

# Kake Access Transportation Needs Assessment

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Federal Highway  
Administration

and  
Alaska Department of  
Transportation and  
Public Facilities

on behalf of:  
Robert Peccia &  
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in association with



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## Abbreviations

AADT	Average Annual Daily Trips
ACS	U.S. Census Bureau's American Community Survey
ADOLWD	Alaska Department of Labor and Workforce Development
ADOT&PF	Alaska Department of Transportation and Public Facilities
ALARI	Alaska Local and Regional Information
AMHS	Alaska Marine Highway System
AML	Alaska Marine Lines
BTS	Bureau of Transportation Statistics
EIS	Environmental Impact Statement
EAS	Essential Air Service
FOB	Freight on Board
HLDS	High-Level Demand Study
IHS	Indian Health Services
KPI	Kake-Petersburg Transmission Line Intertie
M&O	Maintenance and Operations
NB	Northbound
NHTS	National Household Transportation Survey
SATP	Southeast Alaska Transportation Plan
SB	Southbound
SEAPA	Southeast Alaska Power Agency
SEARHC	Southeast Alaska Regional Health Consortium
USFS	U.S. Forest Service

## Executive Summary

This executive summary utilizes a question and answer format to help guide the reader to specific results associated with this report. Additional detail can be found in the main body of the report.

### **What is the proposed project?**

The Alaska Department of Transportation and Public Facilities (ADOT&PF) proposed, in the Southeast Alaska Transportation Plan (SATP), to build a new road/ferry connection from Petersburg, Alaska to Kake, Alaska (see Figure ES-1 on the following page). Kake, Alaska is a town of approximately 550 residents located on the northwest coast of Kupreanof Island and adjacent to the Frederick Sound. Kake is currently accessible by plane, boat, or mainline ferry. The nearest community is the City of Petersburg, 38 flying miles away. The connection would allow travel from Kake on Kupreanof Island to Petersburg on Mitkof Island via both road and at least one shuttle ferry connection. In 2012 the Alaska State Legislature approved \$40 million for this project. As noted in the 2012 Total Project Snapshot Report from the Alaska State Legislature, the project would:

...construct approximately 22 miles of new single lane, unpaved roadway and bridges and upgrade 23 miles of existing logging roads on the north end of the Kupreanof Island to connect the communities of Kake and Petersburg.... The objective of completing a road connection and electrical transmission line to Petersburg is to give the community access to low cost hydroelectric power and the medical, transportation, and commercial services available at Petersburg while enhancing its ability to make the most of local economic potential.<sup>1</sup> (SOA 2012)

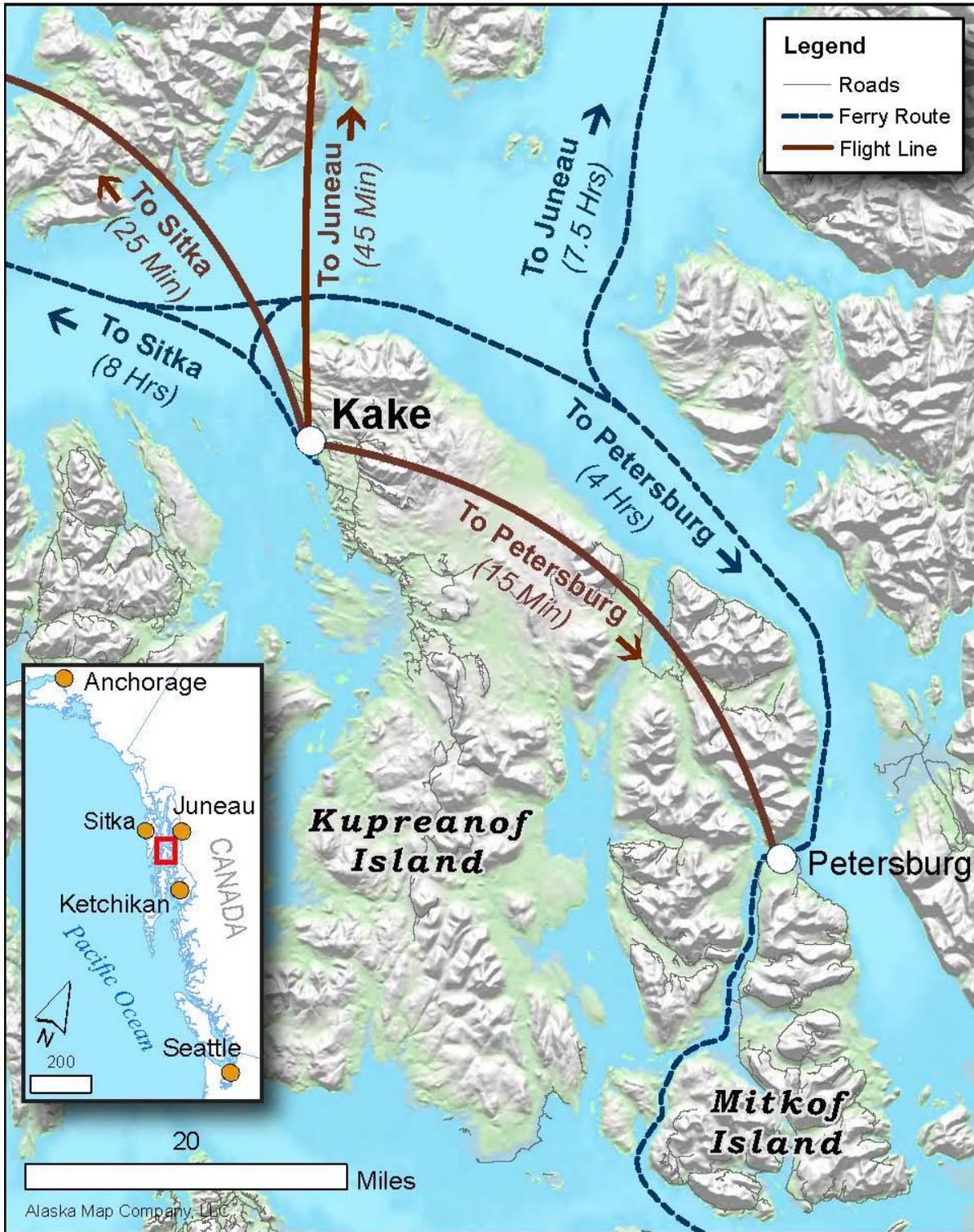
### **What is the purpose of this report?**

The purpose of this report is to provide a portion of the information necessary to refine the Purpose and Need Statement for the Environmental Impact Statement (EIS), and is part of a comprehensive process to develop the Purpose and Need Statement. As such, this report summarizes prior work on the Kake Access Project, analyzes current travel patterns, documents perceptions of project benefits and potential negative effects through key informant interviews, and estimates potential annual average daily traffic (AADT) counts for round trips between Kake and Petersburg. The report is not intended to be a National Environmental Policy Act-level analysis of impacts. This report will be followed by other steps guided by ADOT&PF and the Federal Highway Administration's Western Federal Lands Highway Division, including public meetings and outreach.

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<sup>1</sup> The electrical connection mentioned in this quote is the proposed hydroelectric intertie. While the intertie and the road may provide benefits to each other, they are not the same project and either could move ahead without the other. This report discusses the benefits to the intertie of the road, but the intertie is not critical to the road.

Figure ES-1. Study Area



Source: Alaska Map Company, 2014

### **What are the report's methods?**

The methods used for this report include:

- Reviewing prior work on the project including the 2004 Southeast Alaska Transportation Plan (SATP), the 2004 Northern Panhandle Community Survey, the 2013 High Level Demand Study, and the 2014 Draft SATP.
- Analyzing available data from U.S. Bureau of Transportation Statistics, the Alaska Marine Highway System and the U.S. Forest Service
- Conducting a series of key informant interviews
- Conducting a telephone survey of residents of Kake, Petersburg, and Kupreanof and estimating travel demand for the proposed project based on these survey results.

### **What are the report's key conclusions?**

The purpose of this report is to provide information necessary to refine the Purpose and Need Statement. With this purpose in mind, the report comes to the following conclusions:

- **In the short run, the road is unlikely to substantially change regional travel patterns as measured by origin and destination.** Petersburg residents look to Juneau, and Kake residents to Juneau and Sitka, as their regional economic and service-related hubs and their travel patterns reflect this relationship. The study results indicate that these relationships and the associated travel patterns are unlikely to change with the construction of the road.
- **The road would greatly expand the number of opportunities Kake residents have to travel by ferry to Juneau and Sitka and greatly reduce the average minimum duration of ferry trips.** The proposed road would increase Kake residents' access both to Petersburg and its corresponding transportation networks. This increased access to more frequent and robust travel options would facilitate shorter and less costly layovers during round trip travel in the region.
- **The road would modestly expand business opportunities and allow business in certain industries to reduce their costs.** Key informant interviews indicate that the businesses most likely to use the road are those located in Kake that rely on transport of goods or supplies. Interviewees from the mariculture, seafood, and retail industries felt that their businesses would benefit from lower shipping costs, reduced repair and maintenance costs, reduced fuel costs, and the access to other transportation networks if ADOT&PF constructed the proposed road. In addition, the road will provide modest entrepreneurial opportunities for residents in Kake and Petersburg, particularly in transport and tourism activities.
- **The road's initial effects are likely to be limited for many sectors of the local economy.** Interviewees from many local government entities, medical service providers, and village organizations did not think that the road would fundamentally change their business or organization's source for goods and services, and that they would continue to travel to larger hub communities such as Juneau or Sitka to access products and services not available in their community.
- **While the road will provide the opportunity for round-trips between Kake and Petersburg the primary source of activity on the road will be "partial use trips" for recreation subsistence.** McDowell Group Telephone Survey results indicate that many people in both Kake and Petersburg would use the road even if they weren't taking full round-trips between the two communities. The study estimates that, depending on the selected route's length, the

round-trip AADT on the road would be between 16 and 50 per day with partial trips adding another 25 to 110 AADT from Kake and another 50 to 120 AADT from Petersburg.

- **The minimum travel time necessary for a one-way trip will greatly influence usage.** The average number of trips per person per year calculated from the McDowell Group Telephone Survey fell greatly as trip length increased. For Petersburg residents, the average number of trips per year fell from 1.8 for the shortest trips (3 hours) to just 0.7 for the longest trips (6 hours). Among Kake residents, the average number of trips per year fell from 8.8 (4 hours) to 2.7 (6 hours).
- **A sizeable portion of both Kake and Petersburg residents said they would not use the road and this percentage was affected by estimated minimum travel time on the road.** Depending on the estimated length of a one-way trip, the percent of respondents who said they would not use the road for round-trips ranged from 49 percent to 73 percent in Petersburg and between 34 percent and 59 percent in Kake.

### **What actions will follow this report?**

The project team will host a pair of public meetings to discuss the results of this analysis and then use the information from those public meetings and this report to refine the Purpose and Need Statement for the project which has issued a Notice of Intent to move ahead with the EIS.

# 1 Introduction

The Alaska Department of Transportation and Public Facilities (ADOT&PF) proposed, in the Southeast Alaska Transportation Plan (SATP), to build a new road/ferry connection from Petersburg, Alaska to Kake, Alaska (see Figure 1 on the following page). Kake, Alaska is a town of approximately 550 residents located on the northwest coast of Kupreanof Island and adjacent to the Frederick Sound. Kake is currently accessible by plane, boat, or mainline ferry. The nearest community is the City of Petersburg, 38 flying miles away. The connection would allow travel from Kake on Kupreanof Island to Petersburg on Mitkof Island via both road and at least one shuttle ferry connection. As noted in the 2012 Total Project Snapshot Report from the Alaska State Legislature the project would:

...construct approximately 22 miles of new single lane, unpaved roadway and bridges and upgrade 23 miles of existing logging roads on the north end of the Kupreanof Island to connect the communities of Kake and Petersburg... The objective of completing a road connection and electrical transmission line to Petersburg is to give the community access to low cost hydroelectric power and the medical, transportation, and commercial services available at Petersburg while enhancing its ability to make the most of local economic potential.<sup>2</sup> (SOA 2012)

This report provides some of the information necessary to refine the Purpose and Need Statement by:

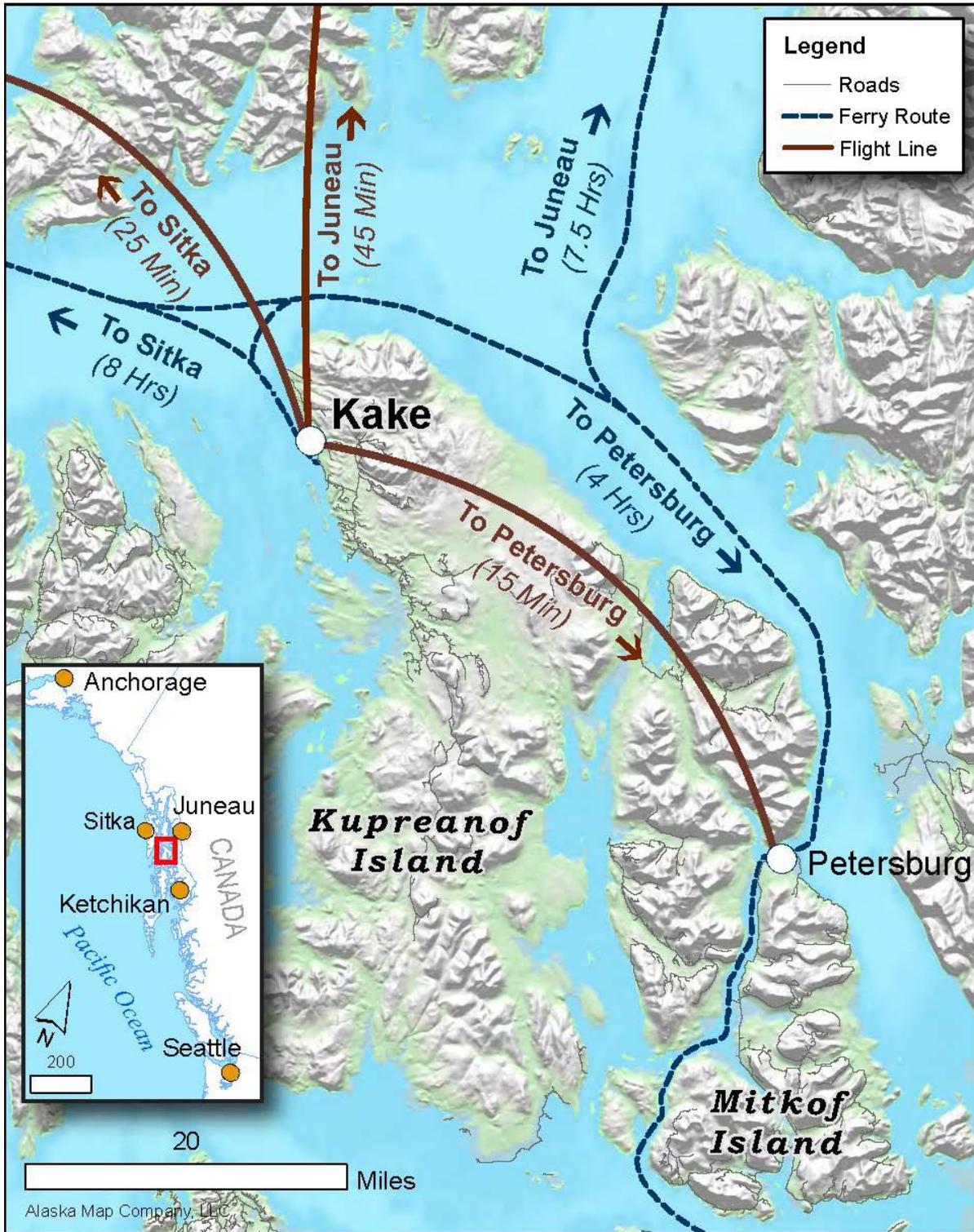
- Summarizing prior work on the Kake Access Project (Section 2.1 and 2.3);
- Analyzing current travel patterns using publicly available data and a telephone survey of Kake and Petersburg residents (Section 2.6 and 2.7);
- Documenting perceptions of project benefits and potential negative effects through key informant interviews (Section 2.8);
- Discussing the potential effects of the road on the communities and economies of the region including estimating annual average daily traffic (AADT) counts for both round trips between Kake and Petersburg and for trips which use a portion of the access corridor (Section 3)
- Providing summary conclusions based upon the data collected for this report (Section 4).

This study is part of a comprehensive process to develop the Purpose and Need Statement, and will be followed by other steps guided by ADOT&PF and the Federal Highway Administration's Western Federal Lands Highway Division.

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<sup>2</sup> The electrical connection mentioned in this quote is the proposed Kake-Petersburg intertie. While the intertie and the road may provide benefits to each other, they are not the same project and either could move ahead without the other. This report discusses the benefits to the intertie of the road, but the intertie is not critical to the road.

Figure 1. Study Area



Source: Alaska Map Company, 2015

## 2 Available Data

This section discusses relevant prior research on accessing Kake with a road from Petersburg.

### 2.1 2013 High Level Demand Analysis

In June 2013, HDR, Inc. prepared a High Level Traffic Demand Study for the Federal Highway Administration, Western Federal Lands Highway Division for the Kake Access Environmental Impact Statement (EIS). This study looked at population, current travel patterns, and the estimated travel times to develop travel demand estimates for potential corridors. The study cites Alaska Department of Labor and Workforce Development (ADOLWD) population forecasts and assumes that predicted long-term declines in regional population will result in declining traffic volumes over the period of analysis, but only focuses on the time that the chosen corridor is constructed and opened.

The High Level Demand Analysis identifies Indian Health Services (IHS) facilities, discount retailers, federal and state offices, and visiting family and friends as the main drivers of current travel patterns. The most common destination for travelers originating from Kake is the regional hub of Juneau. The report documents three air transport providers that offer regularly scheduled or chartered flight to Juneau, Sitka, Ketchikan and Petersburg. Alaska Seaplanes (formerly Air Excursions) is the awardee of the Essential Air Service (EAS) contract from 2010–2014 for Kake, and offers one direct round-trip flight from Kake to Juneau daily in the winter and two direct flights daily in the summer. In addition, there is also an additional daily flight via Sitka in both summer and winter. The Federal Aviation Administration showed an average of 33 passengers a week flew from Juneau to Kake, including one flight traveling via Sitka, and an average of 32 passengers a week flew from Kake to Juneau in 2012. Harris Air provides roundtrip service between Kake and Sitka 17 to 20 times a week as well as medevac service to the IHS facilities in Sitka, Juneau and Ketchikan. Charter services are also available between Kake in Petersburg through Pacific Wings, LLC, which reports an average of two passengers per week during winter months and an average of six passengers per week during the summer months. The study also notes that while Kake is not connected to any other community by road, there are about 120 miles of logging roads that are accessible from the community.

The High Level Demand Analysis evaluates five preliminary corridors referenced in the project's notice of intent: the Northern Corridor, Tonka Corridor, Southern Corridor to Kah Sheets, Southern Corridor to Totem Bay and Kake Ferry Service Improvements. Two of these corridors—both of the Southern Corridor options—have multiple sub-corridors resulting in 15 total corridors. The study developed estimated total travel times and estimated AADT for each of the 15 corridors by combining all road and ferry legs of each route resulting in travel times ranging from 2.3 hours (Northern Corridor corridor) to 13.3 hours (Southern Corridor to Kah Sheets Bay C1 corridor) (see Table 1).

**Table 1: Average Annual Daily Trips (AADT) by Corridor**

Corridor	Origin - Destination	Travel Time (min)	Percent of Daily Trips	AADT
1. Northern Corridor	Kake–Petersburg	139	0.71	28
2. Tonka Corridor	Kake–Petersburg	170	0.43	17
3. Southern Corridor to Kah Sheets Bay A	Kake–Petersburg	322	0.15	6
4. Southern Corridor to Kah Sheets Bay B	Kake–Petersburg	278	0.2	8
5. Southern Corridor to Kah Sheets Bay C1	Kake–Ketchikan	799	<0.1	<4
6. Southern Corridor to Kah Sheets Bay C2	Kake–Ketchikan	698	<0.1	<4
7. Southern Corridor to Kah Sheets Bay D	Kake–Wrangell	334	0.14	5
8. Southern Corridor to Totem Bay A	Kake–Petersburg	370	0.12	5
9. Southern Corridor to Totem Bay B	Kake–Petersburg	335	0.14	5
10. Southern Corridor to Totem Bay C1	Kake–Ketchikan	779	<0.1	<4
11. Southern Corridor to Totem Bay C2	Kake–Ketchikan	678	<0.1	<4
12. Southern Corridor to Totem Bay D	Kake–Wrangell	378	0.11	4
15. Kake to Petersburg Ferry	Kake–Petersburg	341	<0.1	<4

Source: Kake Access EIS: High Level Travel Demand Study. HDR, 2013

To develop travel demand estimates for each of the corridors, the high level demand analysis team applied the estimated 9.2 vehicle trips per household per day from the 2002 Anchorage Household Travel Survey to the total number of households in Kake. This resulted in an estimated 1,960 vehicle trips per day in Kake. The study team then applied trip distribution percentages published by the National Household Transportation Survey (NHTS) that were based on total travel time. The NHTS distributions used had been filtered for the Juneau Access Project to reflect distributions for communities that were geographically similar to Juneau. The travel demand estimates, displayed in AADT, ranged from 28 AADT (Northern Corridor corridor) to <4 AADT (multiple corridors). The study team did preface their results by stating that without local survey data, national values were used to develop travel demand estimates which are “likely to over-predict travel volumes” (p. 11) and recommended conducting a household survey in Kake due to the “unique nature of the location”.

