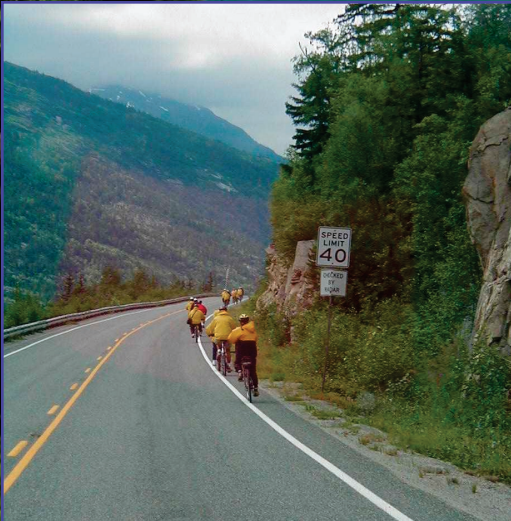


# Southeast Alaska Transportation Plan



**August 2004**

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STATE OF ALASKA  
OFFICE OF THE GOVERNOR  
JUNEAU

August 12, 2004

My Fellow Alaskan:

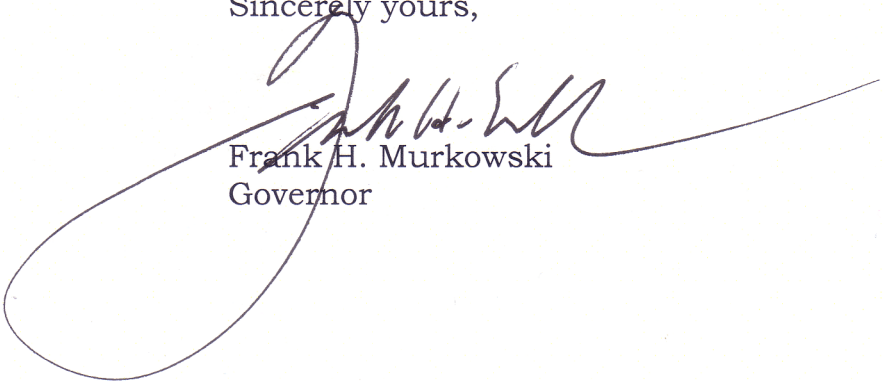
We now face the exciting challenge of extending the reach of the continent's highway system into Southeast Alaska. Southeast has many valuable attractions and resources that are needed in world markets and are vital to the future economic growth and stability of this region. Many of these potentials currently lay fallow, limited at least partly by the lack of affordable access. A good transportation system will be the backbone of our economy and will ensure a healthy economic future for our children and grandchildren.

Through extensive public involvement the Department of Transportation and Public Facilities has developed a long-range plan that lays out how to translate opportunities into action. This plan contains both long and short-range projects and goals which when implemented will significantly reduce our current dependence on long line ferries and provides better service to Alaskans. This plan provides a transition to a system of roads and shuttle ferries, operating on regular daily schedules which will link our island communities. Main line ferries will continue to service main line communities as traffic warrants.

The original mission of the Alaska Marine Highway System was to provide service between our towns and villages, and upon the construction of roads, the system was intended to transition into service from road head to road head. The creators of this system were correct in their vision and this plan will implement that goal. My goal is to provide Southeast Alaska with efficient, reliable, and cost-effective transportation. This can only happen by the development of a system of roads that are linked by short ferry crossings where applicable.

I wish to thank those who participated in developing this exciting plan, and ask each of you to join me in implementing this exciting vision to provide for our future by building a better, more reliable transportation system today.

Sincerely yours,



Frank H. Murkowski  
Governor





# Southeast Alaska Transportation Plan

**Frank Murkowski, Governor**

**Mike Barton, Commissioner,  
Alaska Department of Transportation and Public Facilities**

---

This plan is one of a series of regional, multi-modal transportation plans that are components of the Alaska Statewide Transportation Plan. State regulations require review and update of the Statewide Transportation Plan and its components every five years. This plan identifies area needs, provides general guidance on transportation development, and recommends specific transportation improvements for Southeast Alaska. For additional information or questions, contact:

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E-mail comments on the plan to: [satp@dot.state.ak.us](mailto:satp@dot.state.ak.us)

