikan Gateway Borough
7	Wal-Mart Associates Inc	Wal-Mart Associates Inc	Wal-Mart Associates Inc
8	Fred Meyer Stores Inc	Safeway Inc	Safeway Inc
9	Fairbanks North Star School District	Community Connections Inc	Alaska Ship & Drydock Inc
10	Mat Su Borough Schools	Williams Inc.	Williams Inc.

Source: ADOL&WD, Alaska Local and Regional Information

2.2.3 Income

Figure 4 compares the per capita personal income of the United States to the State of Alaska and Ketchikan Gateway Borough for 1990 to 2008. Per capita personal income in Alaska and the KGB has been significantly higher than the national average for the entire period. The Ketchikan Gateway Borough per capita personal income has been on average 20 to 30 percent higher than the national average.

Figure 4. Per Capita Personal Income, Alaska and KGB, 1990-2008



Source: U.S. Dept. of Commerce, Bureau of Economic Analysis, Northern Economics analysis

2.3 Economic Profile of the Ketchikan Gateway Borough

The information in this section provides profiles for the Ketchikan Gateway Borough of several industry sectors including fisheries, timber, tourism, transportation infrastructure, and utilities.

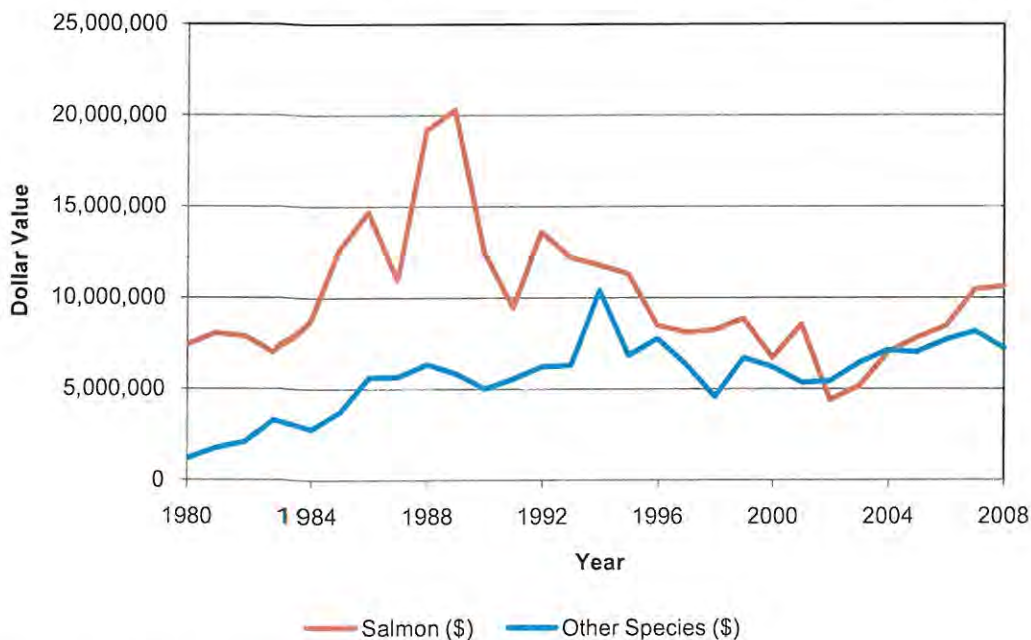
2.3.1 Fisheries

Since Ketchikan's establishment as a community, fishing has been an integral part of its economy. Today, it is known for its abundance of fish and people travel from all over the world to fish in Southeast Alaska.

Commercial fishing is a major industry in Ketchikan. Approximately 300 residents hold commercial fishing permits. There are two major components of commercial fishing—harvesting and processing, and there are several processing plants and cold storage facilities that allow much of the harvested fish to be processed in Ketchikan. The major types of harvested fish include: salmon (pinks, chums, silvers, reds, kings), halibut, sablefish, and other ground fish. There are also a variety of shellfish harvested in this area including Dungeness crab, shrimp, geoducks, sea urchins and sea cucumbers. NOAA Fisheries listed Ketchikan as the 20th port by volume and 28th port by value in 2008 (NOAA Fisheries, 2009). For data confidentiality reasons, this list does not include ports with three or fewer companies.

Figure 5 shows the value of harvested fish by two categories. The first category, salmon, includes five types of salmon. The other species category includes crab, halibut, herring, sablefish and other finfish, ground fish, and shellfish. The value of salmon harvested varies greatly year to year depending on the number of pounds caught and the demand for salmon. Although there is some variance in the value of the other species category, it has tended to increase over time.

Figure 5. Ex-Vessel Value of Harvest Species for Ketchikan Gateway Borough, 1980 to 2008



Source: CFEC (2009), Northern Economics analysis

The following table shows that the number of commercial fishing boats targeting salmon has steadily declined from their high in the 1980s. The number of other commercial harvesting vessels has also decreased. In general, there has tended to be an increase in the pounds caught in both categories. The value of salmon harvested has increased since the early 1980s although the value remains well below the peak harvest value reached in 1989. The value of other species has also trended up over time although it has been relatively flat for a number of years.

Table 2. Ex-Vessel Value of Harvest Species for Ketchikan Gateway Borough, 1980 to 2008

Year	Number of Fishing Vessels		Pounds Caught		Value	
	Salmon	Other Species	Salmon	Other Species	Salmon	Other Species
1980	414	170	12,425,643	3,510,941	7,413,657	1,162,402
1981	334	191	13,270,475	3,964,080	8,048,180	1,748,904
1982	313	247	15,427,406	5,594,386	7,890,547	2,070,678
1983	329	318	18,760,313	5,250,616	6,978,002	3,304,082
1984	299	307	18,467,398	6,726,900	8,705,944	2,781,535
1985	287	312	29,944,210	6,067,471	12,623,452	3,726,985
1986	284	329	35,320,293	9,042,089	14,696,331	5,630,156
1987	269	401	12,740,057	8,826,957	10,939,134	5,663,713
1988	273	420	15,211,817	12,798,658	19,143,009	6,334,632
1989	243	390	38,968,350	13,296,904	20,281,818	5,834,280
1990	229	367	22,129,357	9,269,130	12,472,702	5,004,665
1991	235	379	29,090,585	9,120,452	9,437,425	5,546,553
1992	229	384	25,024,425	9,785,198	13,577,255	6,230,095
1993	226	323	32,990,948	10,509,700	12,187,162	6,312,389
1994	191	346	29,640,128	8,128,922	11,773,048	10,409,028
1995	191	368	33,816,576	5,580,834	11,307,968	6,824,019
1996	168	348	43,523,044	7,138,172	8,467,656	7,746,774
1997	164	346	24,124,269	6,478,258	8,093,456	6,331,240
1998	154	358	34,335,037	6,781,810	8,239,165	4,568,053
1999	153	331	35,978,095	7,413,853	8,842,031	6,699,788
2000	129	307	22,447,427	5,501,227	6,700,038	6,214,624
2001	125	276	35,795,183	5,717,770	8,512,603	5,369,203
2002	118	283	24,719,940	6,561,283	4,381,890	5,438,016
2003	121	305	29,314,941	6,043,212	5,152,414	6,425,937
2004	114	271	31,249,143	6,907,408	7,005,787	7,110,433
2005	127	227	33,645,878	10,929,438	7,786,964	7,016,293
2006	141	226	20,057,949	5,840,295	8,428,236	7,688,766
2007	139	224	28,766,846	5,089,783	10,434,509	8,151,506
2008	135	215	19,673,707	5,069,867	10,606,421	7,226,637

Source: CFEC (2009), Northern Economics analysis

2.3.2 Timber

Although the timber industry has significantly declined since the closure of the Ketchikan Pulp Mill in the late 1990s, it still has a presence in the Ketchikan Gateway Borough. Sealaska, the regional native corporation, continues to export logs from its lands near Hydaburg, on Prince of Wales Island, while two mills saw lumber.