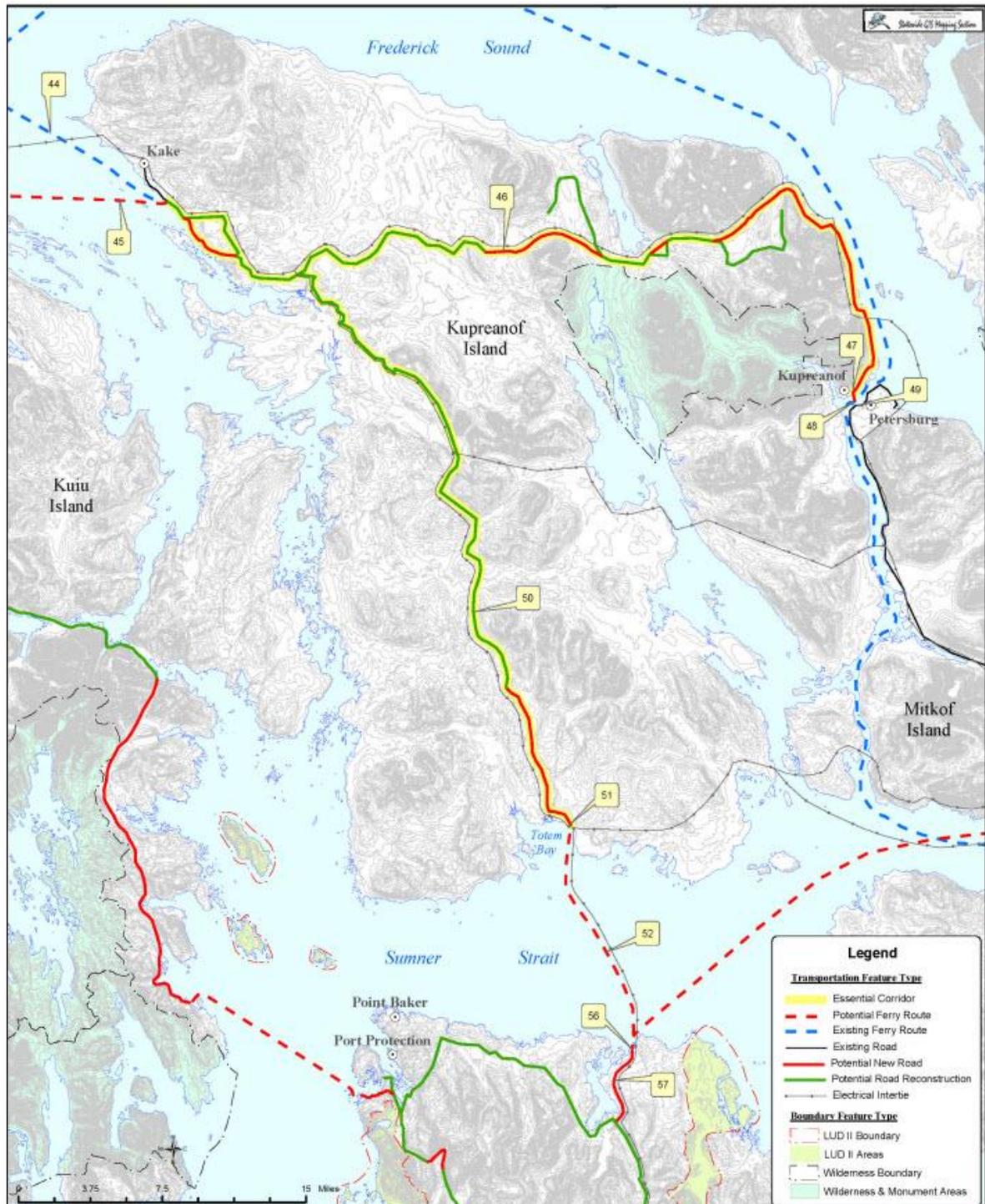
## 2.2 2004 Southeast Alaska Transportation Plan

In 2004, ADOT&PF published the SATP, one of multiple region wide multi-modal transportation plans compiled to create the Alaska Statewide Transportation Plan, which provides a framework for state involvement over a 20 year period. The proposed road between Kake and Petersburg is included in the 2004 SATP and is classified as an “essential transportation and utility corridor” (ADOT&PF 2004). The proposed road between Kake and Petersburg is coupled with another proposed road from Kake to Totem Bay and a shuttle ferry connection across Sumner strait that would connect to the Prince of Wales Island highway system. The 2004 SATP states:

Either road connection has the potential of making Kake a ferry terminus for ferries connecting with Sitka and potentially Juneau to serve through traffic that would make use of the regional road system via Kake.

Figure 2 displays the two proposed roads and corresponding ferry connections in the Kupreanof Island Corridor presented in the 2004 SATP.

Figure 2. 2004 SATP Kupreanof Island Corridors



Source: ADOT&PF, 2004

The 2004 SATP also presents descriptions and cost estimates for each of the principal transportation components considered in each corridor. Table 2 displays the information presented for the Kupreanof Island corridor that the proposed Kake to Petersburg road falls under. In 2004, the total estimated

capital costs for the Kake-Petersburg connection components (Kake-Petersburg road, Kupreanof and Petersburg ferry terminals and the Wrangell Narrows shuttle ferry) were just over \$143.5 million, and the total annual estimated maintenance and operations (M&O) for these components is just under \$1.2 million.

**Table 2: Description of and Cost Estimates for Kupreanof Island Corridor Components**

Corridor Components	Estimated Interim Average Speed (mph)	Segment Length Statue (miles)	Ferry Service Frequency (trips/day)	Total Estimated Capital Cost (\$ 000)	Total Annual Estimated M&O Cost (\$ 000)
Ferry Link: Rodman Bay- Kake Ferry	17.30	82.00	2	25,000	1,692
Ferry Link: Warm Spring Bay- Kake Ferry	17.30	37.40	2	25,000	1,692
Kake- Petersburg Road	30.00	50.61		131,560	415
Kupreanof Ferry Terminal				4,000	10
Ferry Link: Kupreanof Ferry (Wrangell Narrows)	13.80	1.20	10	4,000	738
Petersburg Ferry Shuttle Terminal				4,000	10
Kake-Totem Bay Road	30	45.65		105,000	374
Totem Bay Ferry Terminal				4,000	10
Ferry Link: Summer Strait Ferry to Red Bay	13.8	12.3	3	12,000	1,263
<b>Kupreanof Island Corridor Subtotal</b>				<b>314,560</b>	<b>6,204</b>

Source: ADOT&PF, 2004

The report also notes that the proposed road was not supported by the residents in Kake at the time, but that the road would significantly benefit the regional transportation system. Without local community support, this road connection is said to be “lower in importance than other transportation priorities” (ADOT&PF 2004), and although residents of Kake do not support the proposed road, they do want improved ferry service.

In the public comment section of the 2004 SATP, residents from Petersburg expressed concerns over decreased ferry service as a result of the proposed road and emphasized the importance to their local economy of shipping seafood via the Alaska Marine Highway System (AMHS), especially southbound. Petersburg residents also brought up concerns regarding the reliability and safety of highway travel year-round and asked if provisions would be made for passengers traveling without a vehicle. Comments from Kake were focused around the desire for increased ferry service and rebuilding the passenger waiting shelter that has been damaged by a fire. The Organized Village of Kake referenced a survey it conducted in which 64 of 67 respondents desired improved ferry service.

### 2.3 2014 Draft Southeast Alaska Transportation Plan

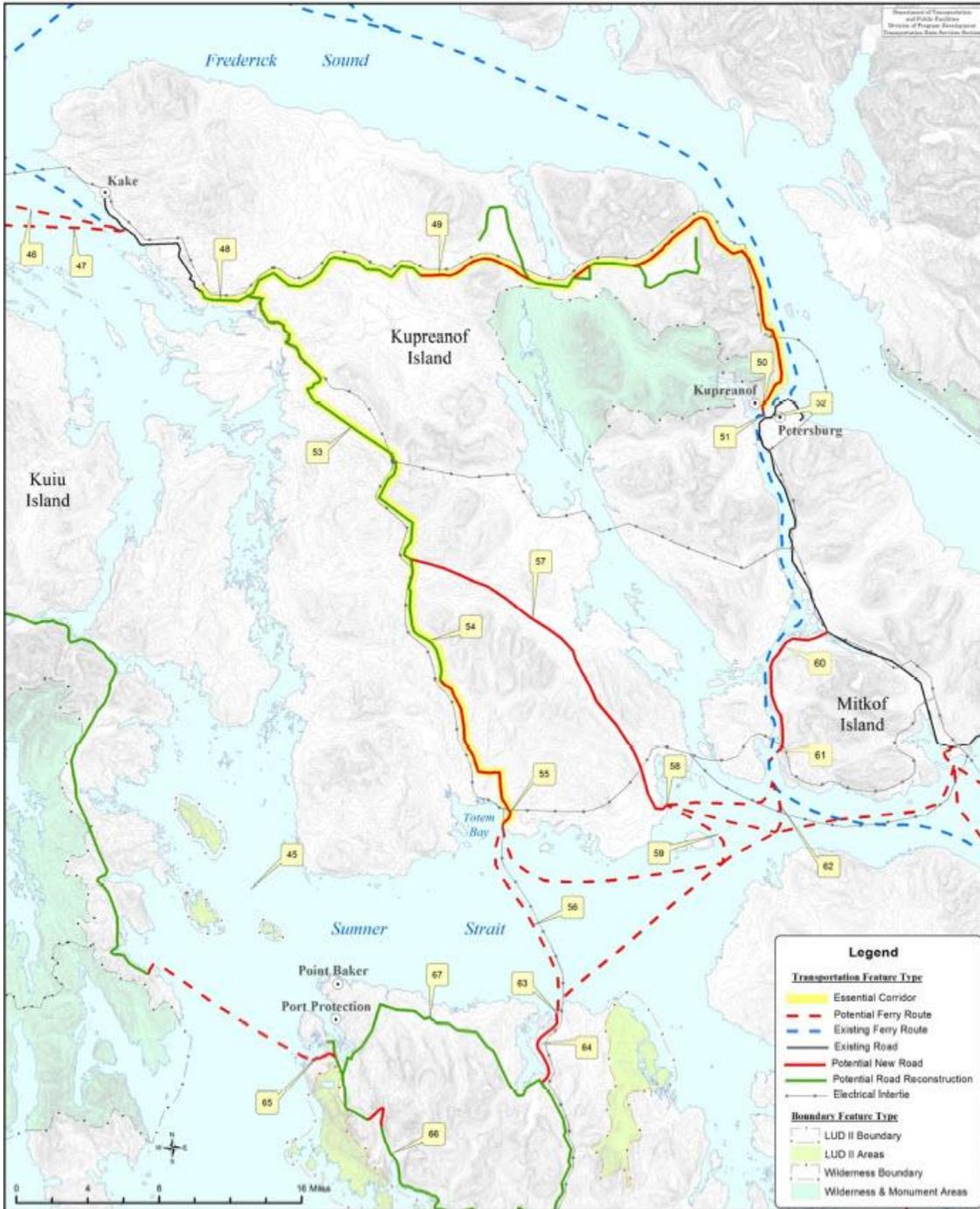
In June 2014, ADOT&PF published a draft of the 2014 SATP which, like the 2004 SATP report discussed in the previous section, is a component of the broader Alaska Statewide Transportation Plan. One of the recommendations presented in this draft is the construction of a road connecting the communities of Kake and Petersburg.

The 2014 Draft SATP cites City of Kake Resolution No. 2008-010, which supports the construction of the proposed road and Intertie connecting Kake and Petersburg. The 2004 SATP recorded that the residents of Kake did not support the project, so the City’s resolution may represent a shift in how supportive residents are of the project. The 2014 Draft SATP notes that the Intertie project is

independent from the proposed road, but also states that construction of the proposed road has the potential to lower the construction cost of the proposed Intertie.

Figure 3 displays the proposed routes for the road and ferry connections presented in the 2014 Draft SATP. Many of the routes presented in this draft report mirror the routes presented in the 2004 SATP, but also include the new route options that are being considered for this proposed project.

Figure 3. 2014 Draft SATP Kupreanof Island Corridors



Source: ADOT&PF, 2014

In 2012, the Alaska State Legislature appropriated \$40 million to the Kake Access project (Kake Access Need ID 3028), which is believed to be sufficient funding to construct the proposed road. This cost estimate was based on the construction cost of 22 miles of new single lane unpaved roadway and bridges and the improvement of 23 miles of existing logging roads in the area. The 2014 Draft SATP also identifies the need for a shuttle ferry to cross the Wrangell Narrows to Petersburg that would operate similar to the Ketchikan airport ferry that is currently operated by the AMHS.

In accordance with the National Environmental Policy Act, a Notice of Intent to develop an EIS was published in the Federal Register in January, 2013. The EIS is expected to require up to three years to reach a Record of Decision. The 2014 Draft SATP shows the proposed road and ferry connection between Kake and Petersburg as completed and operational starting in 2020.

## **2.4 2004 Northern Panhandle Community Survey**

In October 2004, McDowell Group, Inc. conducted a survey of households in the Northern Panhandle region of Southeast Alaska as part of the Sitka Access EIS and Northern Panhandle Transportation Study prepared for ADOT&PF. A total of 304 randomly selected telephone surveys were completed in the nine communities of Hoonah, Kake, Gustavus, Angoon, Pelican, Tenakee Springs, Port Alexander, Elfin Cove and Baranof Warm Springs. Many of the results from the 2004 Northern Panhandle Community Survey are comparable to the results of the October 2014 Kake Access Transportation Survey presented in this report (Appendix A). The results from the 2004 Panhandle Community Survey show that residents of Kake saw Juneau as the most important community to have access to followed by Sitka for both ferry and air travel. The survey also reported that residents of Kake most commonly travel to Juneau and Sitka for shopping, medical, and work-related purposes

## **2.5 Transportation Patterns**

The two main modes of transportation in this road scarce region of Alaska are ferry and air. The following section summarizes current and historical transportation networks and patterns in the study area.

### **2.5.1 Alaska Marine Highway System Data**

In 2013, AMHS operated 22 different ferry routes that called in Kake Harbor a total of 161 times. Table 3 lists all of the route combinations that included a stop in Kake in 2013. Of the ships arriving in Kake, 59 percent came from Petersburg, 21 percent from Sitka, and 19 percent from Juneau. Of the ships departing from Kake, 41 percent went to Petersburg, 32 percent to Sitka, and 26 percent to Juneau. Hoonah accounted for the remaining one percent of arrivals and departures to and from Kake.

**Table 3. AMHS Routes That Called in Kake Harbor, 2013**

<b>AMHS Routes</b>	<b>Summer</b>	<b>Winter</b>	<b>Total</b>
HNS-JNU-KAE-PSG-WRG-KTN	0	2	2
JNU-HNH-KAE-PSG-WRG-KTN-YPR	0	2	2
JNU-HNH-SIT-KAE-PSG-WRG-KTN	0	3	3
JNU-HNH-SIT-KAE-PSG-WRG-KTN-YPR	0	20	20
JNU-KAE-PSG-KTN-YPR	1	0	1
JNU-KAE-PSG-WRG-KTN-YPR	12	6	18
JNU-SIT-KAE-PSG-WRG-KTN-YPR	10	0	10
KTN-WRG-PSG-KAE-JNU	0	23	23
KTN-WRG-PSG-KAE-JNU-HNS-SGY	0	1	1
KTN-WRG-PSG-KAE-SIT-HNH-JNU	0	4	4
KTN-WRG-PSG-KAE-SIT-HNH-JNU-HNS	0	1	1
KTN-WRG-PSG-KAE-SIT-JNU	0	1	1
SGY-HNS-JNU-HNH-SIT-KAE-PSG-WRG-KTN-YPR	0	1	1
SGY-HNS-JNU-KAE-PSG-WRG-KTN-YPR	9	0	9
YPR-KTN-PSG-KAE-JNU	1	0	1
YPR-KTN-WRG-PSG-KAE-HNH-JNU-HNS	0	1	1
YPR-KTN-WRG-PSG-KAE-JNU	11	5	16
YPR-KTN-WRG-PSG-KAE-JNU-HNS	0	1	1
YPR-KTN-WRG-PSG-KAE-SIT-HNH-JNU	0	1	1
YPR-KTN-WRG-PSG-KAE-SIT-HNH-JNU-HNS	0	22	22
YPR-KTN-WRG-PSG-KAE-SIT-JNU	22	0	22
YPR-KTN-WRG-PSG-KAE-SIT-JNU-HNS	0	1	1
<b>Totals</b>	<b>66</b>	<b>95</b>	<b>161</b>

Source: AMHS, Annual Traffic Volume Report, 2013

\*Port Codes: *HNH- Hoonah, HNS- Haines, JNU- Juneau, KAE- Kake, KTN-Ketchikan, PSG-Petersburg, SGY-Skaway, SIT- Sitka, WRG- Wrangell, YPR- Prince Rupert*

The volume of passengers embarking and disembarking in Kake has been relatively stable over the past five years. Table 4 displays the origin of all passengers who disembarked in Kake and the destination of the passengers who embarked in Kake between 2009 and 2013. On average, 63 percent of passengers embarking in Kake traveled to Juneau, 13 percent to Sitka, 11 percent to Petersburg and 9 percent to Ketchikan. The volume of passengers traveling to Juneau from Kake is more than double the volume of passengers headed to all other destination combined during each of the five years analyzed. Over the past five years 12,466 AMHS passengers have embarked and 12,919 AMHS passengers have disembarked in Kake.

Similar to embarking passenger trends, the origin of disembarking passengers over the past five years was Juneau 63 percent of the time; Sitka and Petersburg were both the origin 12 percent of the time, and Ketchikan was the origin 9 percent of the time. This similarity in origin and destination traffic volumes for Kake travelers would be expected since most passengers plan for round trips to and from their destination of choice.

**Table 4. AMHS Passenger Traffic Volumes by Origin and Destination, 2009–2013**

City	2009	2010	2011	2012	2013	Total	Percent of Total
<b>Destination of Passengers Embarking in Kake</b>							
Juneau	1,409	1,702	1,538	1,645	1,582	7,876	63.2
Sitka	290	360	288	352	351	1,641	13.2
Petersburg	338	239	261	259	323	1,420	11.4
Ketchikan	246	175	250	232	180	1,083	8.7
Wrangle	39	27	75	47	61	249	2.0
Prince-Rupert	11	3	25	16	31	86	0.7
Hoonah	8	1	1	2	29	41	0.3
Angoon	0	32	1	0	0	33	0.3
Haines	0	0	1	27	2	30	0.2
Bellingham	2	0	0	4	0	6	0.0
Skagway	1	0	0	0	0	1	0.0
<b>Total</b>	<b>2,344</b>	<b>2,539</b>	<b>2,440</b>	<b>2,584</b>	<b>2,559</b>	<b>12,466</b>	<b>100.0</b>
<b>Origin of Passengers Disembarking in Kake</b>							
Juneau	1,675	1,685	1,431	1,668	1,643	8,102	62.7
Sitka	230	387	364	343	286	1,610	12.5
Petersburg	274	261	341	315	342	1,533	11.9
Ketchikan	228	224	243	221	220	1,136	8.8
Wrangle	48	28	58	46	80	260	2.0
Prince-Rupert	10	6	32	22	36	106	0.8
Hoonah	21	3	21	4	37	86	0.7
Haines	18	2	2	23	11	56	0.4
Skagway	29	1	0	0	0	30	0.2
<b>Total</b>	<b>2,533</b>	<b>2,597</b>	<b>2,492</b>	<b>2,642</b>	<b>2,655</b>	<b>12,919</b>	<b>100.0</b>

Source: AMHS, Annual Traffic Volume Report, 2009–2013

Table 5 displays the origin and destination of embarking and disembarking vehicles in Kake over the past five years. The data displayed in Table 5 only account for the vehicles transported and do not account for the drivers of these vehicles, since AMHS also transported unaccompanied vehicles on its routes. If the vehicle being transported is accompanied by a driver, that driver is counted in the passenger data displayed in Table 4. Similar to the trends identified for passenger traffic volumes in Table 4, embarking and disembarking vehicle volumes have remained relatively stable over the past five years and the origin and destination volumes for each year track very closely with one another, suggesting that the majority of the trips taken are booked as round trips. Juneau is the destination for 58 percent of vehicles departing Kake, Petersburg is the destination 17 percent of the time, and Sitka is the destination 13 percent of the time.

**Table 5. AMHS Vehicle Traffic Volumes by Origin and Destination, 2009–2013**

City	2009	2010	2011	2012	2013	Total
<b>Destination of Vehicles Embarking in Kake</b>						
Juneau	238	297	286	314	326	1,461
Petersburg	89	67	88	73	108	425
Sitka	73	68	60	68	61	330
Ketchikan	37	38	40	41	23	179
Wrangle	8	7	23	22	11	71
Prince-Rupert	8	2	10	6	9	35
Hoonah	8	2	1	0	0	11
Haines	0	0	0	3	1	4
Skagway	3	0	0	0	0	3
Angoon	0	2	0	0	0	2
Bellingham	1	0	0	1	0	2
<b>Total</b>	<b>465</b>	<b>483</b>	<b>508</b>	<b>528</b>	<b>539</b>	<b>2,523</b>
<b>Origin of Vehicles Disembarking in Kake</b>						
Juneau	285	312	298	346	338	1,579
Petersburg	87	72	106	92	112	469
Sitka	39	67	85	64	64	319
Ketchikan	42	36	46	37	36	197
Wrangle	9	7	23	19	14	72
Prince-Rupert	5	5	11	12	13	46
Hoonah	8	0	6	1	2	17
Haines	3	3	2	1	3	12
Skagway	3	0	0	0	0	3
Angoon	0	1	0	0	0	1
Gustavus	0	1	0	0	0	1
<b>Total</b>	<b>481</b>	<b>504</b>	<b>577</b>	<b>572</b>	<b>582</b>	<b>2,716</b>

Source: AMHS, Annual Traffic Volume Report, 2009–2013

### 2.5.2 Air Travel Data

Bureau of Transportation Statistics (BTS) data from 2013 show that nearly all of the air travel by certificated air carriers to and from Kake involves flights between Kake and Juneau. For flights to Kake, departures from Juneau accounted for 98 percent of the total flights, 98 percent of the seat capacity, 98 percent of the passengers and effectively 99 percent or greater of the delivered freight and mail (see Table 6). The data show single digit counts of flights from Angoon (six), Wrangell (three), and Hoonah, Klawock, and Petersburg (two each). The data tell a similar story for flights originating from Kake with 98 percent of departures, 98 percent of the seat capacity, 97 percent of the passengers, and effectively 100 percent of the departing freight and mail heading to Juneau. The data also show single digit flights to Hoonah (four), Petersburg (four), Klawock (two), and one flight each to Ketchikan, Tenakee, and Wrangell.