## **Adopted 2004 SATP Becomes Component of Statewide Plan**

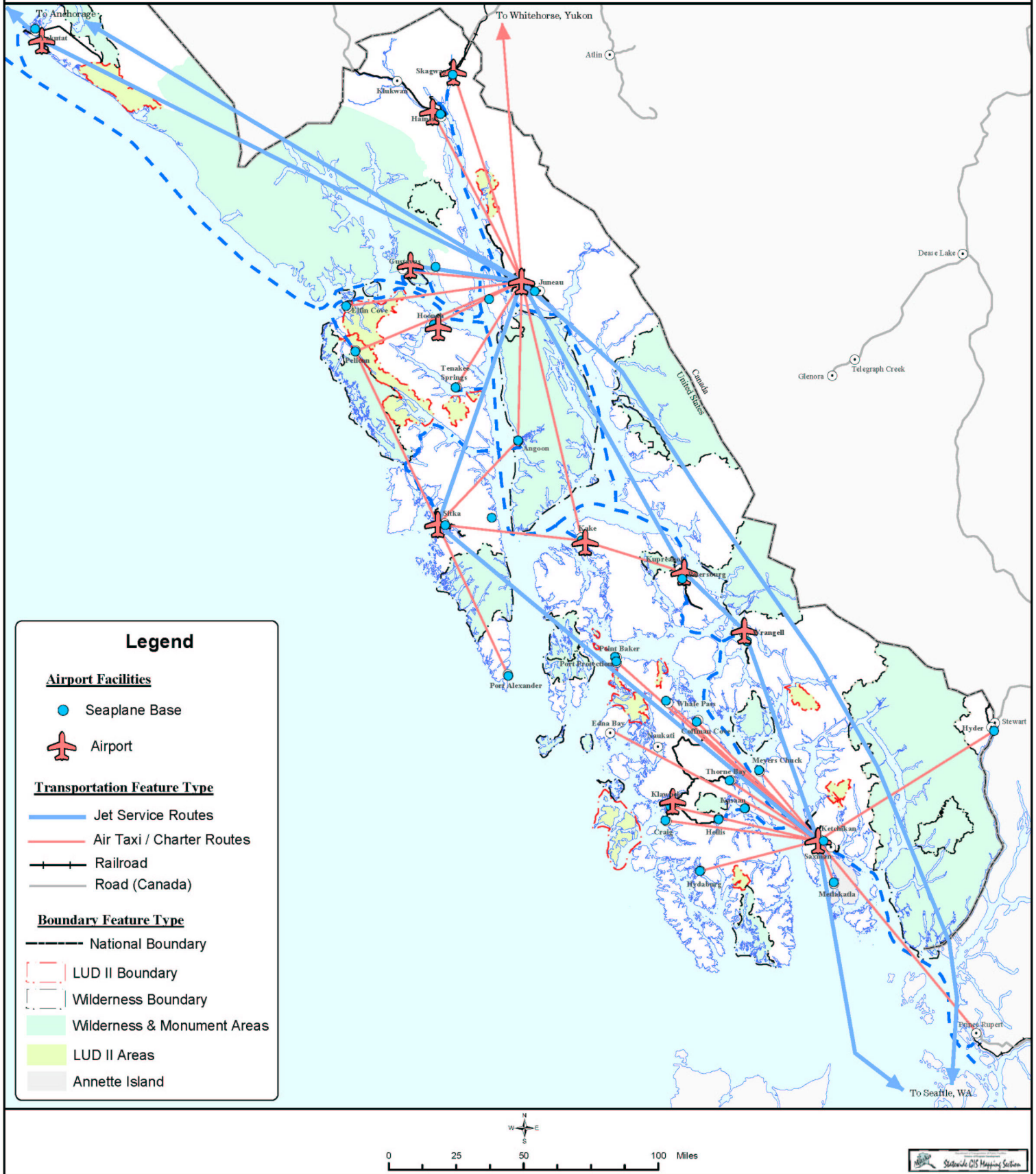
This SATP update draws its authority from Alaska Statute 44.42.050 and is a component of the Alaska Statewide Transportation Plan as defined in 23 CFR 450.214. In accordance with 17 AAC 05.150, I am proud to hereby approve and adopt the August 2004 Southeast Alaska Transportation Plan, as a component of the Alaska Statewide Transportation Plan.

Adopted:   
Mike Barton, Commissioner

Date: 8/14/04  
August 14, 2004

# Map 1

## Study Area & Existing Transportation System: Southeast Alaska





## **EXECUTIVE SUMMARY**

---

The Southeast Alaska Transportation Plan (SATP) includes three fundamental highway elements that better link the region at large to the continental highway system:

- The preferred alternative for the Juneau Access project is a road up the east side of Lynn Canal connecting Juneau to Skagway, and includes a short shuttle ferry crossing to Haines.
- In southern Southeast, the construction of new highways would establish a through connection from Ketchikan to the Cassiar Highway in Canada. This new route would also include connections to Wrangell and Petersburg. Initially these highway routes would require several shuttle ferry links, which ultimately could be replaced with bridges. With these links in place, travel between these communities and trips into Canada, would no longer require a lengthy ferry trip.
- A highway from Sitka across Baranof Island would improve the level of ferry service to Sitka and reduce cost to the traveler and the state.