Viking Lumber, located just south of Klawock on Prince of Wales Island, saws lumber and produces export wood chips. Seley Corporation's sawmill on Gravina Island operates when supplies permit, though it has not operated in 2009 due to lack of logs. It continues to sell wood chips and advertises firewood sales, including containers of split firewood suitable for transport within the region. The mill is currently looking at moving the fuel-wood industry (Associated Press, 2009).

These are medium-sized mills; there are a number of smaller ("close to commercial") mills that operate on an erratic basis, as opportunities arise. Cedar shake and shingle mills are one example, as is the former Louisiana Pacific mill at Metlakatla but it closed when Louisiana Pacific closed its pulp mill. The Viking Lumber and Seley Corporation mills are representative medium-sized mills, but there are smaller and less active mills, operating with much smaller staffs, in the area.

Logging in Southeast Alaska is generally not as profitable as similar operations in the Pacific Northwest due to road construction cost, the high cost of supplies, and limited access, as well as the relatively low value of western hemlock logs and lumber, a species that constitutes approximately 75 percent of the forest. Also, major export markets in Southeast Asia have shifted purchases from Alaska and the Pacific Northwest to logs supplied from Russia and plantation forests in Australia and New Zealand.

The Ketchikan Wood Testing Research Center, located in Ketchikan, along with its partnerships with Wood Utilization Research Centers, helped increase the value of three Alaskan tree species by creating new lumber grading specifications. These grades should increase demand for yellow cedar, western hemlock, and Sitka spruce with dense growth typical of old-growth forests.

Overall, log supply from the largest national forest in the US, the Tongass National Forest, continues to face environmental appeals and litigation that reduce and delay potential log supply for ongoing forest production operations.

2.3.3 Tourism

The tourism industry is very important to Ketchikan. Ketchikan saw over 900,000 cruise ship visitors and another 50,000 independent travelers last year. Ketchikan has many tourism assets, including national parklands, native culture, and one of the most robust fishing runs in the state.

Misty Fords National Monument is one of Ketchikan's tourism assets. It was established in 1978 by President Carter and encompasses an area of 2.2 million acres, making Misty Fords is one the largest national monuments in the United States. The area is home to a plethora of animals including mountain goats, black bears, brown bears, moose, wolves, wolverines, otters, sea lions, harbor seals, and killer whales. These public lands offer visitors unparalleled opportunities for wildlife viewing, kayaking, rafting, sport fishing and camping and feature a variety of unique archaeological sites.

In addition to the variety of recreational opportunities, the area has a number of cultural assets as it is home to three indigenous Pacific Northwest Indian Tribes: Tlingit, Haida, and Tsimshian. Cultural attractions in the community include Southeast Alaska Discovery Center, Totem Heritage Center, and the Tongass Historical Museum. Visitors have the opportunity to see carvers sculpt totem poles in the same manner as their ancestors did or view performances of traditional native dances.

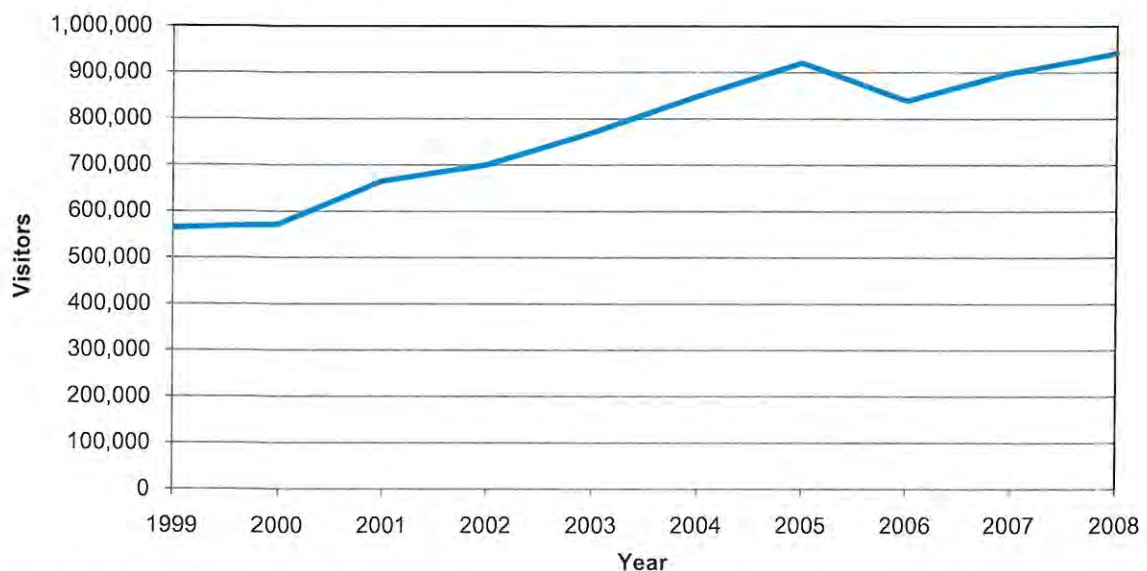
2.3.3.1 Sport Fishing

Ketchikan is referred to as the “Salmon Capital of the World” and is known for its wealth of fish. Currently, several fishing charter companies operate out of Ketchikan. There are over 80 cabins available for both fresh and salt water fishing. The U.S. Forest Service maintains these cabins and recommends early reservations due to high demand.

2.3.3.2 Cruise Ship Visitors

Ketchikan is the first Alaska port of call for northbound cruise ships originating in British Columbia or the west coast of the United States. Ketchikan has seen a steady growth in its cruise ship visitors over time, as shown in Figure 6. After a decline in ridership in 2006, the 2008 cruise ship visitor count exceeded the previous high point set in 2005.

Figure 6. Cruise Ship Visitors to Ketchikan 1999 to 2008



Source: Ketchikan Visitors Bureau, Northern Economics analysis

2.3.4 Transportation Infrastructure

Aviation is the principal means of transporting people to communities in the KGB. Mail and perishable food are typically transported by air because of a lack of interconnected roads. Dry goods, fuel, and building materials that are heavier and bulkier tend to be barged into communities. Ketchikan is a major transportation hub for the surrounding communities. The city provides a central port for the Southeast region and a state-run international airport. The Ketchikan International Airport is located on Gravina Island. Transportation to and from the island is provided by ferry. The airport is equipped with a paved 7,500 foot long runway that is capable of landing large commercial planes. There are numerous taxi airlines that provide air transport to the surrounding communities. Another transportation option is offered by the Alaska Marine Highway System (AMHS). The AMHS offers ferry services between various communities in Southeast Alaska as well as service to Bellingham, Washington.

2.3.5 Utilities

Communities in the Ketchikan Gateway Borough primarily derive water from dam reservoirs or individual wells. The City of Ketchikan has a dam reservoir located on Ketchikan Lake where water is collected. It is then purified at the Mountain Point facility and piped to homes within the community. The majority of homes in Ketchikan are fully plumbed. Sewage is piped to the treatment facilities also located at Mountain Point. Power is purchased from the Swan Lake Hydro Facility's hydroelectric and diesel power plants. Refuse is either processed at the Deer Mountain Landfill or transported out of state by ships. Deer Mountain Landfill facilities have an incinerator, a balefill system, a recycling and resource re-use, and a hazardous waste collection system (ADCCED, 2009).