**Table 6. Flights to/from Kake to Other Locations, 2013**

Flights Departing to Kake					
Flights From	Departures	Seats	Passengers	Freight	Mail
Juneau	601	4,806	1,712	87,586	97,256
All Other Locations	15	96	30	308	1,352
<i>Portion from Juneau (%)</i>	98	98	98	99	99
<b>Total</b>	<b>616</b>	<b>4,902</b>	<b>1,742</b>	<b>87,894</b>	<b>98,608</b>
Flights Originating in Kake					
Flights To	Departures	Seats	Passengers	Freight	Mail
Juneau	602	4,809	1,679	16,213	15,730
All Other Locations	13	86	45	0	140
<i>Portion to Juneau (%)</i>	98	98	97	100	99
<b>Total</b>	<b>615</b>	<b>4,895</b>	<b>1,724</b>	<b>16,213</b>	<b>15,870</b>

Source: Bureau of Transportation Statics, Research and Innovative Technology Administration, 2014

Kake is an EAS community, which means that a single air carrier receives a subsidy to provide historical levels of airline services to the community. The EAS Program is a federal government program implemented after the deregulation of the U.S. airline industry in 1978, to ensure that a minimum level of commercial air service continued to be available in rural areas of the country. In Alaska, the program subsidizes commercial air flights to 42 Alaskan communities that are located completely off the road system or are a multi-hour drive to the nearest airport with connections to the larger air system. Routes supported by the program routinely come up for bid as contracts expire or air carriers notify EAS that they no longer wish to continue to serve the selected route. In Kake’s case, the EAS contract is held by Air Excursions, LCC, which is now known as Alaska Seaplanes. In 2013, Alaska Seaplanes performed 96 percent of the flights to and from Kake and moved 98 percent of the passengers, 99 percent of the freight, and 99 percent of the mail coming and going from the community (see Table 7). BTS data also registered flights by Wings of Alaska (25), Alaska Seaplane Service (17), and Alaska Central Express (2).

**Table 7. Air Service Providers, 2013**

Airline	Departures	Seats	Passengers	Freight	Mail
Alaska Seaplanes (prev. Air Excursions)	1,187	9,548	3,386	103,043	112,790
All Other Providers	44	249	80	1,064	1,688
Portion Provided by Alaska Seaplanes	96	97	98	99	99
<b>Total</b>	<b>1,231</b>	<b>9,797</b>	<b>3,466</b>	<b>104,107</b>	<b>114,478</b>

Source: Bureau of Transportation Statics, Research and Innovative Technology Administration, 2014

A key informant interview indicated that air service is also provided from Sitka by Harris Air, whose service is “offered” but not “scheduled”. In short, Harris Air will fly to Kake from Sitka around 10:30 AM each day on their way to Petersburg if at least one customer is available who is willing to pay the \$190 one-way fee. A call to Harris Air indicated that during the summer the company takes five to six passengers per week to Kake while in the off-season (September-May) the passenger count is closer to one passenger per week.

## 2.6 2014 McDowell Group Telephone Survey

While Kake and Petersburg are geographically close to one another, transportation data, interviews, and surveys reveal that both communities are more connected to Juneau and in Kake’s case, Sitka, than they are to each other. Travel to Juneau predominates whether residents travel by air or ferry. Sitka is certainly foremost in the minds of Kake residents even though AMHS data indicate that Petersburg receives nearly as many vehicle embarkations originating in Kake as Sitka. This section discusses why residents travel, where they travel, and how they get to the first non-stop destination from their point of origin.

In October and November 2014 McDowell Group conducted a telephone survey of Kake and Petersburg/Kupreanof (hereafter Petersburg) residents asking them about their current travel patterns and their likely usage of a road between Kake and Petersburg across a number of scenarios.<sup>3</sup> The survey revealed that Juneau is the most important “non-stop” travel destination for residents of both Kake and Petersburg. In Kake, 100 percent of respondents who reported taking trips on the ferry, and 96 percent of those who flew, reported Juneau as their most important, or second most important, destination (see Table 8). These respondents listed Sitka as their second most important destination via both ferry and air. In Petersburg, 87 percent of respondents who used the ferry and 83 percent of those who traveled by air selected Juneau as their most important or second most important non-stop travel destination. Interestingly, more Petersburg residents selected “None” than selected Sitka or Ketchikan as their second most important non-stop destination. Ketchikan came in a close third with Sitka a distant fourth.

**Table 8. Most Important Community Connections by Mode, Percent Mentioning Community**

Community-Mode	Destination Community	Most Important	2nd Most Important	Total
Kake-Ferry	Juneau	98	2	100
	Sitka	2	68	70
Kake-Air	Juneau	80	16	96
	Sitka	18	66	84
Petersburg-Ferry	Juneau	81	6	87
	None	5	34	39
Petersburg-Air	Juneau	78	5	83
	None	9	32	41

Source: McDowell Group, 2014.

Petersburg and Kake respondents differed in their reasons for traveling to Juneau, whether by ferry or by air. With regards to the AMHS ferry, Kake respondents reported that nearly half of their trips had a primary purpose of shopping (see Table 9). The ability to shop in Juneau allows Kake residents to mitigate the overall cost of their groceries. In fact, a number of respondents noted that store-bought groceries in Kake aren’t much more expensive than in Petersburg because the store owner is able to restock from Juneau (i.e., Costco) at a reasonable price. Medical trips (20 percent) and work trips (12 percent) were the only other trip reasons that broached double digits for Kake respondents. Petersburg respondents gave work or business (27 percent of trips) as their most commonly reported reason for traveling to Juneau via ferry. Medical trips (18 percent), Friends/Family trips (14 percent), and Special Events (13 percent) rounded out a distant but substantial second tier.

<sup>3</sup> McDowell Group’s full survey report is found in Appendix A.

For trips via air, Kake respondents reported that 39 percent of their air trips to Juneau were for Work/Business, followed by 29 percent for medical treatment. If the report adds in Passing Through (15 percent) and Shopping (14 percent), then these four reasons account for 97 percent of reported trips via air for Kake respondents. Nearly half (48 percent) of Petersburg respondent trips to Juneau via air were to pass through on the way to another location. Work/Business (19 percent) and Friends/Family trips (15 percent) rounded out the top three and were the only other reasons to account for more than a double digit percentage of trips.

**Table 9. Reasons for Traveling to Juneau, Percent Respondents**

Reason	Ferry		Air	
	Origin Kake	Origin Petersburg	Origin Kake	Origin Petersburg
Shopping	49	13	14	4
Medical	20	18	29	9
Work/Business	12	27	39	19
Passing Through	7	9	15	48
Friends/Family	6	14	2	15
Special Events	6	13	1	4
Other	0	5	1	1

Source: McDowell Group, 2014.

Kake residents said 55 percent of their Sitka ferry trips in the last year and 68 percent of their Sitka air trips in the last year were for medical reasons (see Table 10). These high percentages reflect the fact that the majority of Kake residents are Alaska Native and Sitka is the location of the closest Southeast Alaska Regional Health Consortium (SEARHC) facility. The next most commonly cited trip reasons were Other and Shopping for the ferry and Passing Through for air trips. Petersburg respondents cited Passing Through, Work/Business, and Friends/Family as the top three reasons for their ferry trips while Work/Business and Medical were the dominant reasons for air trips.

**Table 10. Reasons for Traveling to Sitka, Percent of Respondents**

Reason	Ferry		Air	
	Origin Kake	Origin Petersburg	Origin Kake	Origin Petersburg
Medical	55	11	68	22
Other	18	8	5	5
Shopping	14	2	6	0
Work/Business	4	23	9	54
Friends/Family	4	20	0	11
Passing Through	3	31	11	6
Special Events	2	5	0	1

Source: McDowell Group, 2014.

Using the estimated portion of trips attributable to each reason for traveling and the total number of trips reported by each respondent, the study is able to estimate the number of trips to Juneau and Sitka taken by respondents in the twelve months prior to the survey. These data show that Kake respondents

most often leave the community for medical treatment (162 trips) followed by Shopping (130 trips) and Work/Business (109 trips). For Petersburg respondents, the primary reason for leaving the community via Juneau or Sitka is Passing Through on the way to another destination (543 trips), Work/Business (364 trips), and Friends/Family (226 trips). Medical trips came in fourth for Petersburg respondents at 191 trips.

**Table 11. Estimated Trips by Destination and Reason**

Reason	Destination Juneau		Destination Sitka		Both	
	Origin Kake	Origin Petersburg	Origin Kake	Origin Petersburg	Origin Kake	Origin Petersburg
Medical	96	170	65	21	161	191
Shopping	124	97	6	0	130	97
Work/Business	100	312	9	52	109	364
Passing Through	43	537	11	6	54	543
Friends/Family	16	215	0	11	16	226
Special Events	14	97	0	1	14	98
Other	2	32	5	5	7	36

Source: Northern Economics Estimates from McDowell Group, 2014.

### 2.6.1 Kake Travel to Petersburg

An item the team heard during the interview process was that Kake and Petersburg residents used to interact more when the AMHS system made more frequent trips between the communities and that with changes in ferry service came a decline in opportunities for residents of the two communities to visit each other. This anecdotal information is reflected in the McDowell Group survey data. None of the Kake respondents listed Petersburg as their most important community for air or ferry travel and just 4 percent and 10 percent of respondents listed Petersburg as their second most important community respectively (see Table 12).

**Table 12. Most Important Community Connections by Mode, Results for Petersburg from Kake**

Destination Community	Most Important	2nd Most Important	Total
Ferry	0	10	10
Air	0	4	4

Source: McDowell Group, 2014.

This pattern is further borne out by the survey results in the estimates of the number of trips made from Kake to Juneau, Sitka, and Petersburg. Totaling the estimates in Table 11 and Table 13 results in 491 trips in the past year by Kake respondents to Juneau, 95 to Sitka, and just 54 to Petersburg.

**Table 13. Reasons for Traveling to Petersburg from Kake**

Reason	Portion of Respondents (%)		Number of Trips	
	Ferry	Air	Ferry	Air
Medical	36	39	13	7
Passing Through	25	11	9	2
Friends/Family	17	22	6	4
Work/Business	8	11	3	2
Shopping	6	17	2	3
Special Events	6	0	2	0
Other	3	0	1	0

Source: Northern Economics Estimates from McDowell Group, 2014.

Data in Table 13 confirm that Petersburg is already a medical destination for certain Kake residents, with some attraction for family and friends, shopping and special events. The study team believes, based on the interviews and the fact that SEARHC does not offer many services in Petersburg to Alaska Native residents of Kake that it does not already offer in Kake, that much of this medical travel is by non-Alaska Native members of the Kake community.

## 2.7 Changes in Travel Preferences

The results from the 2014 McDowell Group Telephone Survey discussed above can be compared with the Northern Panhandle Transportation Study results collected in 2004 to see how travel preferences of Kake residents have changed over the past 10 years. The questions asked and the total sample size of these two surveys are similar enough to use in a comparative analysis that is presented in this section. The findings of the Northern Panhandle Transportation Study can be found in Appendix B of this report.

Table 14 summarizes the results from the two surveys regarding the importance of access to other Southeast Alaska communities. Respondents from Kake in both surveys indicated that Juneau is the most important community to have both ferry and air access to, followed by Sitka. Both Juneau and Sitka strengthened their positions as the first and second most important communities for Kake residents. For example, in 2004, 71 and 69 percent of Kake respondents said Juneau was the most important community for access by ferry and air, but by 2014 those percentages increased to 98 and 80 percent respectively. At the same time, in 2004, 55 percent and 53 percent of respondents said that Sitka was their number two choice for ferry and air. These numbers increased to 68 and 66 percent respectively in 2014.

**Table 14: Survey Result Comparison- Community Access (2004 vs 2014)**

	2004 Northern Panhandle Community Survey (n=56)	2014 Kake Access Transportation Survey (n=50)
	(%)	
Which Southeast community is most important for you to have access to by Ferry?		
Juneau	71	98
Sitka	19	2
Which Southeast community is second most important for you to have access to by Ferry?		
Juneau	6	2
Sitka	55	68
Which Southeast community is most important for you to have access to by air?		
Juneau	69	80
Sitka	21	18
Which Southeast community is second most important for you to have access to by air?		
Juneau	22	16
Sitka	53	66

Source: McDowell Group, Inc., 2004. McDowell Group, Inc., 2014

Compared to the 2004 survey, the average annual number of trips made by Kake residents to Juneau in 2014 has increased by 32 percent and the average annual ferry and air trips both saw increases from 2.7 to 4.0 and 3.4 to 5.4, respectively (Table 15). The comparison of survey results also shows a shift in the purpose of Juneau ferry trips taken by Kake residents from a more even distribution between shopping and medical (28 percent each) in 2004 to predominantly shopping (49 percent) in 2014. The purpose of air trips collected in the 2014 survey followed a similar trend to the results collected in 2004 with work being the most popular followed by medical and shopping.

**Table 15: Survey Result Comparison- Frequency and Purpose (2004 vs 2014)**

	2004 Northern Panhandle Community Survey (n=56)	2014 Kake Access Transportation Survey (n=50)
<b>Travel to Juneau</b>		
In the past 12 months, how many trips have you made to Juneau?		
Traveled to Juneau (%)	89	100
Average number of trips (including non-travelers)	6.0	7.9
By ferry	2.7	4.0
By air	3.4	5.4
Purpose of Juneau ferry trips (Top 3: % of total trips)		
Shopping	28	49
Medical	28	20
No Primary purpose/multiple reasons	24	
Purpose of Juneau air trips (Top 3: % of total trips)		
Work	29	39
Medical	21	29
Shopping	17	14
<b>Travel To Sitka</b>		
In the past 12 months, how many trips have you made to Sitka?		
Traveled to Sitka (%)	84	90
Average number of trips (including non-travelers)	4.3	4.1
By ferry	2.8	2.8
By air	1.5	2.3
Purpose of Sitka ferry trips (Top 3: % of total trips)		
Shopping	65	14
Medical	6	55
No Primary purpose/multiple reasons	4	18
Purpose of Sitka air trips (Top 3: % of total trips)		
Work	72	9
Medical	12	68
Shopping	4	6
<b>Travel To Petersburg</b>		
In the past 12 months, how many trips have you made to Petersburg?		
Traveled to Petersburg (%)	56	41
Average number of trips (including non-travelers)	1.6	1.1
By ferry	1.2	1.8
By air	0.4	0.9
Purpose of Petersburg ferry trips (Top 3: % of total trips)		
Medical	6	36
Work	11	8
Shopping	25	6
Purpose of Petersburg air trips (Top 3: % of total trips)		
Medical	28	39
Work	45	11
Shopping	15	17

Source: McDowell Group, Inc., 2004. McDowell Group, Inc., 2014

When comparing survey results regarding travel to Sitka, Kake residents have slightly decreased the average number of trips they take per year and although the number of ferry trips remained unchanged at 2.8, trips to Sitka by air increased by 53 percent from 1.5 air trips in 2004 to 2.3 trips in 2014. The purpose of ferry and air trips to Sitka has shifted from primarily shopping in 2004 to mainly medical in 2014. The 2014 survey results show a slight decrease in average annual trips taken by Kake residents to Petersburg, from 1.6 trips per year to 1.1. Similar to the results on travel to Sitka, the purpose of trips to Petersburg has also shifted from mainly shopping and work in 2004 to primarily medical in 2014.

## 2.8 2014 Community and Industry Interviews

As part of this analysis the study team completed 16 interviews with individuals representing key organizations, agencies, and businesses in the Kake, Petersburg, and Kupreanof areas. The interviewees represented tribal, government, health, education and private business entities and provided commentary on how the proposed road might affect their organization and the broader community. Interviewees were asked a series of six open-ended questions regarding how the proposed connection would impact their organization, community, and the region in general (reference Appendix C for a sample interview template). Many interviewees requested that their comments not be directly attributed to them, so this report will discuss the results of the interviews by general topic as opposed to specific interviewee.

The topics receiving the most positive comments overall were Access to Petersburg, Delivery of Supplies, Access to Kake, and Tourism Potential. The topics receiving the most negative comments were Road Cost and Maintenance, Emergency Response and Safety, and Ferry Terminal Location. The topic with the most diverse comments was Cultural Impacts and Changes, and the topic about which respondents expressed the most confusion was the link the proposed road would have with the proposed electrical intertie. Table 16 includes all of the topics brought up during the community and industry interviews and notes the number of positive or negative mentions. The table is sorted by number of positive mentions first in descending order and then by negative mentions in ascending order. Thus, the topics in each overarching category are generally listed from most positive to most negative. In summary:

- Within the *Business and Organization Effects* category, the most positive mentions went to the reduced cost and increased frequency of supply deliveries from Petersburg to Kake. The only negative mention was of the potential for increased competition.
- Within the *Transportation Patterns* category, the most frequent positive mentions were about increased access to Kake and Petersburg. Concerns about the location of the ferry terminal being too far from Petersburg were the most frequently mentioned negative.
- Within the *Community Concerns* category the most frequently mentioned concerns (for negative effects) were concerns about maintenance and emergency services along the road.

**Table 16. Most Common Interview Responses (+/- Counts)**

Category	Overall Mentions		Total Mentions
	Positive	Negative	
<b>Business and Organizational Effects</b>			
Delivery of Supplies	7	0	7
Shipping frequency	4	0	4
Labor, Maintenance, Skills	2	0	2
Employment Changes	1	0	1
Training	1	0	1
Stimulate Econ Development.	1	0	1
Increased Competition	1	1	2
<b>Changes in Transportation Patterns</b>			
Access to Petersburg	9	1	9
Access to Kake	6	0	6
Access to/from Seattle	3	0	3
Reduction in Air Charters	3	0	3
Shift to/from Juneau	3	1	1
Medical Access	3	1	1
Reduction of Ferry Service	1	0	1
School Travel	1	1	2
Shift to/from Sitka	0	1	1
Ferry Service	0	1	1
Barge Service	0	1	1
No Change	0	2	2
Selected Route	0	2	2
Ferry Terminal Location	0	6	6
<b>Overall Effects on Communities</b>			
Tourism	5	0	5
Positive cultural effects	4	0	4
Transportation Security	1	0	1
Harbor Use	1	0	1
Construction Impacts	1	0	1
Increased Demand for Services	1	1	2
Won't Use, Fund Other Projects	0	4	4
<b>Community Concerns</b>			
Population Pressure, Trash	0	1	1
Wildlife Impacts	0	1	1
Subsistence Impacts	0	1	1
Link to Intertie	0	3	3
Negative cultural effects	0	5	5
Road Cost & Maintenance	0	7	7
Emergency Response, Safety	0	7	7

Source: Northern Economics, Inc. 2014 and McDowell Group, 2014

### 3 Assessment of Potential Effects of the Proposed Project

The following section follows a question and answer format to present the findings and conclusions reached in this study.

#### 3.1 How Much Would the Road be Used?

McDowell Group’s 2014 Telephone Survey asked Kake and Petersburg residents how many times in a year they would likely use the road for complete trips between Kake and Petersburg across three different time/cost scenarios and how many times they would use the road for non-round trip (e.g., recreational, subsistence) purposes. The three scenarios included in the survey were one-way costs of:

- \$30 plus three hours of travel time;
- \$50 plus four hours of travel time;
- \$100 plus six hours of travel time.

As noted below, the study team used prevailing wage rates to convert these scenarios into effective one-way travel cost in dollars.

The analysis’ mean estimates for round-trips from Kake range from 1,100 to 3,600 per year depending on the scenario with an additional 12,000 partial trips from residents recreating, pursuing subsistence activities, or using the road for other purposes. Petersburg residents would generate another 1,500 to 4,000 round-trips per year with another 15,600 partial trips. These estimates do not include any activities by non-residents. The following section discusses the effect of the road on travel demand both for the new road and for existing travel patterns.

##### 3.1.1 Demand Forecast

Estimated average earnings for residents of Kake and Petersburg, based on ADOLWD Alaska Local and Regional Information (ALARI) data, and average earnings, based on data from the U.S. Census Bureau’s American Community Survey (ACS) are shown in Table 17.

**Table 17. Estimated Average Earnings, Kake and Petersburg**

	Kake	Petersburg
<b>Data from Alaska Local and Regional Information</b>		
Total wages (\$)	5,840,794	34,248,066
Residents Employed	258	1,147
Average wage rate (\$/hour)	10.88	14.36
<b>Data from American Community Survey, 2009–2013</b>		
Per capita income (\$/year)	20,314	36,198
Total annual income (\$)	11,314,898	106,711,704
Average earnings rate (\$/hour)	13.30	23.33

Source: ADOLWD (2014), U.S. Census Bureau (2014), and Northern Economics, Inc. analysis.

Note: Average wage rate calculation assumes 2,080 working hours per year. Per capita income data from ACS applies to all residents (estimated at 557 in Kake and 2,948 in Petersburg by ADOLWD). Total annual income estimate using ACS data assumes all income is earned by the adult population (estimated at 409 in Kake and 2,199 in Petersburg by ADOLWD).

The average earnings rate is used to calculate the time cost associated with three road options presented in the survey. The analysis assumes an individual’s leisure rate, or the value assigned to their time when not working, is one-third of their annual earnings rate. This value is applied to the time associated with each trip option to develop a total cost of that trip.