A bridge to replace the airport ferry crossing of Tongass Narrows to Ketchikan International Airport (on Gravina Island) is key to improving air access to Ketchikan and outlying communities. Existing highways, especially portions of the Haines Highway, are in need of widening and upgrading, and all pavements require periodic rehabilitation. The plan recognizes the importance of completing the Walden Point Road Project to improve access to Metlakatla and the need for continued improvement of the road system providing access to communities on Prince of Wales Island.

### **The Ultimate Plan – Development of the Essential Transportation and Utility Corridors**

The plan identifies 34 essential transportation and utility corridors to be reserved and protected to meet future transportation needs. (For details, see Map 3 and Appendix A.) The ultimate highway development plan in the SATP is to construct roads through all of these transportation corridors. Key corridors and proposed highway designations are depicted in Map 3.

Map 1, to the left, shows the study area and existing transportation system in Southeast Alaska. Maps 2 and 3 at the end of this Executive Summary depict the 20-year transportation plan and the ultimate regional highway development plan, respectively.

Development of the corridors is necessary to efficiently connect communities to the regional transportation system, establish a regional power grid, and optimize service to the public. Through adoption of this SATP, the state requests that the Forest Service incorporate each of the 34 essential transportation and utility corridors (identified in Appendix A) into the Tongass Land Management Plan and reserve and protect these corridors for transportation and utility purposes. Adoption of this plan is an official expression of state policy that no other action by any other party should be taken (such as recommending wilderness areas) that would interfere with public use of any of the mapped corridors. In addition, the state requests that the Forest Service contribute to state efforts by improving and connecting forest roads that are located within essential road corridors identified by the state. Corridors of particular interest are Kake - Petersburg, Kake - Totem Bay, and North Prince of Wales Island Road - Red Bay.

Retirement of older ferries will occur, as new ferries and road segments are constructed. Following completion of highway links serving Juneau, Ketchikan, and Sitka, the primary roles of ferries in Southeast Alaska would be as follows:

- Continued operation of mainline service out of Bellingham and between Prince Rupert, British Columbia, and Prince William Sound.
- Expanded operations of new fast vehicle ferries serving Juneau, Petersburg, and Sitka. Fast ferry service is planned between Ketchikan and Petersburg, and a new southern gateway shuttle ferry is planned between Ketchikan and Prince Rupert. Following completion of the highway connections, the fast ferry between Ketchikan and Petersburg would be redeployed between Sitka and Petersburg. The southern gateway shuttle ferry between Ketchikan and Prince Rupert would continue to serve as demand warranted.
- Shuttle ferry connections for through highways links.
- Inter-Island Ferry Authority ferry connections to Prince of Wales Island via Hollis to Ketchikan and ferry service connecting Coffman Cove, Wrangell, and Petersburg.
- Ferry connections to less populous communities that remain isolated from the land highway network.

The plan includes a new airport at Angoon, public seaplane floats at Edna Bay and Naukati, and continued improvement of the region's 12 airports and 33 public seaplane floats.

The recommendations of the SATP are general. Uncertainties remain, such as the outcome of the necessary environmental and preliminary engineering studies. The performance of the new fast ferry, the *M/V Fairweather*, is being