3 Purpose and Need for the Ketchikan-Shelter Cove Road

This section provides supporting information for development of the purpose and need statement for the Shelter Cove Road.

3.1 Approach

Northern Economics has used interviews, a household survey, and published documents to assess the purpose and need, land use impacts, economic impacts, and secondary and cumulative effects for the proposed Shelter Cove Road.

Interviews of major land owners in the study area are used to determine the existing land uses and anticipated changes with a road. Major land owners include the Ketchikan Gateway Borough, City of Ketchikan, Cape Fox Corporation, U.S. Forest Service, the Alaska Mental Health Trust Authority (commonly referred to as The Trust), and Alaska Department of Natural Resources. Meeting notes from the land owner interviews are included in Appendix A.

The primary source of demand information for the Shelter Cove Road is a telephone household survey. The survey was developed to gather information about each household, its current use of the areas through which the Shelter Cove Road would travel, and its anticipated use of the Shelter Cove Road if it were to be built.

Published documents were used to identify other land uses and planned projects in the study area. The documents included governmental publications focused on land use and plans for the study area.

3.2 Summary of Purpose and Need Findings

The household survey identified an unmet need for access to the lands through which the proposed Shelter Cove Road would travel. Based on current use of the study area and anticipated changes in use if the road were to be constructed, there is an unmet need for access to recreational and subsistence-related activities in the area. The projected increase in the number of trips to each of the four areas (see Section 3.4.1) ranges from 61 percent to 67 percent, as measured by Annual Average Daily Traffic.

Current activities taking place within the study area include sightseeing, hiking, camping, hunting, and off-road vehicle use. If the Shelter Cove Road were constructed, survey respondents indicated a slight shift in the activities they would enjoy in the study area: sightseeing, camping, hiking, freshwater fishing, and hunting.

The following sections summarize the demand for the Shelter Cove road from residential, commercial, and government perspectives.

3.2.1 Recreational/Household Demand

There are a variety of existing activities in the area that would become available or enhanced by the road, including hiking, hunting, fishing, off-roading, and snowmachining. The Shelter Cove road would provide more economical access to recreational opportunities, especially for those who do not own a boat. The Shelter Cove road would also allow access to private parcels along George Inlet, including land sold by ADNR and Cape Fox shareholder lots. This would increase the value of these private lands, and could potentially increase tax revenues to the Ketchikan Gateway Borough.

Residents have indicated an interest in simply having additional roads to drive and access to additional land for recreation purposes.

3.2.2 Commercial/Government Uses

Cape Fox Corporation offers recreational tourism activities on its land. With better road access, it could expand recreational offerings and possibly sell recreational use permits for non-shareholders to use Cape Fox lands. The road would open up more areas for commercial recreation and tour activities for visitors. It would also provide more access to timber resources and more efficient storage and transportation of timber harvested near the ADOT&PF right of way (ROW), though ADOT&PF would not allow landings or storage within the ROW for operational and safety concerns. The road would provide increased access to the power lines from the Swan Lake hydropower facility, reducing the cost of maintaining the lines, and would also provide better access to the substation planned to be constructed at Shelter Cove.

3.3 Interviews with Entities with Land in the Study Area

The following sections provide a summary of interviews that took place with entities owning or managing land in the study area. Meeting notes from the land owner interviews are included in Appendix A.

3.3.1 Ketchikan Gateway Borough

Northern Economics, Inc. staff met with the Ketchikan Gateway Borough's (KGB) Borough Manager, Planning Director, Mapping Technician, and Economic Development Manager (Bockhurst, 2009; Williams, 2009; Pomplun, 2009; and Hayden, 2009). The conversations primarily focused on resources and published studies available from the KGB and other entities. A number of resources noted the remote port facilities located at Shelter Cove and the general interest from the community to see the proposed road be constructed.

3.3.2 City of Ketchikan

Northern Economics, Inc. staff met with the Assistant City Manager/Assistant Ketchikan Public Utilities (KPU) General Manager and an Engineering Technician for KPU (Martin, 2009 and Adams, 2009).

The City of Ketchikan staff mentioned that there are some tourism activities that take place near the north end of the road from Ketchikan. The Cape Fox Corporation does canoe trips at Harriet Hunt Lake. There also may be some hunting guides.

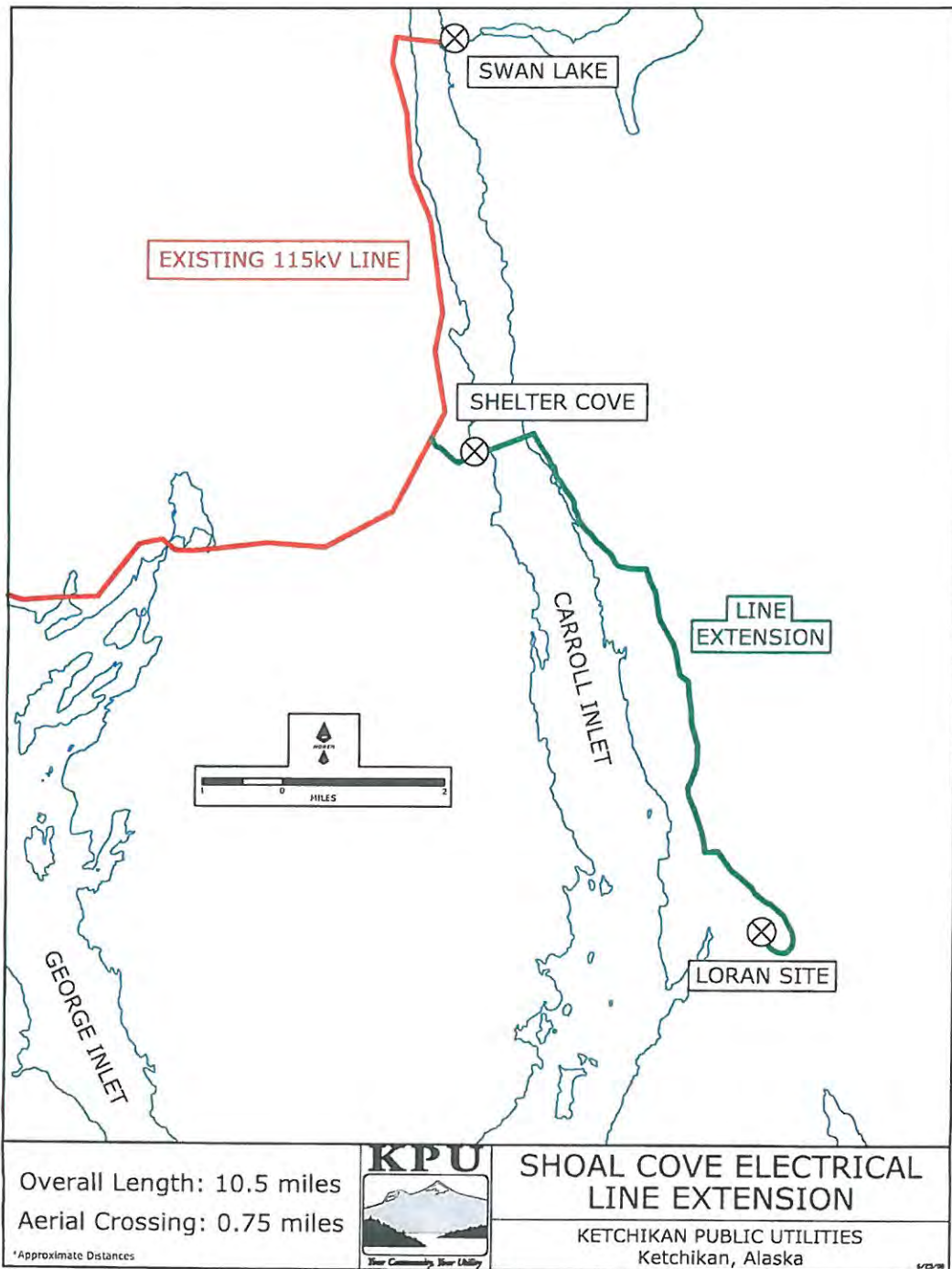
Staff suggested that the Shelter Cove Road could provide better access to some sections of electrical transmission line from the Swan Lake hydroelectric facility, improved recreational activities, access to private lots, and better access to hunting areas. Road access would also mean that campgrounds and recreational fishing areas (salmon and trout) would be improved.