In a survey administered in Kake and Petersburg, respondents were asked how many trips they would take to or through the other community via the proposed road and shuttle ferry, under three options:

- A: A one-way trip time of 3 hours and a trip cost of \$30, including gas and ferry costs
- B: A one-way trip time of 4 hours and a trip cost of \$50, including gas and ferry costs
- C: A one-way trip time of 6 hours and a trip cost of \$100, including gas and ferry costs

Table 18 shows responses from Kake residents. Under option A, respondents indicated they would take an average of 8.8 purpose trips to or through Petersburg under the faster and less expensive option. These are assumed to be round trips. As expected, as the total cost of the trip increases under options B and C, the mean number of trips declines to 5.8 and 2.7 annual trips, respectively.

**Table 18. Respondents’ Indicated Number of Trips to or Through Petersburg by Kake Residents, by Time and Cost Option**

Option	Trip Time (hours)	Direct Trip Expense (\$)	Cost of Time (\$)	Total Trip Cost (\$)	Mean Number of Trips	Standard Error in Number of Trips
A	3	30.00	13.30	43.30	8.8	2.6
B	4	50.00	17.73	67.73	5.8	1.1
C	6	100.00	26.60	126.60	2.7	0.7

Source: McDowell Group (2014) and Northern Economics, Inc. analysis

Table 19 shows the survey results for Petersburg residents. As the larger of the two communities, Petersburg residents have fewer reasons to use the proposed link between the two communities, and even under the least expensive option, respondents only indicated they would take 1.8 trips to or through Kake annually. This dropped slightly to 1.5 trips under option B and to 0.7 trips under option C.

**Table 19. Respondents’ Indicated Number of Trips to or Through Kake by Petersburg Residents, by Time and Cost Option**

Option	Trip Time (hours)	Direct Trip Expense (\$)	Cost of Time (\$)	Total Trip Cost (\$)	Mean Number of Trips	Standard Error in Number of Trips
A	3	30.00	23.33	53.33	1.8	0.2
B	4	50.00	31.11	81.11	1.5	0.2
C	6	100.00	46.66	146.66	0.7	0.2

Source: McDowell Group (2014) and Northern Economics, Inc. analysis

Respondents were also asked about the number of trips they would make for subsistence or recreational purposes if there were a new road. These are assumed to be partial trips, and the destination along the proposed road is unknown. No costs were explicitly associated with these trips. Kake residents indicated they would take an average 30.1 trips, with a standard error of 9.5 trips, and Petersburg residents would take an average of 7.1 trips (standard error of 1.5).

These survey results were applied to the total populations of Kake and Petersburg, which are 557 and 2,948 (ADOLWD 2014), respectively. Table 20 estimates of the total number of one-way trips Kake residents would take on the proposed road and ferry link. Under the lowest cost option A, residents are projected to take nearly 16,000 trips, with a range of 6,000 to 26,000. About 75 percent of the trips would be for subsistence or recreational purposes. Under the highest cost option, trips to or through Petersburg would decline to 1,100 and only 8 percent of total trips would be to the larger community.

**Table 20. Estimated Number of Annual Trips, Kake, by Cost of Trip**

Option	Total Trip Cost, One Way (\$)	Estimated Number of Annual Trips		
		Mean	Lower Bound	Upper Bound
<b>Trips to or Through Petersburg</b>				
A	43.30	3,600	1,500	5,700
B	67.73	2,400	1,500	3,300
C	126.60	1,100	500	1,700
<b>Subsistence and Recreation Trips</b>				
All		12,300	4,500	20,100
<b>Total Trips</b>				
A	43.30	15,900	6,000	25,800
B	67.73	14,700	6,000	23,400
C	126.60	13,400	5,100	21,800

Source: Northern Economics Estimates from McDowell Group, 2014.

Table 21 estimates the total number of one-way trips Petersburg residents would take on the proposed road and ferry link. Under the lowest cost option A, residents are projected to take over 19,500 trips, 80 percent of which would be for subsistence or recreation. The range of trips expected under option A is 12,000 to 27,000. Under the highest cost option, trips to or through Kake would decline to 1,500 but use of the road would still range from 9,700 to 24,600 trips due to subsistence and recreation.

**Table 21. Estimated Number of Trips, Petersburg, by Cost of Trip**

Option	Total Trip Cost, One Way (\$)	Estimated Number of Trips		
		Mean	Lower Bound	Upper Bound
<b>Trips to or Through Kake</b>				
A	53.33	4,000	3,100	4,800
B	81.11	3,300	2,400	4,200
C	146.66	1,500	700	2,400
<b>Subsistence and Recreation Trips</b>				
All		15,600	9,000	22,200
<b>Total Trips</b>				
A	53.33	19,600	12,100	27,000
B	81.11	18,900	11,400	26,400
C	146.66	17,200	9,700	24,600

Source: Northern Economics Estimates from McDowell Group, 2014.

Appendix D: Trip Demand Curves contains the estimated demand curves for trips by Kake and Petersburg residents.

### **3.2 How Might the Road Change Travel Patterns?**

Interviewees were also asked if they thought the proposed road and ferry connection between Kake and Petersburg would have an impact on transportation patterns in the region. One of the most common responses to this question from respondents in both Kake and Petersburg was the concern that the proposed road would have a negative impact on ferry service. Interviewees in Kake expressed concern about ferry service being reduced or even ceasing in Kake, forcing residents to travel to Petersburg to access the AMHS network, and interviewees in Petersburg expressed the concern that the exact opposite would happen. It is apparent that residents in both Kake and Petersburg value frequent ferry service and concerns about how a road may impact that service were brought up throughout the majority of the interviews conducted.

Some of the respondents also mentioned that a road connection may increase tourism and recreational travel between the two communities as well as from people outside of the region. The idea of travel to a different community for a weekend to attend a festival, visit family or to just get out of town seemed generally appealing to most respondents. There were concerns mentioned by residents in Kake about the lack of housing and dining options for visitors in their community, concerns that may become an issue if the proposed road were to increase tourism and recreational travel substantially.

Along with recreational travel, respondents also thought that the proposed road might encourage more people to commute between the two communities for seasonal or temporary jobs. Commuting between Kake and Petersburg is currently cost prohibitive to most and requires air taxi or ferry service. If travel costs were reduced by using the proposed road, respondents in Kake and Petersburg said that commuting between the two communities would become more appealing.

Not all respondents thought that this road would impact travel patterns, though. Many of the interviewees did not think that the proposed road would get used very often and that the current travel patterns of people in Kake and Petersburg would remain the same. Due to the lack of larger chain stores in Petersburg, many of the Kake residents interviewed thought that most people in their community would continue to use the ferry to travel to Juneau for larger grocery trips. Interviewees from both communities, including medical providers, also mentioned that medical travel will most likely still be routed to Sitka, where the SEARHC facility is located. While Petersburg does have a hospital, it does not have the range of services that are available in Sitka and is not seen as a potential substitute by SEARHC. Some non-Native respondents from Kake mentioned that they could get routine medical and dental services done in Petersburg instead of making the trip to Sitka, but would still have to travel to outside the immediate region for any major medical procedures.

### **3.3 How Would the Road Affect Accessibility to Travel Options?**

In Southeast Alaska, travel between communities is generally accomplished by traveling on AMHS ferries or through air travel. A review of current travel schedules indicates that a road between Kake and Petersburg would greatly increase accessibility to travel options and reduce overall travel and delay times, particularly ferry travel times.

### 3.3.1 Current Travel Options and Costs

The Kake Access Project would provide access to Kake from Petersburg and provide greater access to Petersburg and Petersburg’s connections to the broader transportation system to residents of Kake. The current system provides direct access to and from Kake via AMHS and air transportation. Neither of these options are both inexpensive and quick. While air travel service is regular, relatively fast, and allows for round-trip travel in a single day, it is also quite expensive with one-way flights into Kake starting at around \$155 (see Table 22). It does allow for round-trip travel in one day without the need for overnight stay, though limits on luggage and cargo space are more severe than ferry constraints.

**Table 22. Current Transportation Options from Kake, by Air**

City Pair	Current Frequency	Provider	One-Way Cost (\$)
Kake-Juneau	Twice Daily	Alaska Seaplanes	155
Kake-Sitka	Once Daily-Scheduled	Alaska Seaplanes	150
Kake-Sitka	Once Daily on Demand	Harris Air	190
Kake-Petersburg	Once Daily on Demand	Harris Air	190

Source: Alaska Seaplanes and Harris Air, 2014

AMHS is less expensive, and passengers can take their cars (including goods within the vehicle), but the service is less frequent and takes longer. Current AMHS schedules for 2014/2015 show that Kake (KAE) averages 4.9 direct departures per month to Petersburg (PSG), 3 direct departures per month to Juneau (JNU), and 4 direct departures to Sitka (SIT). For arrivals there are 6.9 direct arrivals per month from Petersburg, 1.8 per month from Juneau, and 3.3 from Sitka. One implication of this schedule is that return direct trips to Juneau must be carefully timed as there might only be one direct arrival from Juneau per month. In January 2015, April 2015, and June 2015, AMHS has no direct arrivals from Juneau scheduled for Kake (see Table 23).

**Table 23. Current Transportation Options from Kake, AMHS**

Month	Direct Departures from KAE*			Direct Arrivals to KAE		
	PSG	JNU	SIT	PSG	JNU	SIT
January	4	5	4	9	0	4
February	4	4	4	8	1	3
March	4	3	4	7	1	3
April	3	4	4	8	0	3
May	3	0	5	5	3	0
June	4	0	4	4	0	4
July	9	5	4	9	5	4
August	9	4	4	8	4	5
September	4	0	4	4	4	0
October	5	3	4	7	1	4
November	5	4	4	8	1	5
December	5	4	3	6	1	4
Average	4.9	3.0	4.0	6.9	1.8	3.3
One-Way Fare Passenger (\$)	\$37	\$69	\$39	\$37	\$69	\$39
One-Way Fare Vehicle (\$)	\$83	\$167	\$91	\$83	\$167	\$91

Source: AMHS, 2014

Note: Drivers ride free with their vehicle from October 1, 2014 through April 30<sup>th</sup>, 2015. In all other months a driver and vehicle fare is required.

\*Port Codes: KAE = Kake, PSG = Petersburg, JNU = Juneau, SIT = Sitka

Survey respondents showed a clear preference for direct ferry trips, with indirect trips a distant second alternative. For example, there are indirect AMHS Kake to Juneau trip segments that use Sitka as a way-point. Running time for this option and its two segments is approximately 17 hours versus a direct Kake to Juneau running time of 8.75 hours. Loading and unloading times in port add approximately one to two hours at each end of the trip segment, though these can be highly variable depending on season, traffic loads, tides, weather, and vehicle types.

None of those interviewed expressed interest in indirect departures, though several noted they exist and were sometimes unavoidable. Respondents also noted the increased costs for lengthy delays at Juneau, with most suggesting a one or two day delay was preferable to anything longer.

Travelers booking a round trip on AMHS from Kake to Juneau during the winter of the 2014/2015 can have anywhere between a 4 and 6 day layover in Juneau before catching a return sailing to Kake. This could result in substantial additional travel costs for transportation, lodging, and meals, a common expressed concern.

Table 24 displays the number of trips by season published in AMHS’s 2014/2015 schedule. In addition to the total number of trips, the average delay time, in days, between ferry departures is listed (labeled *Average Time to Next*) as well as the minimum and maximum time between departures by season.

Southbound departures from Juneau to Kake during the winter have the longest average time between departures at 36.66 days and northbound departures from Petersburg to Juneau during the summer have the shortest average time between departures at 2.48 days.

**Table 24. Current Ferry Service Northbound and Southbound from Kake and Petersburg to Juneau, October 2014 to September 2015.**

Direction, Community	Trip Factor	Duration in days	
		Winter	Summer
Northbound, Kake to Juneau	Count, trips	27.00	9.00
	Average Time to Next	7.82	7.00
	Minimum Time to Next	3.75	6.90
	Maximum Time to Next	14.00	7.23
Southbound, Juneau to Kake	Count, trips	5.00	19.00
	Average Time to Next	36.66	7.39
	Minimum Time to Next	21.17	4.95
	Maximum Time to Next	54.42	13.98
Northbound, Petersburg to Juneau	Count, trips	34.00	64.00
	Average Time to Next	6.29	2.48
	Minimum Time to Next	1.46	0.70
	Maximum Time to Next	8.68	4.65
Southbound, Juneau to Petersburg	Count, trips	27.00	32.00
	Average Time to Next	8.07	4.85
	Minimum Time to Next	1.04	2.45
	Maximum Time to Next	21.00	11.55

Source: AMHS Published Ferry Schedule, Southeast Alaska, dated January 21, 2015.

Note: Winter is seven months, October to April; summer is five months, May through September. Trip segments are direct, running time only

Telephone survey results indicate that eight percent of Kake respondents kept a car in Juneau, Sitka, or Petersburg. The remaining 92 percent travel by other means of transport while visiting these communities. Car and lodging costs can be substantial in either Juneau or Sitka. As an example, federal per diem rates for Juneau allow for maximum room rates of \$159 per night during the summer and \$135 per night during the winter with total per diem rates ranging from \$237 in the winter to \$263 in the summer (DOD 2015). In Sitka, the same rate tables allow for local hotel rates of \$169 in the low season and \$209 in the high season. Additionally, it is important to note that most hotels offer a discounted rate to government employees, so the allowable federal maximums are likely less than what most non-government travelers would face.

### 3.3.2 Increase in Accessibility

Currently the residents of Kake have access to the limited number of direct flights and ferry trips that depart from or arrive in Kake. The proposed road would allow for Kake residents to access the transportation networks out of Petersburg as well, increasing their access to ferry and air transportation networks. Certain AMHS trip segments from Kake use Sitka or Petersburg as indirect departure points, with increased running times of approximately 8.75 hours via Sitka and 4.5 hours via Petersburg. Total trip times to Juneau via Sitka can reach 17 to 20 hours of total trip time (i.e., running time plus load and unload times) and 13 to 15 hours of total trip time, via Petersburg.

In 2013 there were a total of 161 ferry departures and 615 air departures that originated from Kake. Petersburg had a substantially larger number of ferry and air departures, 375 and 1,124 respectively (Table 25). If Kake residents had access to both the departures originating in Kake and Petersburg they

would have access to almost three times the number of transportation options that they currently have with Kake departures alone.

**Table 25. Air and Ferry Departure Comparison, 2013**

Mode	Kake	Petersburg	Total
Ferry	161	375	536
Air	615	1,124	1,739

Source: AMHS, 2014 and BTS, 2014

Note: the number of AMHS trips shown includes indirect departures (e.g., Kake to Juneau via Petersburg) and direct departures (e.g., Kake to Juneau).

### 3.3.2.1 Air Transport

The road connection between Kake and Petersburg would not only provide Kake residents with access to more air departures, but it would also provide access to a larger set of air carries and their corresponding transportation networks. Table 26 displays the air departures originating in Kake and Petersburg in 2013 by carrier and destination. During the interviews conducted for this study, residents of both Kake and Petersburg brought up the value of having access to the Alaska Airlines transportation network. Currently, Kake residents must fly to either Petersburg or Juneau to access this network, but with the proposed road, Kake residents would be able to eliminate an additional flight and simply drive to Petersburg to access the Alaska Airlines network.

**Table 26. Air Departures by Carrier and Destination, 2013**

<b>Carrier/Destination</b>	<b>Kake</b>	<b>Petersburg</b>
<b>Air Excursions LLC (Now Alaska Seaplanes)</b>	<b>592</b>	<b>3</b>
Juneau, AK	588	3
Ketchikan, AK	1	
Klawock, AK	1	
Petersburg, AK	1	
Wrangell, AK	1	
<b>Alaska Airlines Inc.</b>		<b>718</b>
Anchorage, AK		1
Juneau, AK		357
Ketchikan, AK		3
Wrangell, AK		357
<b>Alaska Central Express</b>	<b>1</b>	<b>375</b>
Anchorage, AK		33
Juneau, AK	1	240
Ketchikan, AK		60
Sitka, AK		17
Wrangell, AK		24
Yakutat, AK		1
<b>Alaska Seaplane Service</b>	<b>9</b>	<b>12</b>
Haines, AK		1
Hoonah, AK	2	
Juneau, AK	2	7
Kake, AK		2
Klawock, AK	1	
Petersburg, AK	3	
Tenakee, AK	1	
Wrangell, AK		2
<b>Pacific Airways, Inc.</b>		<b>9</b>
Coffman Cove, AK		2
Ketchikan, AK		7
<b>Peninsula Airways Inc.</b>		<b>4</b>
Anchorage, AK		4
Scott Air LLC dba Island Air Express		1
Klawock, AK		1
<b>SeaPort Airlines, Inc. d/b/a Wings of Alaska</b>	<b>13</b>	<b>2</b>
Hoonah, AK	2	
Juneau, AK	11	2

Source: BTS, 2013

The increased access to air transportation networks in Petersburg would also provide significant time savings when it comes to traveling south of Kupreanof Island. In 2013, only four flights departed from Kake with southern destinations (Ketchikan, Klawock and Wrangell), which means that Kake residents flying south first had to fly north, most likely to Juneau, to connect to an air transportation network that

would then take them south. The proposed road would allow Kake residents to drive to Petersburg and reduce their overall travel time by eliminating the counterproductive northward backtracking that is currently required for southbound air travel.

### 3.3.2.2 Ferry Transport

The McDowell Group Survey data indicate that Juneau is the most important community for Kake residents to have access to by ferry. The proposed road would increase access to Juneau by way of Petersburg, giving residents of Kake more travel options and also facilitate a reduction in layover time in Juneau. Table 27 displays the average time between both Northbound (NB) departures (departing to Juneau) and Southbound (SB) departures (returning from Juneau) by season. The first row (labeled Without Road) is limited to direct ferry routes between Kake and Juneau, whereas the second row (labeled With Road) also includes direct routes between Petersburg and Juneau.

The proposed road would provide residents of Kake access to more frequent NB and SB ferry departures to and from Juneau. The most drastic increase can be seen in winter southbound departures, which would go from an average of 36.7 days between departures to only 6.8 days between departures with the proposed connection between Kake and Petersburg.

**Table 27. Northbound and Southbound Ferry Service between Kake and Juneau**

Scenario	Ave. Days to Next, NB		Ave. Days to Next, SB		Departure Opp, NB		Arrival Opp, SB	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Without Road	7.0	7.8	7.4	36.7	9	27	19	5
With Road	2.1	3.5	3.1	6.8	72	61	52	32

Notes: Winter (October 2014- April 2015), Summer (May 2015- September 2015)

Source: AMHS, 2015

According to survey respondents, shopping is the most common purpose of ferry trips from Kake to Juneau (49 percent). This activity typically does not require the multiday layover in Juneau that is unavoidable when limited to Kake ferry departures and arrivals. Long multiday layovers can be costly to travelers and accumulate lodging and meal expenses that could be avoided with shorter trip options.

Using the 2014–2015 AMHS ferry schedule the study team calculated the average time between ferry arrivals and departures in Juneau required for a round trip from Kake by season (Table 28). The Kake Only calculations are limited to direct routes between Kake and Juneau, whereas the Kake or Petersburg calculations use an expanded data set that also includes direct routes between Petersburg and Juneau. It should be noted that only direct routes were considered in this analysis and longer indirect routes may be available to reduce the total layover time in Juneau, but would also increase the total travel time while on the ferry.

**Table 28. Layover Time for Kake-Juneau Travel, 2014–2015**

Situation	Average JNU Layover (Days)		Min. JNU Layover (Days)		Max. JNU Layover (Days)		Count of Round Trips	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Without Road	4.4	25.0	4.0	3.5	6.2	53.7	9	27
With Road	1.9	5.0	0.1	0.1	6.2	16.6	39	31

Notes: Winter (October 2014- April 2015), Summer (May 2015- September 2015)

Source: AMHS, 2015

Increasing Kake residents’ access to the transportation networks that are available in Petersburg reduces the average layover time in Juneau during the summer months from 4.4 days to 1.9 days. The average layover in Juneau during the winter months would be reduced by over 20 days with road access to Petersburg. The total number of roundtrips would also see an increase from 9 to 39 in the summer and 27 to 31 in the winter with access to direct routes between Juneau and Petersburg.

### 3.4 How Would the Road Affect Travel Frequency?

The McDowell Group Survey data appear to indicate that the new road would have a relatively small effect on Kake residents’ frequency of travel within the region. The survey asked respondents *“If a road/ferry connection were built between Kake and Petersburg do you think the number of trips you make each year would increase significantly/increase slightly/not change/decrease slightly/decrease significantly?”* Respondents largely indicated that their regional travel patterns would not change overall (see Table 29).

With respect to trips to Juneau, 70 percent of respondents said that their travel to Juneau would not change, while 10 percent said that their travel would increase and 16 percent said that their travel to Juneau would decrease. Thus, the portion of respondents indicating at least some level of decrease is greater than those indicating an increase by six percentage points. However, only two percent of respondents said that the road would result in a significant decrease in their travel to Juneau, while eight percent indicated a significant increase. This dichotomy leads the study to conclude that respondent travel to Juneau from Kake would likely decline in a small, perhaps imperceptible, way with the possibility of no change at all.

Respondent travel to Sitka is even less likely to change than respondent travel to Juneau as 80 percent of respondents indicated that their travel frequency to Sitka wouldn’t change. In addition, eight percent of respondents said their travel to Sitka would increase while eight percent said their travel to Sitka would decrease. At a finer resolution, four percent indicated a significant increase and none indicated a significant decrease. These data indicate that “no change” is the most likely overall outcome with a very small bias towards an increase if any aggregate change occurs.

**Table 29. Respondents Predicted Change in Travel**

Effect of the Road...	To Juneau	To Sitka
	% Change	
Increase Significantly	8	4
Increase Slightly	2	4
Not Change	70	80
Decrease Slightly	14	8
Decrease Significantly	2	0
Unsure	4	4
<b>Net Portion with a Change</b>	<b>-6</b>	<b>0</b>

Source: McDowell Group, 2014.