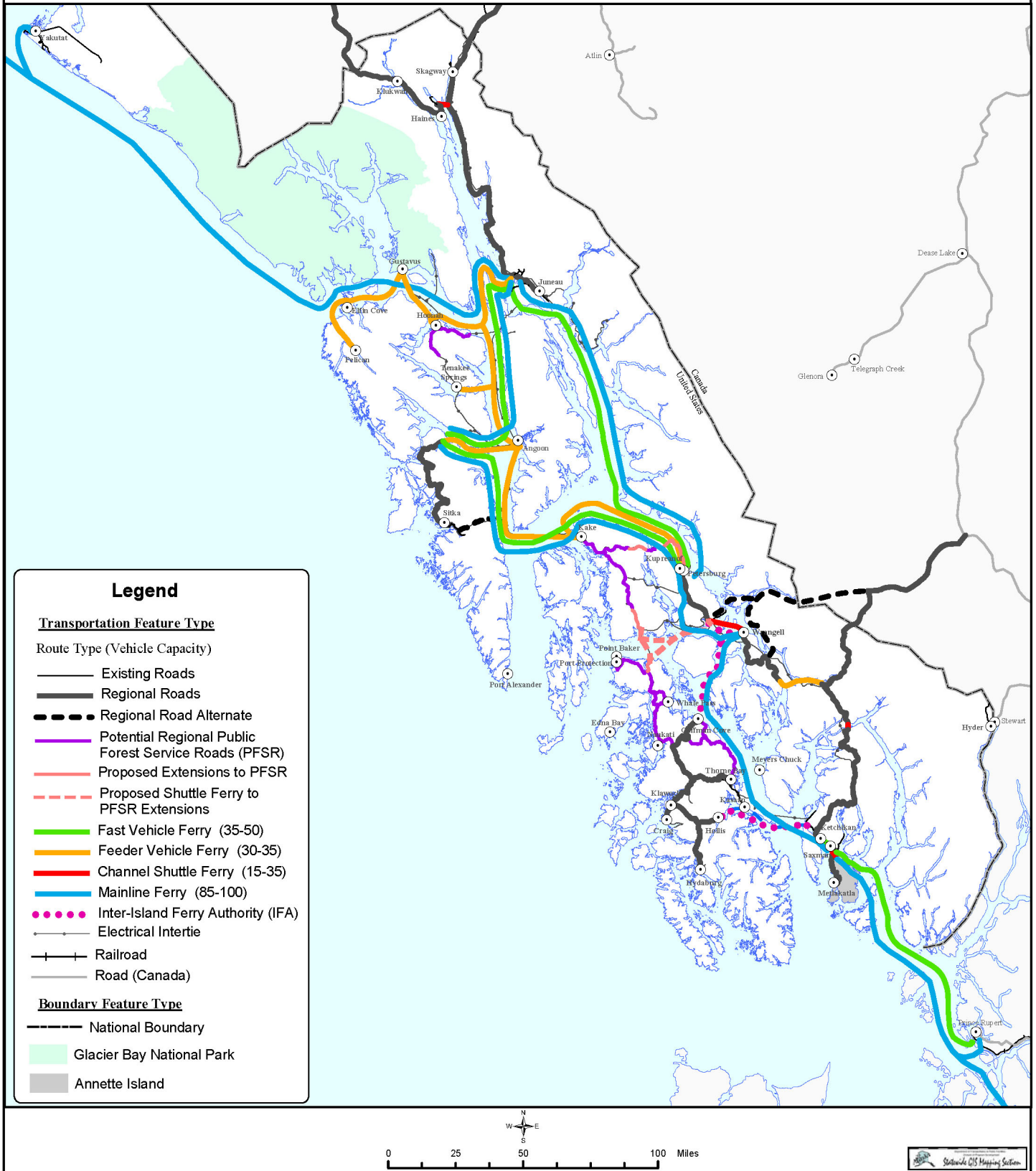


evaluated to determine whether the state would purchase additional fast ferries or pursue different ferry technology to replace an aging fleet. Should the state decide not to purchase additional ferries of the Fairweather class, existing ferries would be maintained, until replaced with more conventional vessels and road segments. Although the SATP proposes that specific road routes be developed and specific types of ferries be acquired, this approach does not preclude substitution of a different road route or vessel if subsequent information directs the state to a better transportation alternative to accomplish the same objective.

Fiscal requirements for the SATP are substantial. In the interim, until the highway connections included in the SATP can be completed, the region will need to rely on the Alaska Marine Highway System to fill many of the gaps in the highway system.