The preliminary location for the proposed Shelter Cove substation is shown in Figure 7 (KPU, 2008). If the substation is built, construction would take place in the summer of 2012. However, it is not certain if funding for the substation will be available or if other factors will influence it (Adams, 2009).

According to staff at the Southeast Alaska Power Agency (SEAPA), they do not have any current plans to construct a substation in the Shelter Cove area, nor does the agency have any planned generation or transmission projects in the vicinity of the proposed Shelter Cove Road (Carlson, 2010). As of

March 1, 2010, Ketchikan Public Utilities was in the process of closing out the contracts for design and permitting of the line to the U.S. Coast Guard (USCG) LORAN Station, followed by plans to close out the overall contract with the USCG. Officials at KPU did not think the USCG had any further plans to build the line (Adams, 2010).

Figure 7 . Preliminary Location of Shoal Cove Electrical Line Extension



Source: KPU (2008)

Along with the increased use associated with development of the road, the staff also mentioned concerns they had heard about refuse being dumped in remote areas.

3.3.3 Cape Fox Corporation

Northern Economics, Inc. staff met with the Chief Operating Officer of the Cape Fox Corporation (Landis, 2009).

The COO said that the major land owners along the proposed road corridor are Cape Fox Corporation, U.S. Forest Service, Alaska Mental Health Land Trust, and Alaska Department of Natural Resources. Cape Fox has a tourism operation on George Inlet, with activities including stream fishing, hiking, and Adventure Carts (like dune buggies) for off-road trips to Mahoney Lake.

The proposed road may affect some activities on Cape Fox land. The preferred option would follow the existing road toward Cape Fox's operation on George Inlet and through land used by Cape Fox shareholders for subsistence, wood gathering, and other activities. A map showing land ownership and the preferred option is found in Figure 8.

There are stakeholder lots surrounding George Inlet, and a road to Shelter Cove would provide access to those lots (or to existing roads from Shelter Cove that access those lots). There are also parcels sold in an ADNOR land sale that would be accessible at the head of George Inlet.

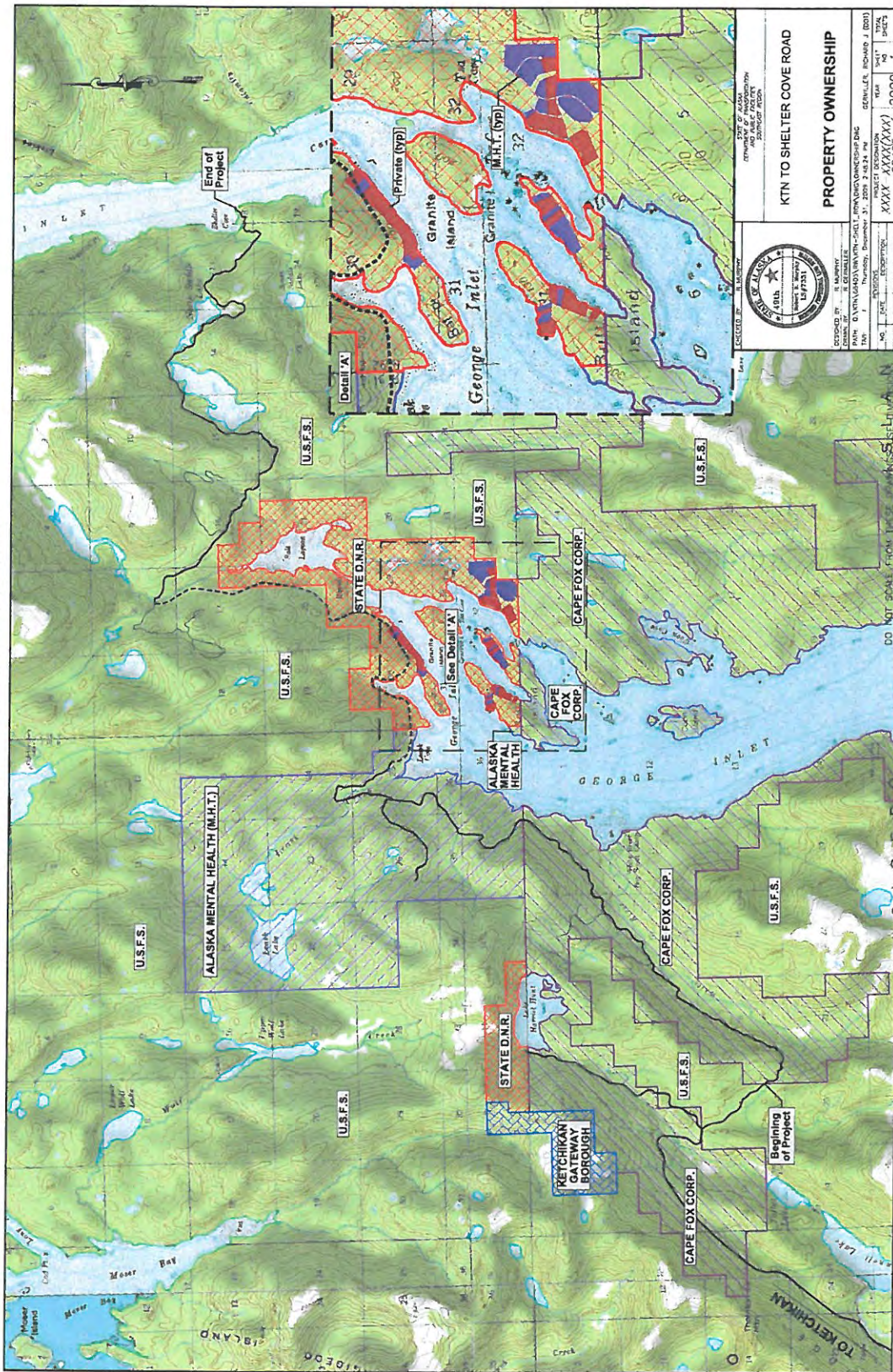
The road would provide access to timber resources and allow for more efficient storage and transportation of harvested timber. While the road would not accelerate future timber sales nor be necessary to proceed with timber activities, the road would be a factor in the decision process and would facilitate timber harvests once the decision had been made to proceed. ADOT&PF would not allow landings or storage within the ROW for operational and safety concerns, though efficiencies could result from logging roads that access the Shelter Cove Road. The U.S. Forest Service has held small timber sales in an area north of Shelter Cove.