With a prediction of little to no changes in travel frequency, the study expects that the road will likely result in more travel to Petersburg, but with very little change in expenditures by Kake residents on travel with the exception that costs could fall if flights between Petersburg and Juneau cost less than current flights from Kake. If residents move their point of departure to Petersburg, then overall expenditures could change based on cost differentials for flights.

In addition to round-trips trips between Kake and Petersburg, respondent data indicate that local residents would use the road for partial trips made for substance or recreational purposes. The primary destinations along the proposed road for these partial trips is unknown at this time.

### 3.5 How Would the Road Affect Accessibility to Business Services?

The road would substantially increase Kake residents’ access to services in Petersburg. According to the State of Alaska’s Department of Commerce, Community, and Economic Development, there are 448 business licenses in Petersburg compared to 24 in Kake (see Table 30). Petersburg does have more businesses providing a wider array of services, when compared to Kake, but Kake residents tend to look at Juneau or Sitka in much the same way as Petersburg; all three require some outlay of time, cost, and effort. Both Juneau and Sitka are more distant in time and cost, yet without a road, Petersburg is currently a distant second or third travel choice for accessing services. While residents have expressed a preference for continuing to travel to Juneau and Sitka, Petersburg firms will have an advantage in that they will be much closer on the basis of time and they could out-compete firms currently providing service to Kake from Juneau and Sitka. For example, firms that provide fuel, hardware, and building supplies could compete with similar firms in Juneau, by providing quicker service, over the proposed road, to consumers in Kake. At the same time, wholesalers might find firms in Kake that would accept a slightly higher cost for faster delivery than services from Juneau or Sitka. Of course, while this change means greater choice for the consumer in Kake, it can also mean increased competition for firms that are currently in Kake.

**Table 30. Business Licenses, by Line of Business, Kake, Petersburg, December 2014.**

Primary Line of Business	Kake	Petersburg
11 - Agriculture, Forestry, Fishing and Hunting	1	30
23 - Construction	1	25
31 - Manufacturing	2	26
42 - Trade	5	70
48 - Transportation and Warehousing	2	33
51 - Information	1	2
53 - Real Estate, Rental and Leasing	1	41
54 - Professional, Scientific and Technical Services		39
55 - Management of companies and enterprises	1	2
56 - Administrative, Support, Waste Management and Remediation Services		21
61 - Educational Services	1	8
62 - Health Care and Social Assistance	1	14
71 - Arts, Entertainment and Recreation	1	36
72 - Accommodation and Food Services	2	37
81 - Services	5	62
92 - Public Administration		2
<b>Total</b>	<b>24</b>	<b>448</b>

Source: State of Alaska, Department of Commerce, Community, and Economic Development, December 2014.

### **3.6 How Would the Project Affect Access to Medical Services?**

The study team interviewed representatives from both the Petersburg Medical Center and SEARHC about how the road might affect the provision of medical services in the area, particularly for the residents of Kake. Neither interviewee felt that the road would result in large changes in how residents access medical services with the exception of dental and medical benefits for non-Alaska Native residents who would be able to access dental and medical care provided by non-IHS providers in Petersburg. Kake does not currently have any non-emergency medical or dental providers for non-Alaska Natives. The existence of the road would allow non-Alaska Natives to travel to Petersburg for regular medical and dental care as opposed to receiving it on infrequent trips to Juneau.

Currently, Alaska Native residents of Kake are served through the IHS contract with SEARHC and SEARHC's facilities in Kake and Sitka while non-natives receive treatment from providers outside of Kake because there are no providers in Kake who provide non-emergency services outside of IHS contracts. Medically driven travel patterns for Alaska Native residents of Kake are not expected to change since a much larger range of services are available in Sitka compared to those in Petersburg and the SEARHC facility in Kake offers many of the same services available in Petersburg.



The team's interview with SEARHC indicated that their use of the road would depend upon whether the travel time between Kake and Petersburg were longer or shorter than two hours. The two-hour standard is how long it takes SEARHC to Medivac patients needing urgent emergency care to the Mt. Edgecumbe hospital in Sitka. If the road reduced travel time to less than two hours, then SEARHC would need to send emergency patients to Petersburg because standards require that the patient be transported to the closest qualified facility. If the two-hour standard can be met and patients started traveling to Petersburg, this situation would raise some questions for SEARHC as they do not contract with providers in Petersburg for this type of care and it is unclear how the Petersburg providers would receive payment. At the same time, a patient requiring emergency medevac will require personnel licensed to provide emergency care during transport. In the case of SEARHC's Kake facilities, this requirement means that the single mid-level care provider in Kake would need to travel with the patient, leaving the community without a mid-level care provider during the patient's trip. Currently, SEARHC staffs medevac care through its Sitka operations. If a one-way trip to Petersburg takes longer than two hours, then Kake would continue to be served by medevac care to Sitka, and SEARHC's use of the road would be limited to potentially increasing the frequency of visits by any itinerant providers out of Petersburg.

### **3.7 How Would Road Affect Businesses and Organizations?**

The study team interviewed community representatives from a number of business in the mariculture, seafood, medical, and retail industries. In addition to local businesses, representatives from education, village organizations and local government entities were also included in the interview sample set. Through these interviews the study believes that the effects of the proposed road on businesses and organizations are likely to be concentrated in a few sectors of the economy.

During the interview process there were a number of common themes brought up when interviewees were asked how the proposed road between Kake and Petersburg could impact their business or organization. The potential for the road to facilitate access to new markets and economic areas was one effect identified by many interviewees. Businesses and organizations in both Kake and Petersburg thought that a road between the two communities would not only open up access to that specific community, but also the transportation networks and markets that each community is connected to. This could benefit businesses with both the inflows and outflows of good and services.

Interviewees also thought that the proposed road could reduce the cost of supplies as well as repair and maintenance services in Kake. Interviewees from fishing, mariculture, and retail industries indicated that they would see a real cost savings if they were able to ship supplies to Petersburg and then use the road to get them to Kake. Repair and maintenance services could also be less expensive due to the decrease in travel costs associated with using the road instead of an air taxi or the ferry to get to Kake from Petersburg. Interviewees also saw a potential to reduce their fuel costs if they were able to purchase fuel in Petersburg and haul it to Kake. Interviewees from the schools in Kake and Petersburg also mentioned the potential to reduce training costs by hosting combined in-service training and splitting the costs between the two school districts if the road facilitated easier and more cost-effective transportation between the two communities.

The interviews also indicated that the proposed road would make Kake Harbor much more appealing to fishermen who currently use Petersburg Harbor. Kake's harbor is close to popular fishing grounds, has space available, and has considerably less expensive moorage rates than Petersburg Harbor's. Also, in regards to fishing, multiple interviewees from Kake mentioned that they could save money by driving seafood to Petersburg and selling it there instead of shipping their products from Kake to Juneau to be sold. Respondents said that products can be sold Freight on Board (FOB) Petersburg for a similar price

as product sold FOB Juneau and companies could reduce transportation costs. The idea that small seafood producers could benefit from the road was backed up by sentiments expressed by large processors. Overall, these interviewees felt that the effect of the road on the seafood industry would be modest and that use of the road by large processors would probably be infrequent and in support of permit holders fishing near Kake. However, these interviewees stated that the road would most likely benefit entrepreneurs and small producers looking to move high-end products such as troll-caught king salmon and crab quickly from fishing grounds near Kake to Petersburg and that the road could save significant time for select owner-operators who do their own processing and sell directly to customers. Thus, while the large companies would use the road in a limited fashion, they recognize the road's value in supporting the economy of Kake and providing entrepreneurial opportunities which do not currently exist. They also said that a small number of their employees who are Kake residents would benefit from being able to drive to their jobs at the processing plants in Petersburg. All of the large processor interviewees indicated that they felt that fleet movement from Petersburg's harbor to Kake's harbor would be limited at first, but there could be some vessels that move during the fishing season to be closer to the fishing grounds. Longer-term investments by both processors and vessel owners will depend on the reliability of the road and whether the road can produce savings for the parties involved.

Not all of the interviewees thought that the proposed road would benefit their business or organization. Many of the interviewees from local government entities, medical service providers, and village organizations did not think that their business or organization would use the road at all, and indicated instead that they would continue to travel to larger hub communities such as Juneau or Sitka to get the products and services not available in their community. Others mentioned that they didn't think others would use the road enough to see any increase in business in the area.

### **3.8 What Overall Effect Might the Road Have on Kake and Petersburg?**

The overall effect that the proposed road would potentially have on the communities was another topic discussed during the interviews with organizations and community stakeholders. Transportation security was one common topic brought up during this portion of the interview. Many respondents felt that the proposed road would increase transportation security in the region, which is currently dependent upon ferry and air service that can be expensive and weather sensitive. The proposed road would connect and expand the two transportation networks giving residents in both communities more options when it comes to traveling.

Many respondents also felt that the proposed road would facilitate more of a connection between Kake and Petersburg, strengthening community ties. Some respondents mentioned that there has been tension between the two communities in the past, but that the proposed road could provide community members a chance to become reacquainted. Respondents also thought that the proposed road could encourage sharing of resources and knowledge between the two communities. One stated example was the opportunity for teachers in both communities to attend in-service training together, allowing for costs to be distributed as well as an exchange of information between the teachers. Lower travel costs and shorter travel times would make these types of collaboration easier.

The potential for the proposed road to lower the cost of living in Kake and Petersburg was also brought up during the interviews. Many of the respondents from Kake thought that they would be able to save money on food and fuel if they were connected to Petersburg by road. Some Kake respondents also felt that businesses and organizations combining purchases in Petersburg could create economies of scale and lower costs for buyers in both communities. Interviewees from Kake also mentioned that the proposed road could stabilize the supply of fuel in their community and would facilitate the purchase and quick transfer of fuel in Petersburg if there were unexpected shortages in Kake.

The interviews indicate that the Kake Access Project is not seen as a major driver supporting the Petersburg Borough's near or long-term access and development needs. While the road would support some entrepreneurial opportunities with regards to tourism, the perception is that increased demand in services from Kake would provide a very modest boost to the local economy and that the potential for increased demand on borough emergency services would weigh on those benefits.

### **3.9 What Community Concerns Were Raised During This Study?**

A number of concerns regarding the proposed road were brought up during the interview process. Common concerns voiced by residents in both communities were safety, law enforcement, and maintenance along the road. Neither community felt that they had adequate safety or maintenance equipment and staff to support the proposed road. Safety concerns about the possibility of car accidents with drivers not able to call for help and, further, not having local capabilities to reach accidents in a timely matter were voiced by a number of interviewees. Many interviewees asked who would be responsible for policing the proposed road. Concerns about road maintenance, especially in the winter, were brought up by many of the respondents and they were skeptical that the road could be maintained well enough to be open year-round.

Concerns about impacts on subsistence resources were vocalized throughout the interviews. Residents in Kake are worried that the road will make valuable subsistence lands more accessible to residents of other communities and that those resources will end up being depleted. Many of the respondents from Petersburg mentioned that there are people in their community that would be interested in using the proposed road to access hunting grounds closer to Kake, but acknowledged that the residents of Kake would not be very keen on this idea. Currently the high cost of travel and relative isolation of the subsistence areas around Kake has prevented others from accessing them.

Respondents also voiced the concern that the proposed road would not be used enough to justify the costs to build and maintain it, and that they would rather see that money go to more cost-effective improvements. Some interviewees wondered how a shuttle ferry would be operated during low levels of traffic and respondents, primarily in Petersburg, thought that the road/ferry connection would not be used very often especially in winter months. Many of the latter respondents would rather see increased ferry service in both communities and felt that increased ferry service would better address the needs and desires of both communities.

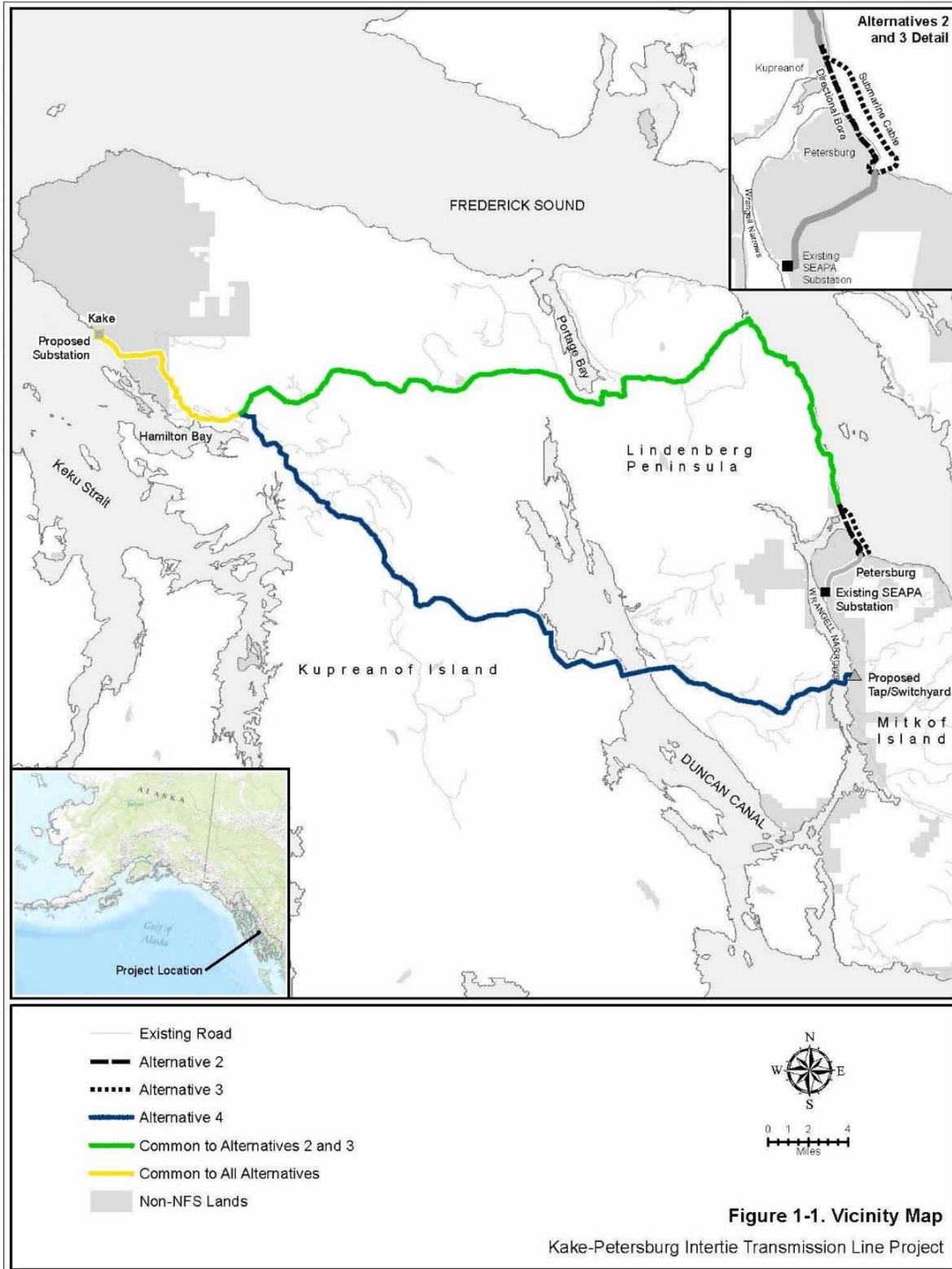
Another concern was that the addition of the proposed road could have a negative impact on some of the current services provided in Kake and Petersburg. Residents in Kake expressed concerns about a reduction of Alaska Marine Line (AML) barge service. They are worried that AML will expect residents to load and unload their freight in Petersburg if there is a road connection between the two communities. Residents in Kake and Petersburg also expressed concerns that the proposed connection between the two communities could have a negative impact on the EAS flights provided by Alaska Airlines out of Petersburg. Both communities see a connection into Alaska Airlines' routing network as an important asset that they want to retain.

Concerns about increased movement of people between the two communities and the rest of the region were also brought up during interviews. Respondents from Kake mentioned that outmigration of residents is an ongoing issue in their community and the proposed road has the potential to contribute to this issue. Conversely, residents in both communities expressed concerns about increased outside activities in their respective communities. Interviewees from Kake especially voiced concerns about outside fish processing and fish buying operations coming into their community due to easier road access.

### **3.10 What is the Relationship Between this Project and the Kake-Petersburg Transmission Line Intertie Project?**

The Kake-Petersburg Transmission Line Intertie Project (KPI) proposes to run a new power transmission lines between 51.9 and 60.3 miles between Kake and Petersburg. The proposed lines would transmit power at either 69 or 138 kilovolts and consist of single pole wood structures (USFS 2014). The KPI is a separate project from the Kake Access Project and as the U.S. Forest Service (USFS) noted in the Draft Environmental Impact Statement, “the best solution for each project may not involve actions taken at the same time or in the same place. As a result, these projects are being pursued independently.”

Figure 5. KPI Alternatives



Source: USFS, 2014.

There are no quantitative estimates of how the Kake Access Project affect the KPI, but the presumption is that if the road is constructed first, it could provide some benefits during construction and could also help lower annual maintenance costs. The Kake Access EIS website notes that:

Locating the Intertie alongside a roadway maintained year round should reduce line maintenance costs. Reduced line maintenance could would benefit Southeast Alaska Power Agency (SEAPA) rate payers. There are no construction benefits to the construction of the Intertie, if the line is constructed ahead of the road. Minimal economic benefits accrue to the road project from the power line constructions. (WFL 2015.)

The KPI Draft EIS does not discuss benefits to the KPI from the proposed road project, but it does note the potential for cumulative effects including increased hunting and trapping access, increased access to forestry resources, and improvement of Kake's ability to compete economically (USFS 2014).

## 4 Conclusions

This purpose of this report is to provide information necessary to refine the Purpose and Need Statement. With this purpose in mind, the report comes to the following conclusions:

1. **In the short run, the road is unlikely to substantially change regional travel patterns as measured by origin and destination.** Petersburg residents look to Juneau, and Kake residents to Juneau and Sitka, as their regional economic and service-related hubs and their travel patterns reflect this relationship. The study results indicate that these relationships and the associated travel patterns are unlikely to change with the construction of the road.
2. **The road would greatly expand the number of opportunities Kake residents have to travel by ferry to Juneau and Sitka and greatly reduce the average minimum duration of ferry trips.** The proposed road would increase Kake residents' access both to Petersburg and its corresponding transportation networks. This increased access to more frequent and robust travel options would facilitate shorter and less costly layovers during round trip travel in the region.
3. **The road would modestly expand business opportunities and allow business in certain industries to reduce their costs.** Key informant interviews indicate that the businesses most likely to use the road are those located in Kake that rely on transport of goods or supplies. Interviewees from the mariculture, seafood, and retail industries felt that their businesses would benefit from lower shipping costs, reduced repair and maintenance costs, reduced fuel costs, and the access to other transportation networks if ADOT&PF constructed the proposed road. In addition, the road will provide modest entrepreneurial opportunities for residents in Kake and Petersburg, particularly in transport and tourism activities.
4. **The road's initial effects are likely to be limited for many sectors of the local economy.** Interviewees from many local government entities, medical service providers, and village organizations did not think that the road would fundamentally change their business or organization's source for goods and services, and that they would continue to travel to larger hub communities such as Juneau or Sitka to access products and services not available in their community.
5. **While the road will provide the opportunity for round-trips between Kake and Petersburg the primary source of activity on the road will be "partial use trips" for recreation subsistence.** McDowell Group Telephone Survey results indicate that many people in both Kake and Petersburg would use the road even if they weren't taking full round-trips between the two communities. The study estimates that, depending on the selected route's length, the round-trip AADT on the road would be between 16 and 50 per day with partial trips adding another 25 to 110 AADT from Kake and another 50 to 120 AADT from Petersburg.
6. **The minimum travel time necessary for a one-way trip will greatly influence usage.** The average number of trips per person per year calculated from the McDowell Group Telephone Survey fell greatly as trip length increased. For Petersburg residents, the average number of trips per year fell from 1.8 for the shortest trips (3 hours) to just 0.7 for the longest trips (6 hours). Among Kake residents, the average number of trips per year fell from 8.8 (4 hours) to 2.7 (6 hours).
7. **A sizeable portion of both Kake and Petersburg residents said they would not use the road and this percentage was affected by estimated minimum travel time on the road.** Depending on the estimated length of a one-way trip, the percent of respondents who said they would not use the road for round-trips ranged from 49 percent to 73 percent in Petersburg and between 34 percent and 59 percent in Kake.

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# Appendix A: McDowell Group Survey Report

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# *Kake Access Transportation Survey Report*

*Prepared for:*  
**Federal Highway Administration and  
Alaska Department of Transportation &  
Public Facilities**

*On behalf of:*  
**Robert Peccia & Associates, Inc.**



Research-Based Consulting

Juneau  
Anchorage

*December 2014*

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**Appendix—Survey Instruments**

# Executive Summary

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This report presents findings from surveys of Kake and Petersburg/Kupreanof residents. The surveys assessed resident travel patterns and preferences between several Southeast Alaska communities. Results from the surveys are intended to inform a transportation planning study of a potential road and shuttle ferry connection between Kake and Petersburg/Kupreanof.

The telephone surveys were administered in October 2014. Separate survey instruments were used, one for Kake residents and one for Petersburg/Kupreanof residents. Fifty Kake residents completed the Kake survey and 301 Petersburg/Kupreanof residents completed the survey for those communities.

## Survey Results

### Most Desirable Communities to Access

- Juneau is the most important Southeast Alaska community to access for most Petersburg/Kupreanof and Kake residents. Eighty-one percent of Petersburg/Kupreanof residents said Juneau is the most important Southeast community for them to access by ferry, as did 98 percent of Kake residents. For air access, 78 percent of Petersburg/Kupreanof residents named Juneau as most important, as did 80 percent of Kake residents.
- Ketchikan is most frequently cited as the second most important community for Petersburg/Kupreanof residents to access by air (36 percent) and ferry (33 percent).
- Sitka is the most frequently reported second most important community for Kake residents to access by air (66 percent) and by ferry (68 percent).