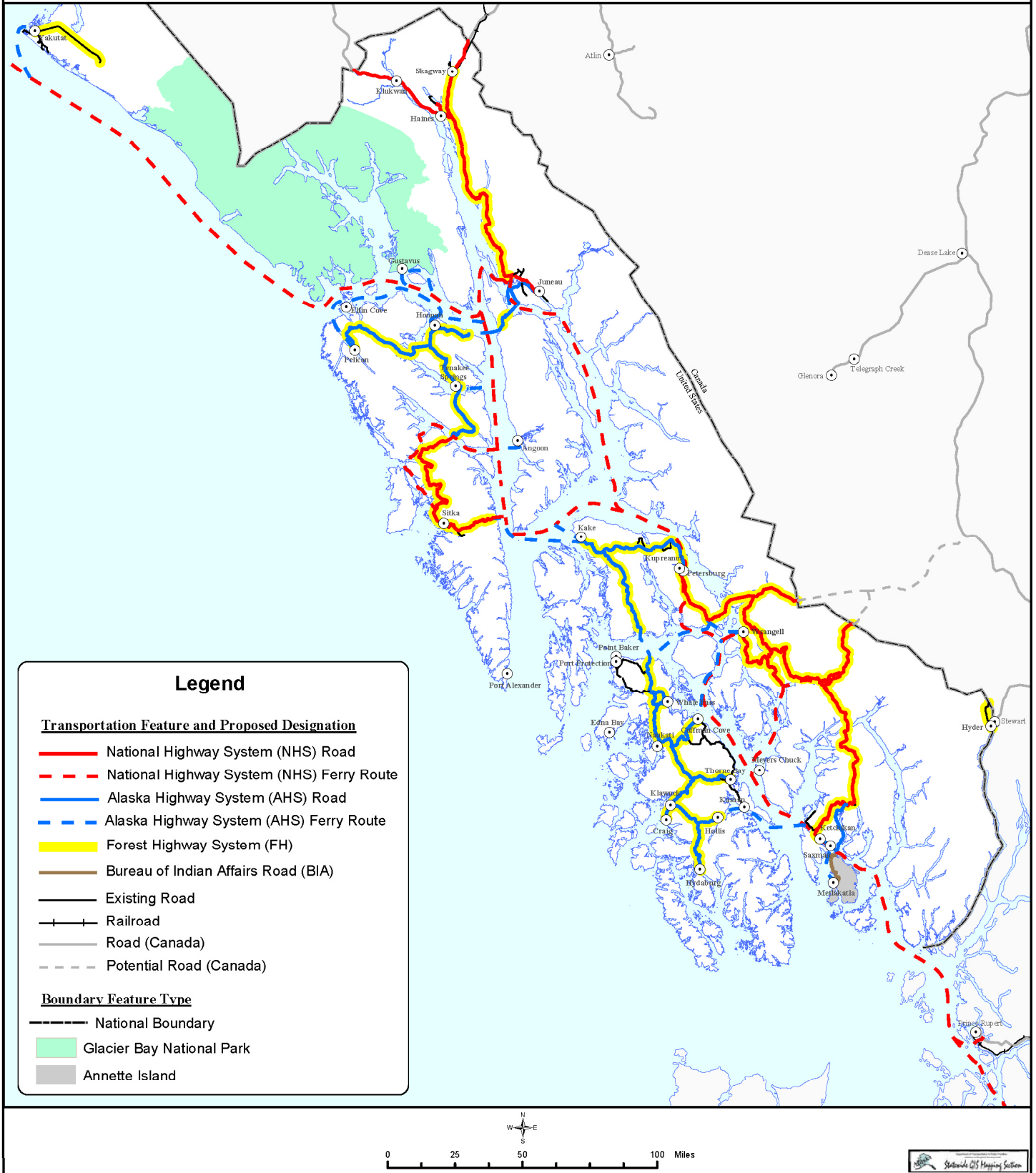


## Map 2 Southeast Alaska 20 Year Transportation Plan





# Map 3 Ultimate Regional Highway Development Plan





## **PREFACE**

---

The Alaska Department of Transportation and Public Facilities (the “department” or “ADOT&PF” hereafter), as the agency responsible for state highways, ferries, airports, and ports and harbors, undertakes regional planning efforts to ensure that future transportation investments are in the public interest. Since statehood, there have been several plans for Southeast Alaska. The previous Southeast Alaska Transportation Plan (SATP) was adopted in 1999 and amended by “Addendum One” in February 2001. This 2004 update is comprehensive in its applicability and replaces the 1999 SATP. The SATP is revised to include new highway components in pursuit of greater mobility and efficiency, while continuing the emphasis of lowering costs to the traveler and the state. The SATP is an approved component of the Alaska Statewide Transportation Plan.

Substantial public interest and response resulted from circulation of the Draft Plan Update. This final report has been rewritten to better present the revised SATP. Nineteen public meetings were held around the region, and hundreds of individuals participated by attending meetings, providing comments, or both. The consultant team inventoried more than 1,000 comments that were then reviewed and evaluated by team members and ADOT&PF planners.

In response, department planners substantially revised how key elements are presented and described. The basic recommendations of the draft remain intact, but are now described in a more organized and systematic manner. These revisions improve readability, and make it easier to understand the underlying basis for plan recommendations and conclusions. Public involvement and comment during the review process has led to a much better final product. ADOT&PF appreciates that reviewers took the time and effort to offer their thoughts and comments concerning the state’s active involvement in providing transportation to the region.