Cape Fox does not have plans right now to develop additional shareholder lots; the corporation is mostly planning to grow and harvest timber on its land. It has also discussed internally the possibility of selling recreational access permits to non-shareholders, much like other native corporations have done. Landis (2009) mentioned other activities that would become more accessible with the Shelter Cove Road, noting that the head of Carroll Inlet provides good bear hunting and fly fishing, and that a boat launch at George Inlet would also be a big draw if it were to be built, since the inlet provides good recreational and sightseeing opportunities.

Landis (2009) suggested that a road to Shelter Cove would also provide better access to the power lines connecting Ketchikan to the Swan Lake hydroelectric facility, and could provide easier access to the facility. If the Shelter Cove facilities are sufficient for this type of use, it may be cost effective to move personnel, equipment, and materials by truck to Shelter Cove and by boat to the Swan Lake facility. The road might also be beneficial in the event that someone would need to be evacuated from the hydro facility during times of inclement weather.

One final comment given about recreation was that the area is less maritime, and more of an inland coastal environment (climate and vegetation). People may be interested in going to the area to experience a different environment than what they are used to in Ketchikan.

Figure 8. Property Ownership Map, Ketchikan to Shelter Cove



Source ADOT&PF (2009)

3.3.4 U.S. Forest Service

Northern Economics, Inc. staff met with staff at the U.S. Forest Service, Tongass National Forest, Ketchikan-Misty Fjords Ranger District (Brand, 2009 and McCoy, 2009). Information from this meeting, as well as a follow-up telephone conversation in 2010 (Prud'homme, 2010 and Reeck, 2010) is summarized below.

Current use in the Shelter Cove area is primarily by hunters, though there is some interest in recreation (Jeep tours, etc.). With construction of the Shelter Cove Road, other types of use that could emerge would include motorized and non-motorized uses, hiking, hunting, fishing, subsistence, firewood gathering, Christmas tree cutting, timber (individuals are able to harvest up to 10,000 board feet), access to private lots, and possibly campgrounds.

If the proposed Shelter Cove Road were constructed, it would allow for dispersed recreation (access to lakes, creeks, trails, etc.) via road instead of just water access. Road access would increase ATV use and, as a result, the USFS may have to revisit the planned road closures due to pressure to keep them open. The reason for road closures is primarily due to the cost of maintaining sections of road that are safe for use. However, with improved access to the area, there may be sufficient demand for use of the old forestry roads to keep some of them open for motorized or non-motorized use.

The road would also improve accessibility for older users and those with disabilities, as well as open up recreation for a greater range of economic classes, since most people own automobiles, but fewer people can afford to have both an automobile and a boat. The road could increase commercial recreation and tour uses. USFS could put in campgrounds and day use areas; day use areas would be more likely due to the seasonality of access. The interviewees felt that day use facilities near Shelter Cove could be a very popular attraction.

The USFS has a timber sale planned for 2013, a first sale near Saddle lake, which is something that will be going through the NEPA process soon. The Shelter Cove Road may provide benefits for timber harvests in the area, though the road is most likely to affect the economics of timber sales rather than affect how timber sales plans are carried out. For example, the road may provide logistical support for future harvests, easier hauling, and more lucrative sales. However, it likely would not affect the number or rate of sales, except for possibly accelerating second growth management and public and commercial firework harvesting. These activities are of lower monetary value but provide community benefits.

Finally, a road would provide additional access to private property/lots, which could boost the KGB's tax revenues and increase property values. However, greater access may create enforcement issues and require a greater police presence. For example, the road may make it easier for individuals to abandon vehicles, have parties, and access private roads without authorization.

The USFS is currently working on a recreation plan for the entire district. The agency has not done any recreation studies in the Shelter Cove area, however.

3.3.5 Alaska Mental Health Trust Authority (The Trust)

Northern Economics, Inc. staff met with the Acting Executive Director of The Trust Land Office and its Resource Manager in Ketchikan (Menefee, 2009 and Slenkamp, 2009).

The Trust currently does not have any formal plans for its land at the northwest corner of George Inlet. They are currently harvesting timber on the land with Alcan. That harvesting contract expires in 2012, around the time the new road would be open to the public. What happens after the current

contract expires is still being discussed internally, but there are not any plans for future timber sales in the area, except for small, personal use type sales.

The current thinking is that the greatest opportunity along the corridor is for recreational activities and home site development. The Trust has a lot of waterfront land that may be suitable for sale. However, they do not have a comprehensive plan for the area and therefore can't say for sure what they would do if the road to Shelter Cove were to be built. A plan on recreational and home site development is currently being written.

Overall, however, The Trust is supportive of DOT's proposal and thinks it would be very positive. The Trust's purpose is to maximize the benefit it provides from its assets, and improving the road access only increases the options for future management.

3.4 Household Survey

Northern Economics developed a household survey to evaluate the demand for a road to Shelter Cove and contracted with Ivan Moore Research to administer the telephone survey to 250 households in the Ketchikan area during August 2009. Questions focused on three major categories:

- Household characteristics, including demographics such as age, family status, currently owned vehicles, income, residence, gender and other variables
- Existing use of the study area, including number of trips and primary activities, familiarity with the four project areas
- Anticipated use of the study area, by each of the four segments with a road, including the effect on trips and primary activities

Appendix B contains interview questions. Appendix C contains the survey results, compiled in a cross-tabular format to compare multiple variables.

3.4.1 Road Segments

Figure 9 displays the proposed road system from the North Tongass road to Lake Harriett Hunt, Leask Cove and on to Shelter Cove. This is an approximation intended to illustrate the road segments considered in the survey. The road is divided into four areas, starting from the lower left of the figure:

1. The Revilla Road system, (CDS route #291553, from ADOT&PF records), leads north from its intersection with the North Tongass Highway (CDS route #291500), towards Lake Harriet Hunt. This segment is colored green.
2. Lake Harriet Hunt to Leask Cove extends to Leask Cove and is colored red.
3. The Leask Cove to George Inlet segment, shown in orange, heads to the northernmost tip of George Inlet.
4. George Inlet to Shelter Cove, colored yellow, extends from George Inlet to Shelter Cove itself.

Annual Average Daily Traffic (AADT) on the North Tongass Road is 5,900 vehicles, while an estimated 753 vehicles use the road segment towards its intersection with the Ward Lake Road. The road extends from that intersection to the Leask Cove area, with an AADT of 185 vehicles. There are no published traffic counts from the end of this segment towards George Inlet.

Phone interviewers asked respondents about these four areas, especially their current visits, type of use, and projected use with a road upgrade. The next section discusses the results of the survey, including the current and anticipated levels of use in the study area and primary activities.

Figure 9. Approximate Road Segments, Ward Cove to Shelter Cove, Ketchikan, Alaska



Source: Northern Economics, Google Map, 2009

3.5 Survey Results

A total of 250 Ketchikan residents responded to the survey, with 91 percent indicating they owned a car or truck suitable for access to at least the Ward Cove area, and 62 percent stating they owned a vehicle suitable for off-road traffic, such as a 4-wheel drive unit, an All Terrain Vehicle (ATV) or a unit like an Argo.

Ketchikan residents reported 47 percent ownership of a motorized water craft and 40 percent said they owned a non-motorized watercraft, such as a raft, kayak, or canoe.

Few residents reported they owned snowmachines, recreational vehicles, campers, or a camping trailer (under 10 percent). This likely reflects the island-bound nature of Ketchikan, though Revillagigideo Island has regular ferry traffic north and south of the terminal.