### Frequency, Mode, and Purpose of Travel

- On average, Petersburg/Kupreanof residents traveled to Juneau 4.9 times in the past 12 months. Of those who traveled, an average of 4.0 trips were by air and 1.6 trips were by ferry. Almost half (48 percent) of air trips were pass throughs on the way to a different final destination.
- Kake residents traveled an average of 7.9 times to Juneau in the past 12 months. Of those trips, an average of 4.0 were by air and 3.9 were by ferry. Almost half (49 percent) of the ferry trips were primarily for shopping, while 39 percent of air trips were for work/business, and 29 percent were for medical purposes.
- Only 30 percent of Petersburg/Kupreanof residents traveled to Sitka in the past 12 months. Among those who did, over half (54 percent) of all air trips to the community were for work/business.
- Ninety percent of Kake residents traveled to Sitka at least once in the past 12 months. Kake residents traveled to Sitka an average of 4.1 times in the past 12 months. The most frequently cited primary reason for travel between Kake and Sitka was for medical purposes (68 percent of air trips and 55 percent of ferry trips).

- Only 14 percent of Petersburg/Kupreanof residents traveled to Kake in the past 12 months. Among respondents who did travel to Kake, 79 percent of air travel was for work/business.
- Kake residents traveled to Petersburg an average of 1.1 times in the past 12 months, with 59 percent of resident not traveling to Petersburg at all.
- Kake residents traveled to Petersburg for a variety of reasons, including medical (36 percent of air and 36 percent of ferry trips), passing through to other destinations (25 percent of ferry and 11 percent of air trips), and visiting friends and relatives (17 percent of ferry trips and 22 percent of air trips).
- The number of ferry trips that involved a vehicle varied by destination, ranging from 39 percent of ferry trips from Petersburg/Kupreanof to Sitka to 56 percent of trips from Kake to Petersburg.
- Eight percent of Kake residents reported they maintain a car for use in Juneau.

### **Estimated Usage of Road/Shuttle Ferry Connection**

- When asked to estimate their potential usage of a new road/shuttle ferry connection between Kake and Petersburg, Petersburg/Kupreanof residents predicted they would use a connection costing \$30 and taking 3 hours one-way an average of 1.8 times annually.
- As price and time of travel increased, potential demand for the connection declined. An option that cost \$50 and took 4 hours one way generated anticipated average annual use of 1.5 trips. An option for \$100/6 hours one way generated anticipated average annual use of 0.7 trips.
- Kake residents estimated they will use the \$30/3 hour connection an average of 8.8 times annually, compared to 5.8 trips for a connection that costs \$50 and takes 4 hours one way and 2.7 trips for a connection that costs \$100 and takes 6 hours one way.
- Approximately one-third of residents from Petersburg/Kupreanof and one-third from Kake said they were very likely to use a new road for subsistence and/or recreation, while another third from each community said they were somewhat likely, and one-third said they were not likely to use it for this purpose.
- Kake residents who anticipated using a new road/shuttle ferry connection for subsistence and/or recreation estimated they would take 30 annual trips using the connection, while Petersburg/Kupreanof residents anticipated an average of 7 trips.
- Seventy percent of Kake residents thought a road/ferry connection would not change their frequency of travel to Juneau, while 80 percent believed it would not change their number of trips to Sitka.

# Introduction and Methodology

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## Introduction

The Federal Highway Administration, through Robert Peccia & Associates, Inc., contracted with McDowell Group to conduct a survey of Kake and Petersburg/Kupreanof residents. Results from the survey are intended to inform a transportation planning study report that assesses the need, benefits, and impacts of a road and shuttle ferry connecting the communities. The survey asked about resident travel patterns and preferences between the communities and within the Southeast Alaska region.

## Methodology

Two separate telephone survey instruments were designed, one for use with Kake residents and one for Petersburg/Kupreanof residents. The survey was designed in consultation with Robert Peccia & Associates, with additional input from the Federal Highway Administration, Alaska Department of Transportation, and Northern Economics.

For the Petersburg/Kupreanof survey, McDowell Group purchased a random sample of landline and cell phone numbers for the community. It was not possible to distinguish Kupreanof phone numbers from Petersburg numbers for purposes of this survey. A total of 301 residents participated in the survey. Survey results were weighted by age and income (with U.S. Census data) to ensure the results were statistically representative of the community overall.

Due to the relatively small population in Kake (approximately 550) and limited available phone numbers, rather than attempt a random sample survey McDowell Group attempted to survey as many Kake residents age 18 and over as possible. Contacts for the Kake sample were acquired from multiple sources, including purchased land and cell phone numbers, direct contact with community members, and a search of Kake telephone directories from 2012, 2013, and 2014. Prior to contacting residents in Kake, McDowell Group announced the survey to residents via social media and postcards to all post office boxholders in the community. In total, 50 Kake residents participated in the survey. Due to the small sample size, survey results were not weighted for demographic characteristics.

## Petersburg/Kupreanof Household Survey Results

Petersburg/Kupreanof residents were asked a series of questions about their travel needs and preferences. Most residents identified Juneau as the most important Southeast community for them to access by ferry (81 percent) and air (78 percent). Approximately one-third of residents did not identify a second most important community to access (34 percent for ferry access and 32 percent for air). Another third identified Ketchikan as the second most important, 33 percent for ferry access and 36 percent for air.

### Which Southeast community, if any, is most important for you to have access to by ferry? Which is second most?

n=288	Most Important	2 <sup>nd</sup> Most Important	1 <sup>st</sup> + 2 <sup>nd</sup> Responses
Juneau	81%	6%	87%
Sitka	5	12	17
Ketchikan	4	33	37
Wrangell	2	7	9
Haines	1	1	2
Kake	-	-	-
Other	2	2	3
None	5	34	39
Don't know/refused	4	4	4

### Which Southeast community, if any is most important for you to have access to by air? Which is second most?

n=299	Most Important	2 <sup>nd</sup> Most Important	1 <sup>st</sup> + 2 <sup>nd</sup> Responses
Juneau	78%	5%	83%
Sitka	6	12	19
Ketchikan	3	36	39
Wrangell	2	2	3
Kake	-	-	-
Other	2	3	5
None	9	32	41
Don't know/refused	<1	<1	<1

## Juneau Travel

Eighty-six percent of respondents had traveled to Juneau in the past 12 months. On average, Petersburg/Kupreanof residents traveled to Juneau 4.9 times in the past 12 months. These trips included visits in which the respondent was passing through Juneau en route to another destination. A substantial number of residents traveled to Juneau more frequently than the average: 9 percent traveled 5 times, 22 percent traveled between 6 and 10 times, and 7 percent traveled 11 times or more. Only 14 percent did not travel to Juneau at all in the past 12 months.

**In the past 12 months, how many  
trips have you yourself, made to Juneau?**  
*(Including trips where respondent was passing through Juneau)*

n=301	% of Total
Zero	14%
1	8
2	16
3	10
4	14
5	9
6 – 10	22
11+	7
<b>Average number of trips per year</b>	<b>4.9 trips</b>

More Petersburg/Kupreanof resident trips to Juneau were by air than ferry in the past 12 months. Among respondents who traveled to Juneau, an average of 1.6 trips were by ferry and 4 trips were by air. About half (53 percent) of Petersburg/Kupreanof ferry trips to Juneau included a vehicle.

**Number of Trips by Mode of Transportation**  
*(Base: those who have taken a trip to Juneau in the last 12 months)*

n=259	Ferry % of Base	Air % of Base
Zero	36%	13%
1	24	18
2	20	17
3	10	15
4	4	14
5	1	4
6 – 10	4	15
11+	2	4
<b>Average number of trips per year</b>	<b>1.6 trips</b>	<b>4.0 trips</b>

## JUNEAU: TRIP PURPOSE

Almost half (48 percent) of Petersburg/Kupreanof resident air trips to Juneau in the past 12 months were for the purpose of passing through to other destinations, while only 9 percent of ferry trips were for this purpose. Other frequent purposes for trips to Juneau were work/business (27 percent of ferry trips and 19 percent of air trips) and visiting friends and relatives (14 percent of ferry trips and 15 percent of air trips). Additional reasons for travel on the ferry included special events such as school and sports (13 percent) and shopping (13 percent).

### How many of your Juneau ferry/air trips were primarily for...(trip purpose)?

(Base: Those who traveled to Juneau)

	Respondents n=165 % of Ferry Trips (n=425 trips)	Respondents n=225 % of Air Trips (n=1,039 trips)
Work/business	27%	19%
Medical	18	9
Visiting friends and relatives	14	15
Special events such as school and sports	13	4
Shopping	13	4
Passing through to other destinations	9	48
For other reasons	5	1

Note: columns may not sum to 100 due to rounding.

## Sitka Travel

Three out of every ten Petersburg/Kupreanof residents traveled to Sitka in the past 12 months. The average number of trips to Sitka was 0.7 trips per person. Of the respondents who traveled to Sitka, an average of 1.2 of their trips were by ferry and 1.1 trips were by air. Thirty-nine percent of ferry trips by Petersburg/Kupreanof to Sitka included a vehicle.

### In the past 12 months, how many trips have you yourself, made to Sitka?

(Including trips where respondent was passing through Sitka)

n=301	% of Total
Zero	70%
1	15
2	6
3	6
4	1
5	-
6 – 10	1
11+	1
<b>Average number of trips per year</b>	<b>0.7</b>

**Number of Trips by Mode of Transportation**  
*(Base: those who have taken a trip to Sitka in the last 12 months)*

<b>n=91</b>	<b>Ferry % of Base</b>	<b>Air % of Base</b>
Zero	37%	55%
1	38	27
2	9	10
3	10	4
4	4	3
5	-	-
6 – 10	2	-
11+	-	1
<b>Average number of trips per year</b>	<b>1.2</b>	<b>1.1</b>

**SITKA: PURPOSE OF TRIPS**

Over half of Petersburg/Kupreanof resident air visits to Sitka in the past 12 months were for work/business, while 23 percent of ferry trips were for this purpose. The next most frequent reason for air travel to Sitka was for medical reasons (22 percent of air trips), while 11 percent of ferry trips were for medical purposes. Almost one-third (31 percent) of ferry trips were made while passing through Sitka on the way to another destination.

**How many of your Sitka ferry/air trips were primarily for...(trip purpose)?**  
*(Base: Those who traveled to Sitka)*

	<b>Respondents n=57 % of Ferry Trips (n=105 trips)</b>	<b>Respondents n=41 % of Air Trips (n=96 trips)</b>
Passing through to other destinations	31%	6%
Visiting friends and relatives	20	11
Work/business	23	54
Medical	11	22
Special events such as school and sports	5	1
Shopping	2	-
For other reasons	8	5

**Kake Travel**

Most Petersburg/Kupreanof residents (86 percent) did not travel to Kake at all. Residents took an average of .3 trips to Kake in the past 12 months. Of those who did travel to Kake, an average of 1.3 trips were by ferry and .5 trips were by air.

**In the past 12 months, how many trips have you yourself, made to Kake?**  
*(Including trips where respondent was passing through Kake)*

<b>n=301</b>	<b>% of Total</b>
Zero	86%
1	6
2	4
3	2
4	2
5	-
6 – 10	-
11+	<1
<b>Average number of trips per year</b>	<b>0.3</b>

**Number of Trips by Mode of Transportation**  
*(Base: those who have taken a trip to Kake in the last 12 months)*

<b>n=43</b>	<b>Ferry % of Base</b>	<b>Air % of Base</b>
Zero	29%	71%
1	35	16
2	25	5
3	5	5
4	7	4
<b>Average number of trips per year</b>	<b>1.3</b>	<b>0.5</b>

**KAKE: PURPOSE OF TRIPS**

Over three-quarters (79 percent) of air travel to Kake by Petersburg/Kupreanof residents was for work/business, as was 21 percent of ferry travel.

**How many of your Kake ferry/air trips were primarily for...(trip purpose)?**  
*(Base: Those who traveled to Kake)*

	<b>Respondents n=30 % of Ferry Trips (n=54 trips)</b>	<b>Respondents n=13 % of Air Trips (n=23 trips)</b>
Work/business	21%	79%
Visiting friends and relatives	11	8
Special events such as school and sports	6	5
For other reasons*	62	8

\*Note: Includes a wide variety of unsolicited comments concerning other reasons to visit Kake by ferry. Hunting and passing through were most frequently noted.

## Estimated Usage

Among three different potential cost/length of trip options for travel to Kake and Petersburg/Kupreanof, residents anticipated they would take an average of 1.8 trips per year if the one-way route costs \$30 and takes 3 hours, an average of 1.5 trips if the trip costs \$50 and takes 4 hours, and an average of .7 trips if the trip costs \$100 and takes 6 hours.

*If a new road and shuttle ferry made it possible to travel to Kake for a total one-way cost for a car and driver of about XX including gas and ferry tickets and the total one-way travel time was about XX hours, approximately how many times per year would you use the new ferry/road to travel to Kake?*

### Estimated Usage of a New Road and Shuttle Ferry, by Cost and Time

Est. Number of Trips	\$30 + 3 hrs one-way n=301	\$50 + 4 hrs one-way n=153	\$100 + 6 hrs one-way n=133
Zero	49%	56%	73%
1	15	13	6
2	11	8	6
3	5	3	1
4	3	4	2
5	1	1	1
6 – 10	8	5	2
11+	2	2	1
Don't know	5	8	8
<b>Average number of trips per year</b>	<b>1.8</b>	<b>1.5</b>	<b>0.7</b>

When asked how likely they are to use a road between Kake and Petersburg/Kupreanof for subsistence and/or recreation, 37 percent said they are very likely to, 31 percent are somewhat likely, and 30 percent are not likely. Those who would use a road for subsistence or recreation estimated taking an average of 7.1 trips for that purpose annually on the road.

### Likelihood of using a new road for subsistence and/or recreational purposes

n=301	% of Total
Very likely	37%
Somewhat likely	31
Not likely	30
Don't know	2

**Annual Usage of a New Road for  
Subsistence and Recreational Activities**  
*(Base: those who would use a new road for  
subsistence and/or recreational purposes)*

<b>n=204</b>	<b>% of Base</b>
1	14%
2	24
3	13
4	9
5	9
6 – 10	15
11+	10
Don't know	6
<b>Average number of trips per year</b>	<b>7.1</b>

The average age of Petersburg/Kupreanof respondents was 49.4 years. Respondents' annual income averaged \$75,000. This data reflects the weighted demographic characteristics of the survey sample.

**Demographics**

<b>N=301</b>	<b>% of Total</b>
<b>Gender</b>	
Male	51%
Female	49
<b>Age</b>	
Under 25	7%
25 – 34	14
35 – 44	12
45 – 54	26
55 – 64	28
65+	13
<b>Respondent average age</b>	<b>49.4</b>
<b>Income</b>	
Less than \$15,000	10%
\$15,001 - \$25,000	11
\$25,001 - \$50,000	22
\$50,001 - \$75,000	13
\$75,001 - \$100,000	13
\$100,001 - \$125,000	14
\$125,001 - \$150,000	5
Over \$150,000	13
<b>Average household income</b>	<b>\$75,000</b>

## Do you know if anyone else in your household has participated in this survey?

n=301	% of Total
Yes	5%
No	81
Don't know/refused	14

## Kake Household Survey Results

Kake residents almost unanimously (98 percent) chose Juneau as the most important Southeast community for them to have access to by ferry, with Sitka as the most frequently cited second most important (68 percent). Juneau was also the most important Southeast community to have access to by air for 80 percent of Kake residents. Sitka was the second most important community for 66 percent of respondents.

### Which Southeast community, if any is most important for you to have access to by ferry? Which is second most?

n=50	Most Important	2 <sup>nd</sup> Most Important	1 <sup>st</sup> + 2 <sup>nd</sup> Responses
Juneau	98%	2%	100%
Sitka	2	68	70
Ketchikan	-	16	16
Petersburg	-	10	10
None	-	4	4

### Which Southeast community, if any is most important for you to have access to by air? Which is second most?

n=50	Most Important	2 <sup>nd</sup> Most Important	1 <sup>st</sup> + 2 <sup>nd</sup> Responses
Juneau	80%	16%	96%
Sitka	18	66	84
Ketchikan	-	10	10
Petersburg	-	4	4
None	-	2	4

## Juneau Travel

Every Kake resident surveyed had traveled to Juneau in the past 12 months. Kake residents traveled to Juneau an average of 7.9 times in the past 12 months. Among those who did travel to Juneau, an average of 4.0 trips were by air and 3.9 were by ferry. Just over half (52 percent) of ferry trips to Juneau by Kake residents included a vehicle.

**In the past 12 months, how many  
trips have you yourself, made to Juneau?**  
*(Including trips where respondent was passing through Juneau)*

n=50	% of Total
1	10%
2	4
3	10
4	4
5	10
6 – 10	36
11+	26
<b>Average number of trips per year</b>	<b>7.9</b>

**Number of Trips by Mode of Transportation**  
*(Base: those who have taken a trip to  
Juneau in the last 12 months)*

n=50	Air % of Base	Ferry % of Base
Zero	6%	28%
1	16	6
2	12	16
3	18	12
4	14	8
5	12	4
6 – 10	16	18
11+	6	8
<b>Average number of trips per year</b>	<b>4.0</b>	<b>3.9</b>

**JUNEAU: PURPOSE OF TRIPS**

Half (49 percent) of ferry trips by Kake residents to Juneau in the past 12 months were primarily for shopping, while 14 percent of air trips were for that purpose. Of the air trips by Kake residents, 39 percent were for work/business and 29 percent were for a medical reason. Twenty percent of ferry trips were for a medical purpose and 12 percent were for work business. In contrast to Petersburg/Kupreanof residents, only 15 percent of air trips and 7 percent of ferry trips were passing through to other destinations.

**How many of your Juneau ferry/air trips were primarily for...(trip purpose)?**  
*(Base: Those who traveled to Juneau)*

	Respondents n=47 % of Ferry Trips (n=198 trips)	Respondents n=36 % of Air Trips (n=196 trips)
Shopping	49%	14%
Medical	20	29
Work/business	12	39
Passing through to other destinations	7	15
Visiting friends and relatives	6	2
Special events such as school and sports	6	1
For other reasons	-	1

**Petersburg Travel**

Three out of five (59 percent) Kake residents did not travel to Petersburg in the last 12 months. On average, Kake residents traveled to Petersburg 1.1 times. Among Kake residents who did visit Petersburg, an average of 1.8 trips were by ferry and .9 trips were by air. Fifty-six percent of ferry trips by Kake residents to Petersburg included a vehicle.

**In the past 12 months, how many trips have you yourself, made to Petersburg?**  
*(including trips where respondent was passing through Petersburg)*

n=49	% of Total
Zero	59%
1	16
2	8
3	6
4	6
5+	4
<b>Average number of trips per year</b>	<b>1.1</b>

### Number of Trips by Mode of Transportation

(Base: those who have taken a trip to Petersburg in the last 12 months)

n=20	Ferry % of Base	Air % of Base
Zero	15%	65%
1	40	15
2	20	10
3	10	-
4	10	5
5+	-	5
<b>Average number of trips per year</b>	<b>1.8</b>	<b>0.9</b>

#### PETERSBURG: PURPOSE OF TRIPS

Thirty-nine percent of Kake residents visited Petersburg by air for medical reasons, while 36 percent of ferry travel was also for medical purposes. One quarter of ferry travel to Petersburg was primarily passing through to other destinations, as was 11 percent of air travel. Twenty-two percent of air trips were to visit family and friends, and 17 percent were primarily for shopping. Seventeen percent of ferry trips were to visit family and friends.

#### How many of your Petersburg ferry/air trips were primarily for...(trip purpose)?

(Base: Those who traveled to Petersburg)

	Respondents n=17 % of Ferry Trips (n=36 trips)	Respondents n=7 % of Air Trips (n=18 trips)
Medical	36%	39%
Passing through to other destinations	25	11
Visiting friends and relatives	17	22
Work/business	8	11
Shopping	6	17
Special events such as school and sports	6	-
For other reasons	3	-

#### Sitka Travel

Only 10 percent of Kake residents did not travel to Sitka at least once in the past 12 months. Kake residents traveled to Sitka an average of 4.1 times. An average of 2.8 trips were by ferry and 2.3 were by air. Of the total ferry trips to Sitka in the past 12 months, 65 percent included a vehicle.

**In the past 12 months, how many  
trips have you yourself, made to Sitka?**  
*(Including trips where respondent was passing through Sitka)*

n=50	% of Total
Zero	10%
1	20
2	18
3	14
4	20
5	2
6 – 10	10
11+	6
<b>Average number of trips per year</b>	<b>4.1</b>

**Number of Trips by Mode of Transportation**  
*(Base: those who have taken a trip to  
Sitka in the last 12 months)*

n=40	Ferry % of Base	Air % of Base
Zero	28%	26%
1	30	19
2	13	21
3	8	12
4	10	12
5	-	-
6 – 10	10	7
11+	3	2
<b>Average number of trips per year</b>	<b>2.8</b>	<b>2.3</b>

**SITKA: PURPOSE OF TRIPS**

The largest proportion of trips to Sitka by Kake residents were for medical purposes: 68 percent of air trips and 55 percent of ferry trips.

**How many of your Sitka ferry/air trips were primarily for...(trip purpose)?**  
*(Base: Those who traveled to Sitka)*

	Respondents n=29 % of Ferry Trips (n=112 trips)	Respondents n=31 % of Air Trips (n=96 trips)
Medical	55%	68%
Shopping	14	6
Work/business	4	9
Visiting friends and relatives	4	-
Passing through to other destinations	3	11
Special events such as school and sports	2	-
For other reasons	18	5

**Vehicle Use in Communities**

Only 8 percent of Kake residents report that they keep a car in Juneau, Sitka, or Petersburg. Of that 8 percent, all of the vehicles were kept in Juneau.