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## **ABBREVIATIONS**

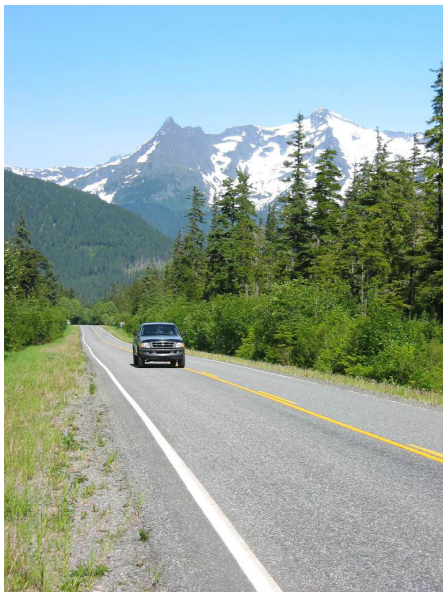
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ADOT&PF	Alaska Department of Transportation and Public Facilities
AEPTF	Alaska Energy Policy Task Force
AHS	Alaska Highway System
AMHS	Alaska Marine Highway System
EA	environmental assessment
EAS	Essential Air Service
EIS	environmental impact statement
FFY	Federal Fiscal Year
FH	Forest Highway
FHWA	Federal Highway Administration
FVF	Fast vehicle ferry
IFA	Inter-Island Ferry Authority
ITS	Intelligent Transportation Systems
LCP	least-cost planning
mph	miles per hour
NEPA	National Environmental Policy Act
NHS	National Highway System
PFSR	Public Forest Service Road
SATP	Southeast Alaska Transportation Plan
SEATrails	Southeast Alaska Trail System
SEI	Southeast Intertie
STIP	Statewide Transportation Improvement Program



## I. INTRODUCTION

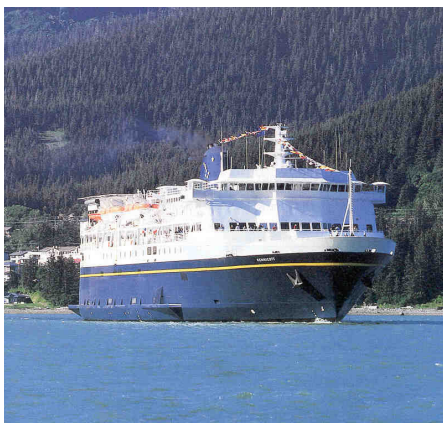
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Southeast Alaska is at a crossroads in terms of surface transportation. There is general agreement that upgrading these transportation capabilities is critical to the region and to the state as a whole. Although general agreement is in place, proceeding to select and pursue the next generation of improvements is proving contentious. Coming to terms with the absence of land highway connections is especially difficult. Accomplishing upgrades will be challenging because of large fiscal requirements and the lack of regional consensus concerning key proposed improvements.



The past half century has seen substantial progress in linking Alaska's panhandle (Map 1, preceding the Executive Summary) with other parts of Alaska and the "Lower 48," in spite of challenging topography and difficult climatic conditions. The largest communities now enjoy daily jet service, in the northbound and southbound directions, for passengers and freight. Each summer the cruise ship industry brings more than 600,000 visitors to each of three major ports of call. The private sector carries most freight to the region, with the presence of two regional operations ensuring competition at most ports served by barge. Rounding out this picture is the Alaska Marine Highway System (AMHS) and the Inter-Island Ferry Authority (IFA). In combination, these public operations provide roll-on/roll-off highway links between communities and the continental highway system by operating ferries that carry vehicles and passengers on the waterways of the Inside Passage.



The Southeast Alaska Transportation Plan (SATP) provides answers concerning what needs to happen next, and lays out ways to boost mobility within the region. The objective is to shift from the limitations of long-distance ferry service to a robust network of surface transportation connections, which would consist of road links and connecting ferries,



supplemented by long-distance ferries. Through a balanced investment program, it is possible to improve the regional transportation system and its capabilities, and to continue progress toward establishment of an integrated network of land highway connections, ferry routes, and airports.

## **II. PLAN FOCUS AND RELATIONSHIPS**

---

The SATP is one of a series of regionwide, multi-modal transportation plans that are components of the Alaska Statewide Transportation Plan. Each component identifies improvement needs, provides general direction for development of the area transportation system, and recommends specific improvements. The SATP provides a framework for state involvement in the regional transportation system over the next 20 years.



The SATP focuses on regional transportation improvements that increase system efficiency and increase mobility for both Alaskans and visitors traveling through Southeast Alaska. It focuses on construction of new highways and construction of new ferries to replace an aged ferry fleet. Replacement of old ferryboats with roads and more efficient ferryboats is critical to reducing the cost of transportation services provided by the state and reducing cost to the user. Highways are more efficient

and provide much greater mobility to the user. Reducing the length of ferry connections, providing more frequent ferry service at convenient hours, and providing direct point-to-point shuttle ferry connections will improve overall system efficiency and service. Although proposed changes will increase reliance on ground transit services, the SATP proposes to continue provision of some long-haul mainline ferry connections through the region to Bellingham, Washington, and Prince Rupert, British Columbia, and across the Gulf of Alaska. Reducing reliance on ferries will reduce state transportation operating expense and increase user capacity to travel more frequently at less cost.