Overall, 55 percent of those residents surveyed traveled to at least one of the four areas in the past 12 months, while 52 percent visited Lake Harriet Hunt. Approximately 52 percent of those surveyed indicated they took vehicle trips to Lake Harriet Hunt for a stay at the lake or to use one of the trailheads. This area tends to be visited as a pleasure or sightseeing trip.

The more adventuresome traveled beyond Lake Harriet Hunt with 24 percent reporting a visit to the second road segment (between Lake Harriet Hunt and Leask Cove, as well as along Cape Fox's White River Road). The majority who visited used motorized vehicles (48 percent) while fewer reported non-motorized use (17 percent).

Thirty-seven percent of those surveyed reported a visit to the third segment, accessed by road from Lake Harriet Hunt and by water from the head of George Inlet. There were more motorized visits (35 percent of all respondents) than non-motorized visits (10 percent).

The final, fourth segment at Shelter Cove is also accessible by road and water. A total of eight percent of Ketchikan interviewees reported visiting this area in the past twelve months; as with the third segment, motorized visits outnumbered non-motorized visits by 20 percent to 4 percent. Shelter Cove is a destination trip, with a differ type of user than those who visit Lake Harriett Hunt on a frequent basis. As a group, Shelter Cove users are:

- Younger, with more users in the 18-34 year-old age groups (27 percent) when compared to those who do not visit any of the areas (15 percent). Only 15 percent are in the 55 year-old and older category, compared to 35 percent in the non-visiting category or 22 percent of those who visit Lake Harriett Hunt frequently.
- More likely to be married males, while single females are less likely to visit Shelter Cove (16 percent) than Lake Harriet Hunt (27 percent).
- Interested in camping, freshwater fishing, hiking, and hunting when compared to other areas, and less likely to view Shelter Cove as a sightseeing trip. Shelter Cove users are more action oriented, on an individual basis.

Table 3 provides a projection of the annual number of trips anticipated to be made to each of the study area segments. The projections are based on current use, ADOL&WD's (2006) population projections for the KGB, and the assumption that the Shelter Cove Road is not constructed (no change to access). ADOL&WD's forecast shows a declining population in the KGB, which is the cause of the downward trend in trips over time.

Table 3. Projected Annual Trips to the Study Area without Shelter Cove Road Improvements

Area	Mean Number of Trips per Household per Year	Average Daily Trips				
		2010	2015	2020	2025	2030
1 Lake Harriet Hunt	5.47	150	146	142	136	130
2 Leask Cove area	2.40	66	64	62	60	57
3 Salt Lagoon area	1.26	35	34	33	31	30
4 Shelter Cove area	1.09	30	29	28	27	26

Sources: ADOL&WD (2006), Northern Economics analysis

Note: One way trips are calculated as the mean number of trips per household per year times the number of households. Average Daily Trips are calculated as the number of one-way trips times two (to represent round trips) and divided by 365 days.

If a road were to be constructed to Shelter Cove, the survey results indicate that the number of trips to each area would increase by approximately 60 to 70 percent over the case with no improvements. Table 4 shows the projected annual number of trips anticipated to be made to each of the study area segments. The largest increase is in the Leask Cove area, which respondents said would increase by about 67 percent.

Table 4. Projected Annual Trips to the Study Area with Shelter Cove Road Improvements

Area	Mean Number of Trips per Household per Year	Average Daily Trips				
		2010	2015	2020	2025	2030
1 Lake Harriet Hunt	8.83	243	236	228	219	210
2 Leask Cove area	4.01	110	107	104	99	95
3 Salt Lagoon area	2.03	56	54	53	50	48
4 Shelter Cove area	1.79	49	48	46	44	43

Sources: ADOL&WD (2006), Northern Economics analysis

Note: One way trips are calculated as the mean number of trips per household per year times the number of households. Average Daily Trips are calculated as the number of one-way trips times two (to represent round trips) and divided by 365 days.

3.5.1 Top Activities in the Study Area

The top five activities respondents reported for the study area over the past year were:

1. Sightseeing or a simple drive in and around the site;
2. Hiking;
3. Camping;
4. Hunting;
5. Operating off-road vehicles or all-terrain vehicles.

Another popular use consisted of salt water boating and fishing, though these uses are limited to segments three and four, at George Inlet and Shelter Cove.

If the Shelter Cove Road were constructed, survey respondents indicated a slight shift in the activities they would enjoy in the study area. The top five activities with a new road are anticipated to be:

1. Sightseeing or a simple drive in and around the site;
2. Camping;
3. Hiking;
4. Freshwater fishing;
5. Hunting.

4 Land Use Impacts

This section considers the impacts the proposed road to Shelter Cove would have on land use in the area. Figure 8, on page 15, provides a map showing the preferred option.

The land use impacts analysis only considers existing land uses. The presence of a new and improved road could result in changes in land use and perhaps land owners making parcels available for recreational cabin sites or similar uses. These potential changes are considered a secondary impact and are addressed in Section 6, Secondary and Cumulative Effects.

4.1 Existing Land Use

Land along the proposed road corridor is generally remote and use is limited. The study area contains numerous silviculture (forestry) roads and other trails. The existing roads were constructed for timber operations and are not developed to standards for public roads. As a result, the roads are not open for public use. However, numerous trails for motorized and non-motorized access are available in the area, which allows residents to access the lands for primarily recreational and subsistence purposes.

There are some private parcels at the north end and on the northeast side of George Inlet. The north end parcels were sold to private parties through an Alaska Department of Natural Resources (ADNR) land sale. There are no residential subdivision lands for sale from ADNR (ADNR, 2008). The latest remote cabin site staking program does not include any lands in Southeast Alaska (ADNR, 2009). The northeast parcels are Cape Fox shareholder lots (Landis, 2009).

4.2 Land Use Plans

In general, major land owners in the study area do not have plans addressing future land use along the Shelter Cove Road corridor.

The Ketchikan Gateway Borough's 2020 Comprehensive Plan (KGB, 2009) outlines future land use objectives and policies for KGB land. It does not contain any policies specifically related to the area affected by the proposed Shelter Cove Road.

Cape Fox Corporation does not have a published and publicly accessible plan for the area affected by the Shelter Cove Road. However, the corporation has a current focus of growing timber resources on its land for eventual sale and does not have any plans for any shareholder lot sales (Landis, 2009).

The USDA Forest Service is currently working on a recreation plan for the entire Ketchikan-Misty Fiords Ranger District. The plan will not specifically address the area affected by the Shelter Cove Road, nor have other plans specifically addressed the area (Brand, 2009 and McCoy, 2009).

The Trust has waterfront land in the study area that may be suitable for sale, and some groups have approached the organization about purchasing land (Brand, 2009 and McCoy, 2009). However, the Trust does not have a comprehensive plan for the area (Menefee, 2009 and Slenkamp, 2009).

4.3 Anticipated Land Use Impacts

Due to the fairly remote location of the road on Revillagigedo Island, the road is not anticipated to have substantial impacts on existing land uses. The household survey and interviews each indicated that existing uses are mostly recreational or subsistence-oriented and that a road would mostly increase those uses rather than cause a shift in use. With the increased access provided by the road,

the demand for developed areas and facilities will likely increase. However, based on the survey results and interviews, the most likely facilities to be developed would be extensions of the existing uses. For instance, if day-use facilities were developed on Forest Service land, the primary activities from those areas would be hiking, fishing, and other recreation. If the USDA Forest Service were to construct campground facilities, it would be to provide facilities to support the camping activities that already take place in the area. Therefore, this project is not anticipated to shift the types of activities taking place in the area, but there could be a shift in those activities from primitive or undeveloped areas to developed areas.