**Do you keep a car in Juneau, Sitka, or Petersburg?**

n=50	% of Total
Yes	8%
No	90
Don't know	2

**Estimated Usage**

When asked about their anticipated usage of three different road/shuttle options between Kake and Petersburg, Kake residents estimated they would use a road/shuttle connection that costs \$30 and takes three hours one-way an average of 8.8 times per year, a connection that takes 4 hours and costs \$50 an average of 5.8 times, and a connection that costs \$100 and takes 6 hours an average of 2.7 times.

If a new road and shuttle ferry made it possible to travel to Petersburg for a total one-way cost for a car and driver of about XX including gas and ferry tickets and the total one-way travel time was about xx hours, approximately how many times per year would you use the new ferry/road to travel to Petersburg?

### Estimated Usage of a New Road and Shuttle Ferry, by Cost and Time

Est. Number of Trips	\$30 + 3 hrs one-way n=50	\$50 + 4 hrs one-way n=33	\$100 + 6 hrs one-way n=26
Zero	34%	42%	59%
1	6	4	7
2	8	4	5
3	2	2	2
4	2	7	5
5	2	2	-
6 – 10	14	11	9
11+	22	24	14
Don't know	10	2	-
<b>Average number of trips per year</b>	<b>8.8</b>	<b>5.8</b>	<b>2.7</b>

One-third of Kake residents reported it is very likely they would use a new road for subsistence or recreation, almost a third (29 percent) said it is somewhat likely, and another third (33 percent) said it is not likely. Among those who said they would use the road for this purpose, respondents predicted they would use the road an average of 30 times annually.

### Likelihood of using a new road for subsistence and/or recreational purposes

n=48	% of Total
Very likely	33%
Somewhat likely	29
Not likely	33
Don't know	2
Refused	2

**Annual Usage of a New Road for  
Subsistence and Recreational Activities**  
*(Base: those who would use a new road for  
subsistence and/or recreational purposes)*

<b>n=29</b>	<b>% of Base</b>
1	-%
2	17
3	3
4	-
5	10
6 – 10	17
11+	41
Don't know/refused	10
<b>Average number of trips per year</b>	<b>30.1</b>

Most Kake residents do not anticipate the number of trips they would make to Juneau or Sitka changing if the road/ferry connection between Kake and Petersburg is built. Seventy percent said the number of trips to Juneau would not change and 80 percent said the number to Sitka would not change. Approximately one out of ten (14 percent for Juneau and 8 percent for Sitka) expected their trips would decrease slightly.

**If a road/ferry connection were built between Kake and Petersburg  
do you think the number of trip you make each year to xxx would...**

<b>n=50</b>	<b>Juneau % of Total</b>	<b>Sitka % of Total</b>
Increase significantly	8%	4%
Increase slightly	2	4
Not change	70	80
Decrease slightly	14	8
Decrease significantly	2	-
Don't know	4	4

The average age of Kake respondents was 52.3 and average income was \$57,000.

### Demographics

<b>N=50</b>	<b>% of Total</b>
<b>Gender</b>	
Male	45%
Female	55
<b>Age</b>	
Under 25	2%
25 – 34	18
35 – 44	12
45 – 54	20
55 – 64	28
65+	20
<b>Respondent average age</b>	<b>52.3</b>
<b>Household Size</b>	
1	8%
2	38
3	18
4	6
5	14
6+	16
<b>Average household size</b>	<b>3.5</b>
<b>Income</b>	
Less than \$15,000	14%
\$15,001 - \$25,000	12
\$25,001 - \$50,000	22
\$50,001 - \$75,000	18
\$75,001 - \$100,000	14
\$100,001 - \$125,000	8
\$125,001 - \$150,000	6
Refused	6
<b>Average household income</b>	<b>\$57,000</b>

## **Survey Instruments**

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# Kake Access Transportation Survey

## Kake Household Survey

PHONE # \_\_\_\_\_

SURVEY # \_\_\_\_\_

INTERVIEWER NAME \_\_\_\_\_

DATE \_\_\_\_\_

Cell/landline \_\_\_\_\_

Hi, this is \_\_\_\_\_ with the McDowell Group. We are conducting a study to understand the travel needs of Kake residents. This is not a political poll. Your participation will help transportation planning for your community. I'd like to ask you a few quick questions.

1. **In what year were you born? 19\_\_\_\_\_** (If born after 1996, ask for an adult. If none available, thank and end survey.)  Refused (thank and end survey)

2. **Which Southeast community, if any, is most important for you to have access to by FERRY?**  
 (Don't read list) **Which is the second most?** (Write 1 for most important and 2 for second most important)

- |              |                   |
|--------------|-------------------|
| _____ None   | _____ Petersburg  |
| _____ Juneau | _____ Hoonah      |
| _____ Sitka  | _____ Ketchikan   |
| _____ Angoon | _____ Other _____ |
- Refused

3. **Which southeast community, if any, is most important for you to have access to by AIR?**  
 (Don't read list) **Which is the second most?** (Write 1 for most important and 2 for second most important)

- |              |                   |
|--------------|-------------------|
| _____ None   | _____ Petersburg  |
| _____ Juneau | _____ Hoonah      |
| _____ Sitka  | _____ Ketchikan   |
| _____ Angoon | _____ Other _____ |
- Refused

4. **In the past 12 months, how many trips have you, yourself, made from Kake to Juneau? Please include trips where you were just passing through Juneau.**

(If zero, skip to Q7)

4a. How many of these trips were by ferry? \_\_\_\_\_

4b. How many of these trips were by air? \_\_\_\_\_

	# of trips	Don't know/refused
Total Trips	_____	<input type="checkbox"/>
a. By ferry	_____	<input type="checkbox"/>
b. By air	_____	<input type="checkbox"/>

[Read] We would like to understand the primary reasons that you travel to Juneau. For each mode of travel, I am going to ask you if the primary purpose of your trip was for medical, shopping, visiting friends and relatives, special events, work, or just passing through to other destinations.

5. **How many of your (# from Q4a) Juneau FERRY trips were primarily for..**(Read medical to passing through..)

- |  |                                     |
|--|-------------------------------------|
| _____ Medical                                  | <input type="checkbox"/> Don't know |
| _____ Shopping                                 | <input type="checkbox"/> Refused    |
| _____ Visiting friends and relatives           |                                     |
| _____ Special events such as school and sports |                                     |
| _____ Work/business                            |                                     |
| _____ Passing through to other destinations    |                                     |
| _____ Or for other reasons                     |                                     |

[Total should be equal to 4a]

5a. **Of the (# from 4a) ferry trips you made to Juneau this past year, on how many of these trips did you take a vehicle? # \_\_\_\_\_**  zero  Don't know/refused

6. **How many of your (# from Q4b) Juneau AIR trips were primarily for...**(Read list)

- |  |                                     |
|--|-------------------------------------|
| _____ Medical                                  | <input type="checkbox"/> Don't know |
| _____ Shopping                                 | <input type="checkbox"/> Refused    |
| _____ Visiting friends and relatives           |                                     |
| _____ Special events such as school and sports |                                     |
| _____ Work/business                            |                                     |
| _____ Passing through to other destinations    |                                     |
| _____ Or for other reasons                     |                                     |

[Total should be equal to 4a]

7. In the past 12 months, how many trips have you made from Kake to Petersburg? Please include trips where you were just passing through Petersburg.

(If zero, skip to Q10)

	# of trips	Don't know/refused
Total Trips		1 <input type="checkbox"/>
a. By ferry	_____	1 <input type="checkbox"/>
b. By air	_____	1 <input type="checkbox"/>

7a. How many of these trips were by ferry? \_\_\_\_\_

7b. How many of these trips were by air? \_\_\_\_\_

[Read] We would like to understand the primary reasons that you travel to Petersburg. For each mode of travel, I am going to ask you if the primary purpose of your trip was for medical, shopping, visiting friends and relatives, special events, work, or just passing through.

8. How many of your (# from Q7a) Petersburg **FERRY** trips were primarily for...(Read list)

- \_\_\_\_\_ Medical 08  Don't know
- \_\_\_\_\_ Shopping 09  Refused
- \_\_\_\_\_ Visiting friends and relatives
- \_\_\_\_\_ Special events such as school and sports
- \_\_\_\_\_ Work/business
- \_\_\_\_\_ Passing through to other destinations
- \_\_\_\_\_ Or for other reasons

[Total should be equal to 7a]

8a. Of the (# from 7a) ferry trips you made to Petersburg this past year, on how many of these trips did you take a vehicle? # \_\_\_\_\_ 1  Zero 2  Don't know/refused

9. How many of your (# from Q7b) Petersburg **AIR** trips were primarily for...(Read list)

- \_\_\_\_\_ Medical 08  Don't know
- \_\_\_\_\_ Shopping 09  Refused
- \_\_\_\_\_ Visiting friends and relatives
- \_\_\_\_\_ Special events such as school and sports
- \_\_\_\_\_ Work/business
- \_\_\_\_\_ Passing through to other destinations
- \_\_\_\_\_ Or for other reasons

[Total should be equal to 7b]

10. In the past 12 months, how many trips have you made from Kake to Sitka? Please include trips where you were just passing through Sitka.

(If zero, skip to Q13)

	# of trips	Don't know/refused
Total Trips		1 <input type="checkbox"/>
a. By ferry	_____	1 <input type="checkbox"/>
b. By air	_____	1 <input type="checkbox"/>

10a. How many of these trips were by ferry? \_\_\_\_\_

10b. How many of these trips were by air? \_\_\_\_\_

[Read] We would like to understand the primary reasons that you travel to Sitka.

11. How many of your (# from Q10a) Sitka **FERRY** trips were primarily for...(Read list)

- \_\_\_\_\_ Medical 08  Don't know
- \_\_\_\_\_ Shopping 09  Refused
- \_\_\_\_\_ Visiting friends and relatives
- \_\_\_\_\_ Special events such as school and sports
- \_\_\_\_\_ Work/business
- \_\_\_\_\_ Passing through to other destinations
- \_\_\_\_\_ Or for other reasons

[Total should be equal to 10a]

11a. Of the (# from 10a) ferry trips you made to Sitka this past year, on how many of these trips did you take a vehicle? # \_\_\_\_\_ 1  Zero 2  Don't know/refused

12. How many of your (# from Q10b) Sitka **AIR** trips were primarily for...(Read list)

- \_\_\_\_\_ Medical 08  Don't know
- \_\_\_\_\_ Shopping 09  Refused
- \_\_\_\_\_ Visiting friends and relatives
- \_\_\_\_\_ Special events such as school and sports
- \_\_\_\_\_ Work/business
- \_\_\_\_\_ Passing through to other destinations
- \_\_\_\_\_ Or for other reasons

[Total should be equal to 10b]



# Kake Access Transportation Survey Petersburg/Kupreanof Household Survey

PHONE # \_\_\_\_\_

SURVEY # \_\_\_\_\_

INTERVIEWER NAME \_\_\_\_\_

DATE \_\_\_\_\_

Cell/landline \_\_\_\_\_

Hi, this is \_\_\_\_\_ with the McDowell Group. We are conducting a study to understand the travel needs of Petersburg residents. This is not a political poll. Your participation will help transportation planning for your community. I'd like to ask you a few quick questions.

1. **In what year were you born? 19\_\_\_\_\_** (If born after 1996, ask for an adult. If none available, thank and end survey.)  Refused (thank and end survey)

2. **Which Southeast community, if any, is most important for you to have access to by FERRY?** (Don't read list) **Which is the second most?** (Write 1 for most important and 2 for second most important)

- |              |   |
|--------------|---|
| _____ None   | _____ Wrangell                              |
| _____ Juneau | _____ Ketchikan                             |
| _____ Sitka  | _____ Other _____                           |
| _____ Kake   | <input type="checkbox"/> Don't know/Refused |

3. **Which southeast community, if any, is most important for you to have access to by AIR?** (Don't read list) **Which is the second most?** (Write 1 for most important and 2 for second most important)

- |              |   |
|--------------|---|
| _____ None   | _____ Wrangell                              |
| _____ Juneau | _____ Ketchikan                             |
| _____ Sitka  | _____ Other _____                           |
| _____ Kake   | <input type="checkbox"/> Don't know/Refused |

4. **In the past 12 months, how many trips have you, yourself, made to Juneau? Please include trips where you were just passing through Juneau.**

**Total trips to Juneau # \_\_\_\_\_** (If zero, skip to Q7)  Don't know/ref

4a. **How many of these trips were by ferry? # \_\_\_\_\_**  Don't know/ref

4b. **How many of these trips were by air? # \_\_\_\_\_**  Don't know/ref

[Read] **We would like to understand the primary reasons that you travel to Juneau.**

5. **How many of your (# from Q4a) Juneau FERRY trips were primarily for...** (Read list)

- |  |                                     |
|--|-------------------------------------|
| _____ Medical                                  | <input type="checkbox"/> Don't know |
| _____ Shopping                                 | <input type="checkbox"/> Refused    |
| _____ Visiting friends and relatives           |                                     |
| _____ Special events such as school and sports |                                     |
| _____ Work/business                            |                                     |
| _____ Passing through to other destinations    |                                     |
| _____ Or for other reasons                     |                                     |

[Total should be equal to 4a]

5a. **Of the (# from 4a) ferry trips you made to Juneau this past year, on how many of these trips did you take a vehicle? # \_\_\_\_\_**  Zero     Don't know/refused

6. How many of your (# from Q4b) Juneau AIR trips were primarily for...(Read list)

- \_\_\_\_\_ Medical 08  Don't know
- \_\_\_\_\_ Shopping 09  Refused
- \_\_\_\_\_ Visiting friends and relatives
- \_\_\_\_\_ Special events such as school and sports
- \_\_\_\_\_ Work/business
- \_\_\_\_\_ Passing through to other destinations
- \_\_\_\_\_ Or for other reasons

[Total should be equal to 4b]

7. In the past 12 months, how many trips have you made to Sitka? Please include trips where you were just passing through Sitka. Total trips to Sitka # \_\_\_\_\_ If zero, skip to Q10  DK/ref

7a. How many of these trips were by ferry? # \_\_\_\_\_  Don't know/ref

7b. How many of these trips were by air? # \_\_\_\_\_  Don't know/ref

[Read] We would like to understand the primary reasons that you travel to Sitka.

8. How many of your (# from Q7a) Sitka FERRY trips were primarily for...(Read list)

- \_\_\_\_\_ Medical 08  Don't know
- \_\_\_\_\_ Shopping 09  Refused
- \_\_\_\_\_ Visiting friends and relatives
- \_\_\_\_\_ Special events such as school and sports
- \_\_\_\_\_ Work/business
- \_\_\_\_\_ Passing through to other destinations
- \_\_\_\_\_ Or for other reasons

[Total should be equal to 7a]

8a. Of the (# from 7a) ferry trips you made to Sitka this past year, on how many of these trips did you take a vehicle? # \_\_\_\_\_  Zero  Don't know/refused

9. How many of your (# from Q7b) Sitka AIR trips were primarily for...(Read list)

- \_\_\_\_\_ Medical 08  Don't know
- \_\_\_\_\_ Shopping 09  Refused
- \_\_\_\_\_ Visiting friends and relatives
- \_\_\_\_\_ Special events such as school and sports
- \_\_\_\_\_ Work/business
- \_\_\_\_\_ Passing through to other destinations
- \_\_\_\_\_ Or for other reasons

[Total should be equal to 7b]

10. In the past 12 months, how many trips have you made to Kake? \_\_\_\_\_ trips  Don't know  Refused If zero, skip to Q13 READ

10a. How many of these trips were by ferry? # \_\_\_\_\_

10b. How many of these trips were by air? # \_\_\_\_\_

[Read] We would like to understand the primary reasons that you travel to Kake.

11. How many of your (# from Q10a) Kake FERRY trips were primarily for...(Read list)

- \_\_\_\_\_ Visiting friends and relatives
  - \_\_\_\_\_ Special events such as school and sports
  - \_\_\_\_\_ Work/business
  - \_\_\_\_\_ Or for other reasons
- Don't know  Refused

12. How many of your (# from Q10b) Kake AIR trips were primarily for...(Read list)

- \_\_\_\_\_ Visiting friends and relatives
  - \_\_\_\_\_ Special events such as school and sports
  - \_\_\_\_\_ Work/business
  - \_\_\_\_\_ Or for other reasons
- Don't know  Refused

[Q13 Read] Now I am going to read you a description of the potential project. A study is being conducted to assess the need for a road connecting Petersburg and Kake. Several routes are being considered, ranging from 55 miles in length to 150 miles. A short ferry ride would be required to cross the Narrows. The shuttle ferry would make multiple trips daily.

It currently costs about \$100 for a car and a driver to travel one-way to Kake from Petersburg, with a travel time of about 5 hours one way. Marine Highway service to Kake is available every few days.

A road would make it possible to travel between Petersburg and Kake any day of the week, potentially including same-day round trips. The road would be maintained year-round. Kake would continue to receive the Marine Highway service it currently receives.

13a. If a new road and shuttle ferry made it possible to travel to Kake for a total one-way cost for a car and driver of about \$30 including gas and ferry tickets, and the total one-way travel time was about 3 hours, approximately how many times per year would you estimate you would use the new shuttle ferry/road to travel to Kake...?

\_\_\_\_\_ Times per year                      02  Don't know (skip to Q 14)  
01  Zero (skip to Q 14)                      03  Refused (skip to Q 14)

13b. How about \$50 and 4 hours (re-read description if needed)

\_\_\_\_\_ Times per year                      02  Don't know (skip to Q 14)  
01  Zero (skip to Q 14)                      03  Refused (skip to Q 14)

13c. How about \$100 and 6 hours (re-read description if needed) ?

\_\_\_\_\_ Times per year                      02  Don't know  
01  Zero    03  Refused

14. A new road to Kake would increase access to more areas of Kupreanof Island. How likely would you be to use some portion of a new road to Kake for subsistence or recreational purposes?

01  Very Likely                                      04  Don't know (Skip to Q15)  
02  Somewhat Likely                              05  Refused (Skip to Q15)  
03  Not Likely (Skip to Q15)

14a. About how many trips do you think you would take annually for recreational or subsistence purposes if there was a new road? \_\_\_\_\_ trips    01  Don't know/ref

15. And for my last question, please stop me at the category that best describes your total combined household income before taxes in the year 2013.

01  Less than \$15,000                      04  \$50,001 to \$75,000                      07  \$125,001 to \$150,000  
02  \$15,001 to \$25,000                      05  \$75,001 to \$100,000                      08  Over \$150,000  
03  \$25,001 to \$50,000                      06  \$100,001 to \$125,000                      09  Refused

15a. Do you know if anyone else in your household has participated in this survey?

01  Yes                      02  No                      03  Don't know/ref

**Thank you for participating in this important project!**

16. Gender (Don't ask)    01  Male    02  Female    03  Don't know

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## **Appendix B: Northern Panhandle Transportation Study Findings**

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Summary Table: All Communities

	All Respondents (n = 304)	Angoon (n = 45)	Elfin Cove (n = 5)	Gustavus (n = 52)	Hoonah (n = 93)	Kake (n = 58)	Pelican (n = 23)	Port Alexander (n = 11)	Tenakee Springs (n = 16)
<b>Which Southeast community is most important for you to have access to by ferry? (Top 2 responses)</b>									
Juneau	81%	73%	100%	92%	91%	71%	100%	18%	81%
Sitka	12	16	0	0	6	19	0	64	6
<b>Which Southeast community is second most important for you to have access to by ferry? (Top 2 responses)</b>									
Sitka	52%	68%	40%	19%	55%	55%	65%	27%	63%
Juneau	13	16	0	0	6	22	0	55	13
<b>Which Southeast community is most important for you to have access to by air? (Top 2 responses)</b>									
Juneau	82%	78%	80%	98%	92%	69%	91%	9%	100%
Sitka	11	11	0	2	2	21	4	82	0
<b>Which Southeast community is second most important for you to have access to by air? (Top 2 responses)</b>									
Sitka	52%	67%	60%	25%	55%	53%	79%	9%	63%
Juneau	11	11	20	2	3	22	5	64	0
<b>Most important issues in addressing ferry transportation needs (First and second responses combined)</b>									
Frequent ferry service	62%	60%	40%	60%	57%	67%	78%	36%	69%
Low cost ferry service	60	67	40	75	52	62	48	55	38
Convenient arrival/departure times	40	36	80	33	59	28	35	36	44
Fast travel times	30	33	40	17	26	40	26	36	25
<b>Most important issues in addressing air transportation needs (First and second responses combined)</b>									
Low cost air service	78%	80%	80%	73%	80%	83%	70%	55%	56%
Frequent air service	52	44	60	54	52	48	70	73	56
Convenient arrival/departure times	38	38	60	40	40	36	26	45	31
Fast travel times	19	24	0	25	16	17	9	9	31
<b>When traveling in Southeast Alaska, what is the main reason you would choose to fly instead of taking the ferry? (Top 4 responses)</b>									
Ferry takes too long/travel time	58%	67%	60%	56%	55%	60%	65%	27%	63%
Air sched. convenience/ferry sched. inconvenience	26	24	20	17	35	26	13	18	6
No AMHS service to community or destination	10	2	60	35	0	5	17	55	19
Don't fly/won't fly/never fly	3	4	0	0	0	5	9	9	0
<b>When traveling in Southeast Alaska, what is the main reason you would choose to take the ferry instead of fly? (Top 4 responses)</b>									
Bring vehicle/freight	40%	36%	40%	42%	42%	48%	22%	9%	31%
Less expensive	33	29	60	27	24	45	43	55	56
Weather	30	27	40	15	34	41	22	0	31
Relaxing	12	7	0	17	10	17	9	9	19
<b>Do you keep a car in Juneau, Sitka, or Petersburg?</b>									
Juneau	11%	11%	40%	25%	5%	4%	13%	0%	44%
Sitka	1	0	0	0	0	0	4	27	6
Petersburg	0	0	0	0	0	0	0	0	0
<b>Have you traveled on an Allen Marine, Four Seasons or other passenger-only ferry this year?</b>									
Yes	21%	44%	0%	10%	25%	2%	35%	0%	38%
<b>(If Yes) How satisfied were you with the overall experience?</b>									
Satisfied or very satisfied	90%	90%	N/A	80%	87%	100%	100%	N/A	100%
Dissatisfied or very dissatisfied	8	5	N/A	20	13	0	0	N/A	0
Refused	2	5	N/A	0	0	0	0	N/A	0
Average age	51 years old	48 years old	55 years old	51 years old	50 years old	50 years old	58 years old	54 years old	57 years old
Average income	\$42,100	\$34,200	\$73,300	\$51,800	\$49,000	\$33,000	\$50,200	\$34,300	\$41,700