The SATP sets overall direction for future decisions regarding transportation investments and operating decisions. It is a “dynamic” plan in the sense that new information and potential opportunities are assessed and, when appropriate, incorporated into the planning framework. On the other hand, the SATP framework is not aimed at details, and does not pre-determine those decisions that are best made by operating managers. For example, it does not discuss the specifics of the many decisions that need to be made

concerning ferry schedules or itineraries. It rarely touches upon concerns or improvements that would be considered local in nature.

The SATP was prepared under the direction of the Alaska Department of Transportation and Public Facilities (the “department” or “ADOT&PF” hereafter). Continued progress toward making transportation work better in Southeast Alaska could not have been accomplished without contributions from others. These partners include communities; tribal organizations; the Bureau of Indian Affairs (U.S. Department of the Interior); IFA, which pioneered the “dayboat” concept; and the Forest Service (U.S. Department of Agriculture). Federal agencies that work as partners with state and local governments in funding transportation improvements include the Federal Highway Administration (FHWA), Federal Aviation Administration, Federal Transit Administration, Forest Service, and U.S. Army Corps of Engineers.

The SATP takes an important step toward the pursuit of large capital investments by the state, but many follow-up steps are necessary for the development of major projects. These steps include opportunities for public involvement and comment. The next major steps are identification of specific projects in the Statewide Transportation Improvement Program (STIP) and the subsequent funding of individual projects. For many additions, the SATP uses the term elements to identify the overall highway, ferry, or aviation component or services that need to become part of the regional transportation system. To accomplish each addition requires at least one project, and potentially a series of individual projects, in the STIP. Most projects in the STIP accomplish the construction of a new or improved highway or the building (or refurbishment) of a ferry or terminal. At a minimum, each project has design and construction phases, with a multi-year schedule (for all but the simplest projects) before construction is funded and under way.



An important feature of STIP projects is the environmental assessment (EA) phase. For most projects, the first milestone after initial funding is environmental approval. This milestone is reached when the concept on which the project is based has been adequately reviewed and refined. Other government agencies participate in the environmental review, as do members of the public if the project is of concern. In relation to the SATP, the environmental



phase provides a more rigorous test of the workability of a plan element and its component projects. In some cases, the environmental phase results in major revisions to the initial concept. These revisions have the potential to be substantial enough to require change to specific features of the SATP.

Thus, the SATP provides the initial, detailed look at the feasibility of a proposed component or service that needs to become part of the regional transportation system. This review is much less comprehensive than the environmental phase. The primary thrust of the SATP review is to verify the effectiveness of a new component or service in terms of its transportation capabilities. Although other concerns, such as impacts to the natural environment, are noted, it is during the environmental phase that the determination of the appropriate balance between improved transportation capabilities, impacts, and other concerns is made.

Major plan elements have already entered the environmental phase, and the completion of the update process means that two large projects also need to advance to the environmental phase. Furthermore, two follow-on studies need to be completed. The following list includes the two studies and projects in the environmental phase for which either an environmental impact statement (EIS) or an EA is being completed or soon to be started:

- Northern Panhandle Transportation Study
- Southeast Aviation System Plan Study
- Gravina Island Access EIS
- Juneau Access EIS
- Juneau International Airport EIS
- Ketchikan Airport Runway Safety Area EA
- Ketchikan Access EIS
- Mid-Region Access EIS
- Petersburg Airport Runway Safety Area EA
- South Mitkof Terminal EA
- Sitka Access EIS
- Sitka Airport Runway Safety Area EIS
- Wrangell Airport Runway Safety Area EA

It is important to note that the SATP is not intended to substitute for systemwide planning on the part of AMHS. A separate effort is required for this purpose. Changes to AMHS service are critical to the region, and are

included in this plan. The addition of new vessels to the Southeast transportation network has already benefited the overall system, and has made the *Aurora* available for redeployment. Additional changes need to be pursued, and system-level planning can integrate recommendations from several area plans into the operations of AMHS as a whole. Completion of the 2004 SATP update is an indicator that pursuit of a system-level planning effort for AMHS is needed.

Similarly, the SATP is not the appropriate forum for mode-specific planning concerning the future of the regional aviation system. With some exceptions,<sup>1</sup> the key components of this system are already in place. Although projects are needed and will be scheduled, these improvements will enhance and expand capabilities that are already available. For the most part, the startup of air services is constrained by the ability of the private sector to make a profit from new services, not a lack of government-provided infrastructure. Investment in the aviation infrastructure will come in response to future carrier decisions concerning equipment, service, and networks.