Areas in which development may occur would be along the northwest shore of George Inlet, where Cape Fox offers stream fishing, hiking, and Adventure Carts; along the north shore of George Inlet, which is a scenic recreational area and where private parcels from an ADNR land sale are located; and at the north end of Carroll Inlet, where hunting and fishing activities take place.

In the USDA Forest Service interview, staff members had indicated that Metlakatla natives participate in subsistence activities in the Leask Cove area. When asked about potential impacts the road, the Bureau of Indian Affairs representative in Metlakatla said he did not believe the road would affect subsistence activities in the area (Gunyah, 2010).

As a secondary impact, the presence of a new and improved road could result in additional development of properties that are made more accessible by the road. Land owners could also make parcels available for sale for recreational cabin sites or other uses. This possibility is discussed in Section 6, Secondary and Cumulative Effects.

5 Economic Impacts

This section presents estimates of the economic impacts associated with road construction and maintenance for the Ketchikan Gateway Borough and all of Southeast Alaska. The analysis considers both the direct as well as the secondary economic effects of the proposed road on the study area.

5.1 Input-Output Analysis

The effects of the road are quantified using an input-output model, IMPLAN, which is a tool developed by the Minnesota Implan Group (MIG, Inc.) to measure direct, indirect, and induced economic effects.

IMPLAN measures the multiplier effects of changes in the level of economic activity in a particular sector. It is based on the theory that when new money enters a community through investment, revenues, or income, some of it is re-spent one or more times in the local economy, therefore creating multiplier effects of additional economic impacts. IMPLAN estimates these impacts using specific data on the inputs needed to produce the products or services for about 440 industries or economic sectors, and region-specific data on industries that are present to purchase those inputs. Data for these sectors and industries are available from secondary sources and are included in the model. The multipliers for any given industry in any given location are unique, based on industry composition and geographic area. The analysis uses the most recently available data, which is from 2007.

The model used input-output models of the economies of the Ketchikan Gateway Borough and Southeast Alaska (an aggregation of boroughs and census areas south of and including the City and Borough of Yakutat) were created. The borough/census area level is the most detailed level of analysis available in the IMPLAN model.

IMPLAN evaluated the direct and secondary economic impacts of the Shelter Cove road according to changes in employment (average part-time and full-time jobs) and the level of economic activity in different sectors of the regional economy. ADOT&PF provided preliminary data on construction costs and annual maintenance costs.

5.2 Direct Effects

Direct economic effects are the changes in local business activity occurring as a direct consequence of public or private business decisions. The direct expenditures resulting from a decision or action would create an economic stimulus and generate employment, income, and industry output in various sectors of the regional economy. In this case, the direct expenditures for construction and maintenance of the Shelter Cove Road would create the economic stimulus. The proposed road would have two distinct economic impacts. During construction, there would be substantial expenditures and employment opportunities. Following construction of the road, road maintenance would be the primary expenditure, with much lower levels of employment and economic activity.

5.3 Secondary Effects

Secondary effects include both the indirect and induced effects that would occur from direct spending on the Shelter Cove Road construction and ongoing operations and maintenance. Indirect effects result from changes in sales for suppliers to the directly affected businesses, including trade and

services at the retail, wholesale, and producer levels. In other words, increased business activity in one sector will lead to additional business activity in suppliers. For example, the companies constructing the road would make purchases in the community for supplies and some construction materials, though some types of materials might be sourced from outside the region. Induced effects are further shifts in spending on food, clothing, shelter, and other consumer goods and services caused by a change in the payroll of directly and indirectly affected businesses. As workers earn more money from their employment, their personal and household purchases contribute to induced effects. These shifts lead to further business growth throughout the local economy. The indirect and induced business impacts of a project or facility are often referred to as "multiplier effects," as they can make the overall economic impacts substantially larger than the direct effects alone. The secondary economic effects of construction, operations, and maintenance of the Shelter Cove Road would extend throughout the KGB and Southeast Alaska economies, and are represented monetarily by multipliers introduced in the next section.

5.4 Economic Impacts in the Ketchikan Gateway Borough

Economic impacts in the KGB are separated into road construction impacts and maintenance impacts. The construction impacts represent the total impacts that would occur during the construction period as a whole; these impacts have not been annualized. The maintenance impacts would occur annually based on anticipated maintenance spending.

Table 5 shows the output, employment, and income multipliers for road construction and maintenance for the Ketchikan Gateway Borough. Output multipliers reflect the total economic output as a multiple of the direct spending. Employment multipliers show the total number of jobs (direct, indirect, and induced) per \$1 million of direct spending. Personal income multipliers provide the personal income to laborers as a fraction of the direct spending.

Table 5. IMPLAN Multipliers for Ketchikan Gateway Borough, 2007 Data

Multiplier	Road Construction	Road Maintenance
Output (\$s of economic activity per \$1 of spending)	1.3965	1.4443
Employment (Number of jobs per \$1 million of spending)	12.1977	13.7647
Personal Income (\$s of labor income per \$1 of spending)	0.5946	0.6802

Source: MIG, Inc. (2009)

The following two sections look at road construction and annual road maintenance impacts for the Ketchikan Gateway Borough.

5.4.1 Road Construction Impacts

Development of the Shelter Cove Road will take place in two phases. The first phase will include improvements of the existing forest roads and the construction of a new segment in the middle, resulting in a gravel road with a speed limit of 35 mph or less. The second phase will include additional construction, draining improvements, and realignments, resulting in a paved, 35 mph road.

The first phase capital cost is expected to be \$26.5 million. Based on this level of spending, the total economic output in the Ketchikan Gateway Borough is projected to be \$37 million over the course of

the construction. This level of spending would generate 323 part-time and full-time jobs in the borough and generate personal income of \$15.8 million.

The second phase capital cost is expected to be \$82 million. This amount is in addition to the phase one costs. Based on this level of spending, the total economic output in the Ketchikan Gateway Borough is projected to be \$114.5 million over the course of the construction. This level of spending would generate 1,000 part-time and full-time jobs in the borough and generate personal income of \$48.8 million.

5.4.2 Annual Road Maintenance Impacts

After the phase one improvements have been completed, operations and maintenance (O&M) costs are anticipated to be \$3,800 per mile to maintain and operate a gravel, summer only, two lane road. That includes pothole maintenance with a grader, clearing and brushing during the summer only. Overall, summer O&M costs for phase one would be about \$84,000 annually in present dollars.

After the phase two improvements have been completed, the annual O&M cost would be the same but maintenance would occur year-round. ADOT&PF would no longer need a high cost grader and could plow with a lower-cost, high-speed highway plow. Clearing and brushing efforts would be the same. Overall, the year-round O&M costs for phase two would be about \$84,000 annually in present dollars.

Based on annual maintenance costs of \$84,000, total economic output in the Ketchikan Gateway Borough is projected to be about \$100,000 each year. This level of spending would generate 1 or 2 part-time and full-time jobs in the borough and generate personal income of about \$100,000.

5.5 Economics Impacts in Southeast Alaska

Economic impacts for Southeast Alaska are separated into road construction impacts and maintenance impacts. For purposes of this study, Southeast Alaska has been defined as the entire region of the state south of, and including, the City and Borough of Yakutat. Specifically, the region is an aggregation of Haines Borough, Juneau Borough, Ketchikan Gateway Borough, Sitka Borough, Skagway-Hoonah-Angoon Census Area (CA), Wrangell-Petersburg CA, Yakutat Borough.