Summary Table: All Communities (Cont'd)

TRAVEL TO JUNEAU	All Respondents (n = 304)	Angoon (n = 45)	Elfin Cove (n = 5)	Gustavus (n = 52)	Hoonah (n = 93)	Kake (n = 58)	Pelican (n = 23)	Port Alexander (n = 11)	Tenakee Springs (n = 16)
<b>In the past 12 months, how many trips have you made to Juneau?</b>									
Traveled to Juneau	93%	98%	100%	96%	97%	89%	87%	73%	94%
Average number of trips (including non-travelers)	9.5 trips	9.4 trips	10.4 trips	9.8 trips	14.0 trips	6.0 trips	6.0 trips	1.4 trips	10.1 trips
By ferry	3.7 trips	4.8 trips	0.0 trips	0.0 trips	6.3 trips	2.7 trips	1.7 trips	0.1 trips	6.1 trips
By air	5.8 trips	4.6 trips	10.4 trips	9.8 trips	7.7 trips	3.4 trips	4.3 trips	1.3 trips	4.1 trips
<b>Purpose of Juneau ferry trips (Top 3; % of total trips)</b>									
Shopping	34%	36%	N/a	N/a	37%	28%	26%	0%	16%
Medical	23	15	N/a	N/a	25	28	21	0	30
No primary purpose/multiple reasons	18	31	N/a	N/a	8	24	32	0	32
<b>Purpose of Juneau air trips (Top 3; % of total trips)</b>									
Work	26%	21%	35%	24%	28%	29%	12%	29%	37%
Medical	26	14	38	29	30	21	10	14	35
Shopping	19	19	21	29	14	17	13	29	8
<b>Desired frequency of ferry service to Juneau (avg.)</b>									
With desired service, projected # of annual ferry trips (Base: those who desire service to Juneau)	1.7 times / week	1.7 times / week	0.6 times / week	1.1 times / week	2.6 times / week	1.5 times / week	0.7 times / week	0.9 times / week	1.2 times / week
Number of trips on which vehicle would be preferred	12.6 trips / year	14.0 trips / year	15.8 trips / year	12.6 trips / year	15.6 trips / year	10.8 trips / year	8.1 trips / year	2.9 trips / year	11.1 trips / year
	6.9 trips / year	8.1 trips / year	0.0 trips / year	5.9 trips / year	10.7 trips / year	5.0 trips / year	2.4 trips / year	0.6 trips / year	0.9 trips / year
<b>TRAVEL TO SITKA</b>									
<b>In the past 12 months, how many trips have you made to Sitka?</b>									
Traveled to Sitka	64%	75%	40%	23%	61%	84%	48%	91%	50%
Average number of trips (including non-travelers)	2.8 trips	3.9 trips	3.0 trips	0.4 trips	2.3 trips	4.3 trips	0.9 trips	5.1 trips	3.3 trips
By ferry	1.8 trips	2.7 trips	0.0 trips	0.0 trips	1.6 trips	2.8 trips	0.1 trips	0.0 trips	2.8 trips
By air	1.0 trips	1.2 trips	3.0 trips	0.4 trips	0.6 trips	1.5 trips	0.8 trips	5.1 trips	0.4 trips
<b>Purpose of Sitka ferry trips (Top 3; % of total trips)</b>									
Medical	48%	33%	N/a	N/a	52%	65%	0%	N/a	0%
Visiting friends and relatives	19	26	N/a	N/a	32	6	0	N/a	2
Shopping	17	44	N/a	N/a	0	4	50	N/a	51
<b>Purpose of Sitka air trips (Top 3; % of total trips)</b>									
Medical	52%	61%	0%	21%	49%	72%	37%	30%	0%
Work	22	22	67	32	23	12	21	32	29
Visiting friends and relatives	10	6	33	26	16	4	16	7	71
<b>Desired frequency of ferry service to Sitka (avg.)</b>									
With desired service, projected # of annual ferry trips (Base: those who desire service to Sitka)	0.9 times / week	1.4 times / week	1.8 times / month	0.6 times / month	1.1 times / week	1.2 times / week	0.9 times / month	0.7 times / week	0.7 times / week
Number of trips on which vehicle would be preferred	6.9 trips / year	9.4 trips / year	21.7 trips / year	2.4 trips / year	6.0 trips / year	6.4 trips / year	4.8 trips / year	8.1 trips / year	6.9 trips / year
	3.1 trips / year	5.1 trips / year	0.0 trips / year	1.1 trips / year	3.0 trips / year	3.0 trips / year	1.1 trips / year	0.0 trips / year	2.3 trips / year
<b>TRAVEL TO PETERSBURG</b>									
<b>In the past 12 months, how many trips have you made to Petersburg?</b>									
Traveled to Petersburg	20%	4%	20%	4%	10%	56%	22%	9%	19%
Average number of trips (including non-travelers)	0.5 trips	0.0 trips	1.2 trips	0.1 trips	0.1 trips	1.6 trips	0.5 trips	0.2 trips	0.6 trips
By ferry	0.3 trips	0.0 trips	0.0 trips	0.0 trips	0.1 trips	1.2 trips	0.3 trips	0.0 trips	0.3 trips
By air	0.2 trips	0.0 trips	1.2 trips	0.0 trips	0.1 trips	0.4 trips	0.2 trips	0.2 trips	0.4 trips
<b>Desired frequency of ferry service to Pbg. (avg.)</b>									
With desired service, projected # of annual ferry trips (Base: those who desire service to Petersburg)	1.3 times / month	8.6 times / year	2.4 times / year	2.4 times / year	0.9 times / month	0.8 times / week	3.5 times / year	1.4 times / month	2.0 times / year
Number of trips on which vehicle would be preferred	4.6 trips / year	3.0 trips / year	4.0 trips / year	1.8 trips / year	2.7 trips / year	6.5 trips / year	2.3 trips / year	3.2 trips / year	3.3 trips / year
	2.0 trips / year	0.3 trips / year	0.0 trips / year	1.0 trips / year	2.3 trips / year	3.0 trips / year	0.0 trips / year	0.0 trips / year	1.7 trips / year

## **Appendix C: Community and Industry Interview Template**

The following interview template was used for the Kake Access community and industry interviews discussed in section 2.8 of this report.

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# Kake Access

## INTERVIEW AND TELEPHONE RECORD

---

**Date:**

**To:** Kake Access Project Files

**From:** Interviewer Name

**Re:** Key Informant Interview- *Name of Organization*

---

**Date of Meeting:**

**Time of Meeting:**

**Attendance:**

1. Name, Position, Organization
- 2.
- 3.

### Purpose

As you may already be aware, a study is being conducted to assess the need for a road connecting Kake and Petersburg. McDowell Group/Northern Economics is interviewing community representatives and businesses in order to better understand travel preferences between the communities. Information from this interview will be used to inform a travel demand study on the project.

Before we begin interview questions, I would like to describe the road project under consideration in this study a bit more. Several routes are being considered, ranging from 55 miles in length to 150 miles. A short ferry ride (or multiple short ferry rides) would be required for any of the routes. The shuttle ferry would make multiple trips daily.

A road would provide access between Kake and Petersburg any day of the week, potentially including same-day round trips. The road would be maintained year-round. Finally, the road is proposed as a single lane gravel road connection. It would not impact the level of ferry service received by Kake and Petersburg.

### Topics Discussed

1. **How might you or your agency/business use a road between Kake and Petersburg? How do you see the road being used by your community? (Agencies Only)**

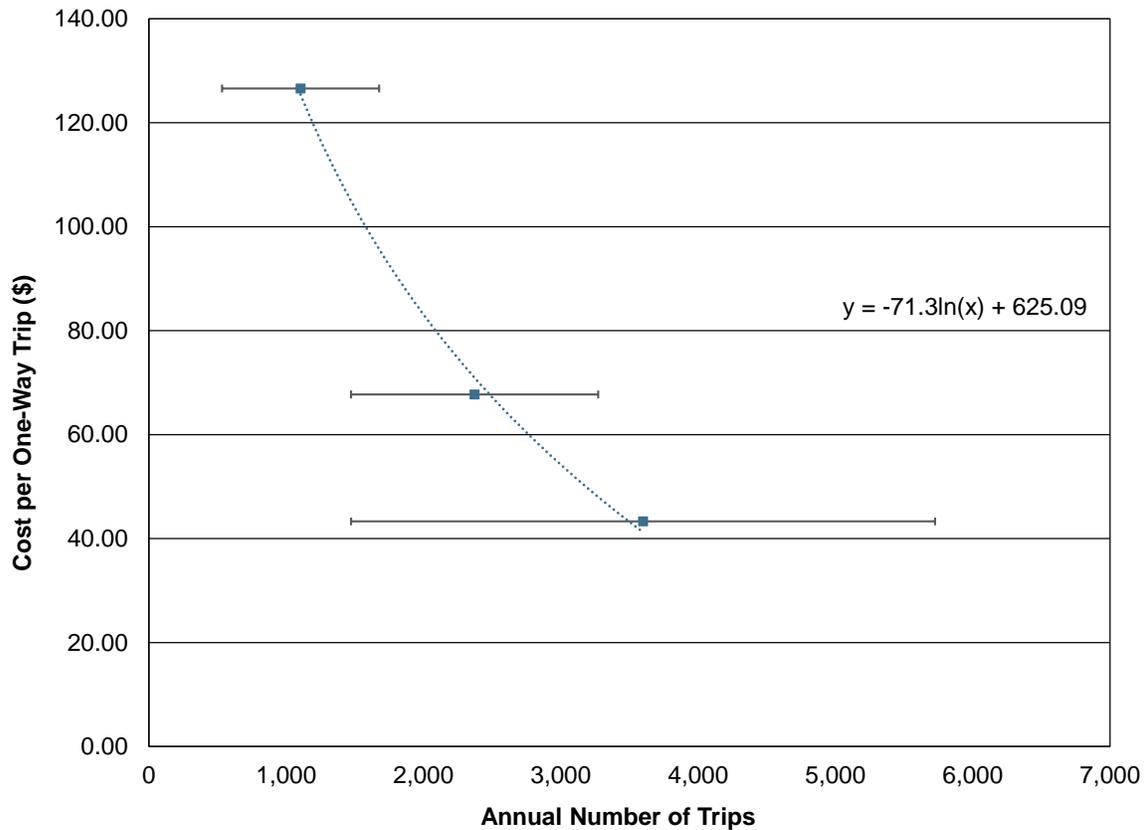


## Appendix D: Trip Demand Curves

This section discusses the estimated demand curves for travel developed using the McDowell Group Survey data.

Figure 6 presents the demand curve for Kake residents' use of the road for trips to or through Petersburg only. The downward slope of the curve shows that as the cost per trip decreases (vertical axis), the annual number of one-way trips would increase (horizontal axis). The horizontal bars indicate the likely range of the number of trips, based on the standard error in the survey.

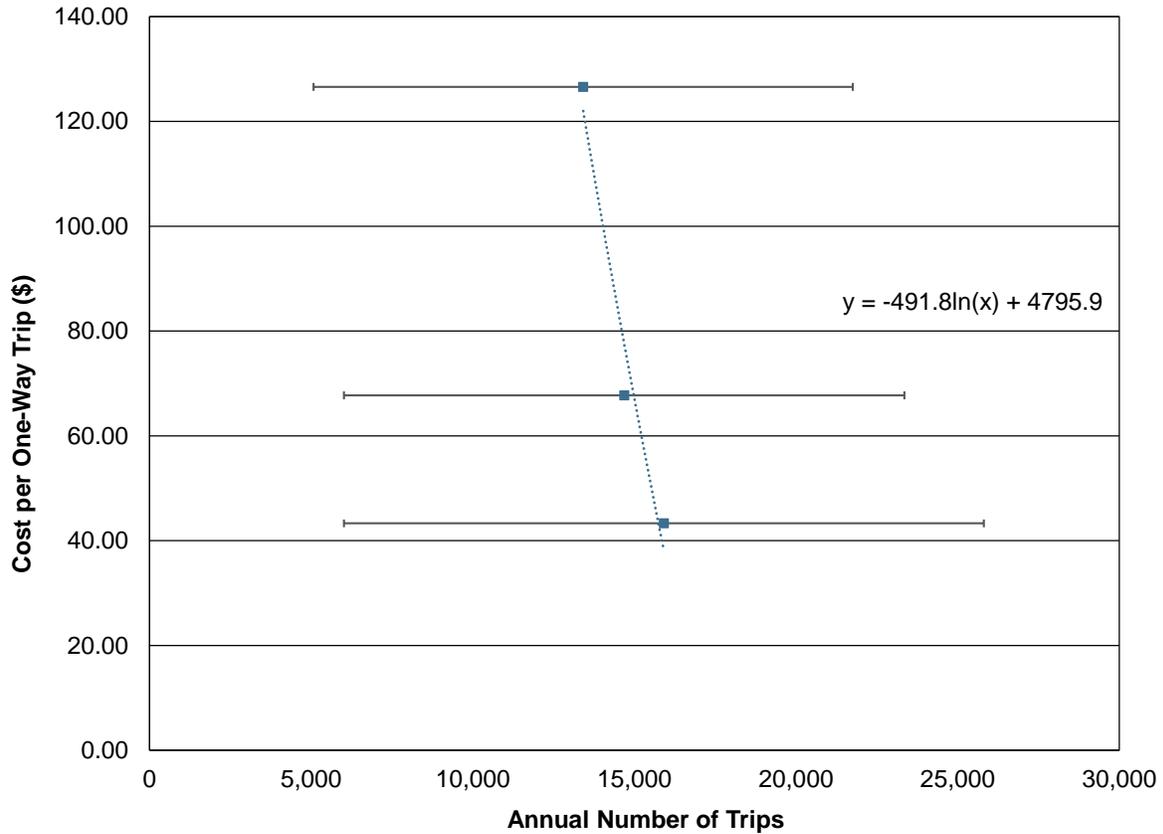
**Figure 6. Demand Curve for Kake Residents, Trips to or Through Petersburg Only**



Source: McDowell Group (2014) and Northern Economics, Inc. analysis

Figure 7 shows the demand for trips by Kake residents for both through-trips and subsistence or recreational purposes. Since there is not a cost associated with subsistence and recreational uses, including these types of trips causes demand to be more inelastic, which is seen by the steeper slope of the curve and the smaller change in the number of trips based on changes in cost.

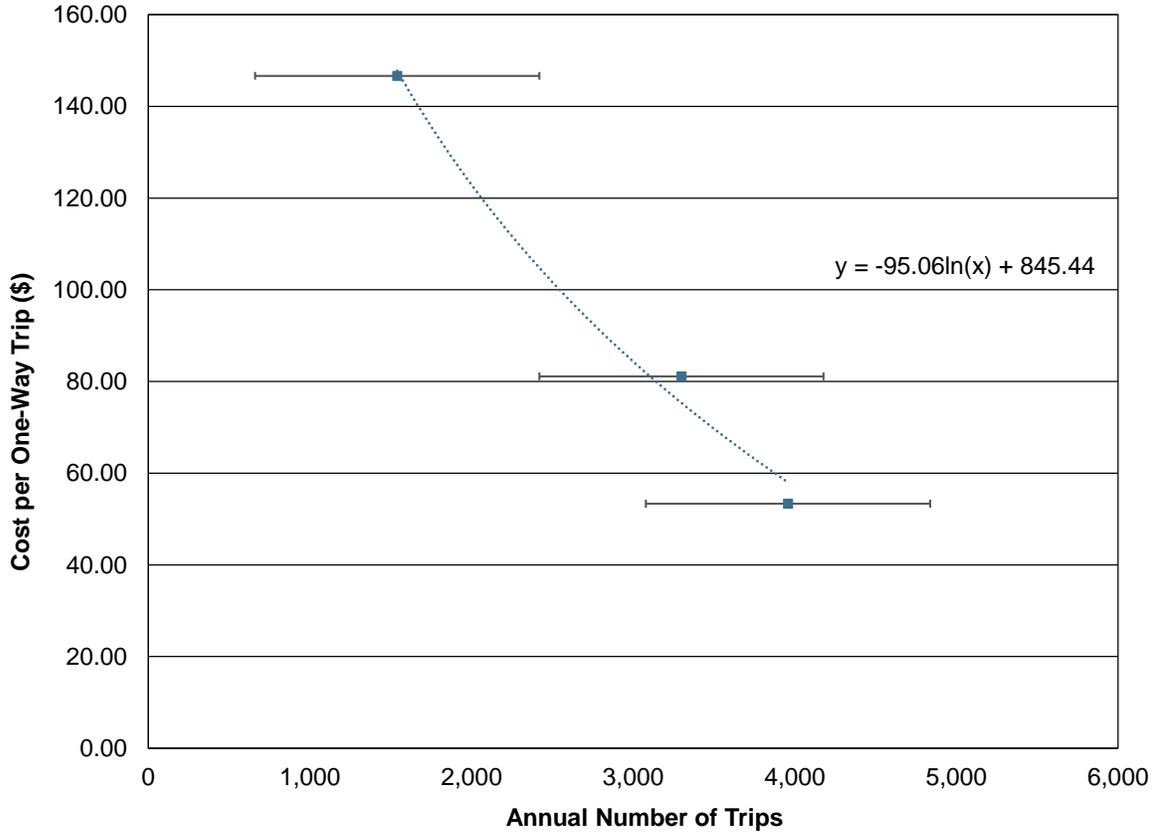
**Figure 7. Demand Curve for Kake Residents, All Trips**



Source: McDowell Group (2014) and Northern Economics, Inc. analysis

Figure 8 presents the demand curve for through-trips along the proposed road and ferry shuttle by Petersburg residents. Respondents reported that they would take far fewer trips than did Kake residents, and the demand curve shows a much more linear relationship between the cost and number of trips.

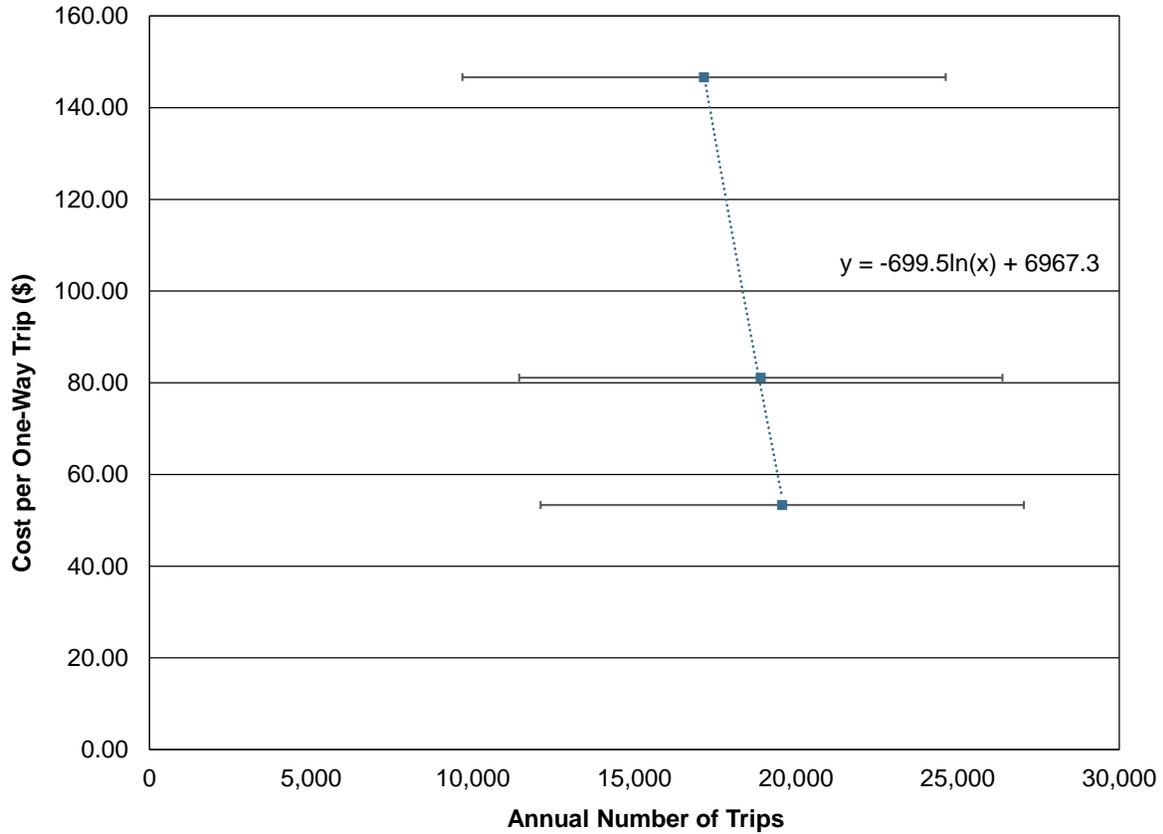
**Figure 8. Demand Curve for Petersburg Residents, Trips to or Through Kake Only**



Source: McDowell Group (2014) and Northern Economics, Inc. analysis

Figure 9 adds subsistence and recreation trips to through trips for Petersburg residents. Since the number of subsistence and recreation trips is independent of cost, the demand curve is more vertical, as it was for Kake.

**Figure 9. Demand Curve for Petersburg Residents, All Trips**



Source: McDowell Group (2014) and Northern Economics, Inc. analysis