Table 6 shows the output, employment, and income multipliers for road construction and maintenance for the aggregated Southeast Alaska Region.

Table 6. IMPLAN Multipliers for Southeast Alaska, 2007 Data

Multiplier	Road Construction	Road Maintenance
Output (\$s of economic activity per \$1 of spending)	1.4711	1.5124
Employment (Number of jobs per \$1 million of spending)	12.2898	14.1814
Personal Income (\$s of labor income per \$1 of spending)	0.6631	0.7507

Source: MIG, Inc. (2009)

The following two sections look at road construction and annual road maintenance impacts for Southeast Alaska.

5.5.1 Road Construction Impacts

The first phase capital cost is expected to be \$26.5 million. Based on this level of spending, the total economic output in Southeast Alaska is projected to be \$39 million over the course of the construction. This level of spending would generate 326 part-time and full-time jobs in the region and generate personal income of \$17.6 million.

The second phase capital cost is expected to be \$82 million. This amount is in addition to the phase one costs. Based on this level of spending, the total economic output in Southeast Alaska is projected to be \$120.6 million over the course of the construction. This level of spending would generate 1,007 part-time and full-time jobs in the region and generate personal income of \$54.4 million.

5.5.2 Annual Road Maintenance Impacts

Based on annual maintenance costs of \$84,000, total economic output in Southeast Alaska is projected to be about \$100,000 each year. This level of spending would generate 1 or 2 part-time and full-time jobs in the borough and generate personal income of about \$100,000.

6 Secondary and Cumulative Effects

A new and improved road could result in land use changes in the future. Such changes, if they occurred, would be a secondary effect. A road to Shelter Cove could also have cumulative effects that are generated by linkages of the Shelter Cove Road to other activities. The proposed regional road connection to the Cassiar Highway, if also constructed, may contribute to cumulative effects.

6.1 Secondary Effects of the Shelter Cove Road

There are numerous secondary effects that could occur with the construction of the Shelter Cove Road. This section considers those effects, including:

- Development of additional recreational and commercial activities and opportunities along the corridor, both for residents and visitors
- Improved access to timber resources for personal use and commercial development
- Improved access to subsistence resources
- Improved access to the Swan Lake hydropower facility and transmission lines

6.1.1 Recreational Activities

Although many individuals access the areas through which the road would travel, many of those areas are remote and inaccessible due to road conditions and terrain. Providing greater accessibility could lead to more developed recreational and commercial activities and opportunities along the corridor.

One potential growth area would be in tourism-related activities and trips to locations along the Shelter Cove Road. At present, Cape Fox Corporation runs buses to bring cruise ship visitors to Lake Harriet Hunt for canoe trips. With an upgraded road and additional segments, growth in commercial tourism may be possible.

Cape Fox Corporation is considering selling permits to individuals for recreational use of Cape Fox land (Landis, 2009). If the corporation were to do this, improvements to the road as part of this project would increase accessibility to Cape Fox Lands and could increase the corporation's revenues.

The USDA Forest Service indicated the possibility that it could develop day use areas and campgrounds on its lands affected by the Shelter Cove Road. The Forest Service provides these types of facilities elsewhere in the state and in the country. Based on the amount of snow received in the area, the Forest Service would most likely focus on day use areas since the limited access and use of campgrounds would reduce their benefit (Brand, 2009 and McCoy, 2009).

6.1.2 Improved Access to Timber Resources

The area affected by the Shelter Cove Road already has a network of silviculture roads. To some extent, increased access provided by the Shelter Cove Road would only increase the level of current activities rather than create any new land uses. However, if the Shelter Cove Road were to open up previously inaccessible areas to timber operations and provide for economical storage and transportation options, this would represent a change of land use and a secondary impact of the road.

6.1.3 Improved Access to Swan Lake Power Facility

The Shelter Cove Road will provide land access to Shelter Cove for vehicles heading to and from the Swan Lake hydroelectric facility. This may result in shorter travel times and lower costs for moving materials to and from the facility, and could provide more reliable access in the event that a medical emergency were to occur at the facility during a time when inclement weather might prohibit flights or longer boat trips.

6.2 Other Projects Planned for the Region

A variety of projects within the region may have the potential to generate cumulative effects in combination with the Shelter Cove Road. The following projects, outlined in the Southeast Alaska Comprehensive Economic Development Strategy 2009 Update (Southeast Conference and Central Council Tlingit and Haida Indian Tribes of Alaska, 2009), may generate cumulative effects once completed:

- Renewable Energy Projects (KGB 2009 Project List)
- Value Added Wood Products Business Development Center (KGB 2009 Project List)
- Bradfield Road/AK-BC Intertie (Wrangell 2009 Project List)
- Southeast Alaska CEDS Goal II. Economic Development, Objective 2: Timber Development
- Southeast Alaska CEDS Goal II. Economic Development, Objective 4: Minerals Development

Southeast Alaska Power Agency (SAPA), which is owned by the cities of Ketchikan, Wrangell, and Petersburg, has a project in place to put in a new substation at Shelter Cove (Adams, 2009).

The next section considers, on a qualitative basis, the anticipated regional cumulative effects from these projects.

6.3 Anticipated Regional Cumulative Effects

The Southeast Alaska Transportation Plan (ADOT&PF, 2004) lists several regional road elements. Of particular interest to the Shelter Cove Road are the Mid-Region Highway Access to the Continental Highway System (Bradfield Road) and Revillagigedo Highway. ~~Another project affecting Ketchikan is Gravina Access – Bridge from Ketchikan to Gravina Island.~~

The Bradfield Road is planned to “connect Ketchikan, Wrangell, and Petersburg to the Cassiar Highway in Canada. A route has not been selected between the terminus (on Bradfield Canal) of the proposed Revillagigedo Highway connection to Ketchikan and the future highway junction in Canada” (ADOT&PF, 2004). The Revillagigedo Highway would extend north from Ketchikan and connect to the Bradfield Road. As noted in the Southeast Alaska Transportation Plan (ADOT&PF, 2004), “In combination with Mid-Region Access, this new route links the second largest community in Southeast Alaska with the continental highway system. Today, there is no highway or ferry access along this corridor.”

Once developed, the Bradfield Road and Revillagigedo Highway projects would allow the Shelter Cove Road to provide access to Wrangell and Petersburg, as well as the rest of Alaska on the highway system, Canada, and the United States via the continental road system.

In addition to the regional projects noted in the Southeast Alaska Transportation Plan, other plans list projects that may have cumulative effects with the Shelter Cove Road.

The Ketchikan Gateway Borough's 2009 Project List includes funding for renewable energy projects and a Value Added Wood Products Business Development Center.

Of regional interest is the Bradfield Road/AK-BC Intertie. While listed on the City of Wrangell's 2009 Project List, the mid-region access project has been under study for the last few years. This project would create new road and water-based connections between Southeast Alaska and the Cassiar Highway in British Columbia, Canada. If constructed, the Shelter Cove Road could be integrated into this greater transportation system, which would provide additional access to and from Ketchikan.

The Southeast Alaska CEDS (2009) have objectives of increasing development of timber and minerals in Southeast Alaska. While the objectives are broad and do not specifically identify the areas in which additional development would be pursued, construction of the Shelter Cove Road would help to increase access to potentially developable lands on Revillagigedo Island.

The Southeast Alaska Power Agency has a project in place to construct a new power substation at Shelter Cove. Development of the Shelter Cove Road would increase access and reduce transportation costs to this facility.

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