State regulations require review and update of the Alaska Statewide Transportation Plan and its components, including the SATP, every five years. Consequently, this SATP update will need to be reviewed, and as necessary, updated in 2009, or earlier if circumstances warrant.

---

<sup>1</sup> In terms of airport facilities, the most notable exception is Angoon. The community is served by a seaplane base, but it does not have an airfield. Selection of the preferred site for an airport is now complete.

## III. SETTING

---

### Southeast Economy

Government services, forest products, fishing, mining, and tourism dominate the economy of Southeast Alaska. Employment in these areas continues; however, forest products industries have declined drastically, and government services, tied to oil revenue, are under budgetary pressure. The commercial fishery is under stress as well. A declining job market and lower per capita personal income has resulted in a net out-migration of regional population during the past decade. Demand for transportation is down and has in some markets shifted to cheaper modes of transportation because residents can no longer afford to travel as frequently by air. A brief summary of the region's principal resources and demographics related to transportation demand is presented below.

The primary land manager in Southeast Alaska is the Forest Service. The Tongass National Forest is the nation's largest national forest, encompassing 17 million acres, most of Southeast Alaska. The Forest Service manages the Tongass consistent with the policy and guidance provided by the Tongass Land Management Plan, which the agency maintains and updates periodically.

### Principal Resources and Industries

#### Scenery and Wildlife

Southwest Alaska offers an unparalleled combination of spectacular scenery, misty vistas, majestic mountains, tidewater glaciers, abundant fish and wildlife, vivid Native cultures, fascinating history, and colorful residents. The region has one of the richest and most varied systems of trails, roads, highways, waterways, and scenery in the world. In 2002, the federal government designated Alaska's Marine Highway as a National Scenic Byway, recognizing that these routes have exceptional recreational, cultural, historical, scenic, and natural qualities. In addition, the state designated the Haines Highway as an Alaska Scenic

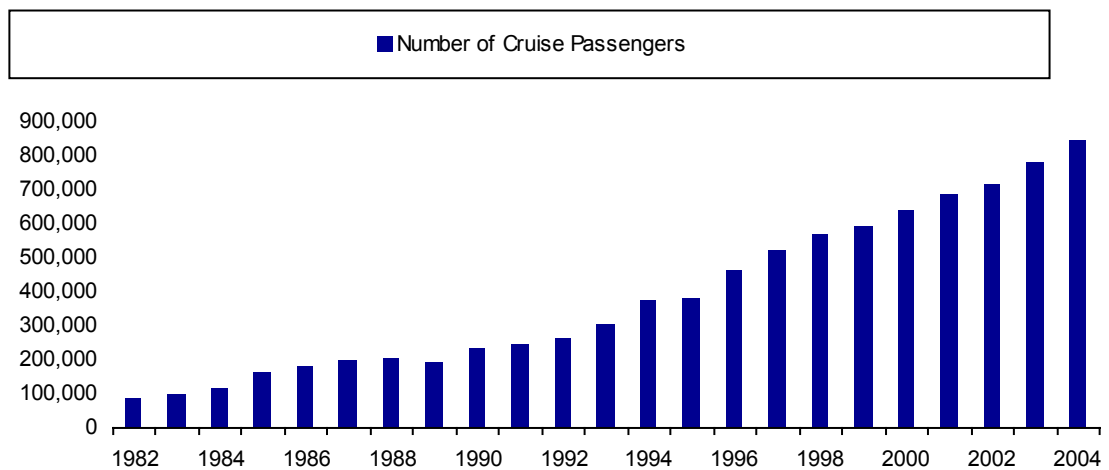


Byway, because of spectacular wildlife viewing along the route, as well as scenic, historical, and recreational qualities.

The visitor industry in Southeast Alaska is robust and active. As measured by passenger counts, large cruise ships dominate the industry. Figure 1 shows the upward trend in cruise passengers visiting Southeast Alaska. Visitor counts at each of the three major ports of call exceed 600,000 annually. Most of these visitors spend the day in port, with the ship departing for another port the same evening. During 2004, itineraries are about evenly split between round-trips through Southeast Alaska and visitors passing through on their way to or from ports in Railbelt Alaska. Smaller cruise operators offer more personalized options, including embarkations within the region and stops at more remote locations. Map 4 shows the routes traveled most frequently by cruise ships.

**Figure 1. Southeast Alaska Cruise Traffic, 1982–2004**

Source: McDowell Group



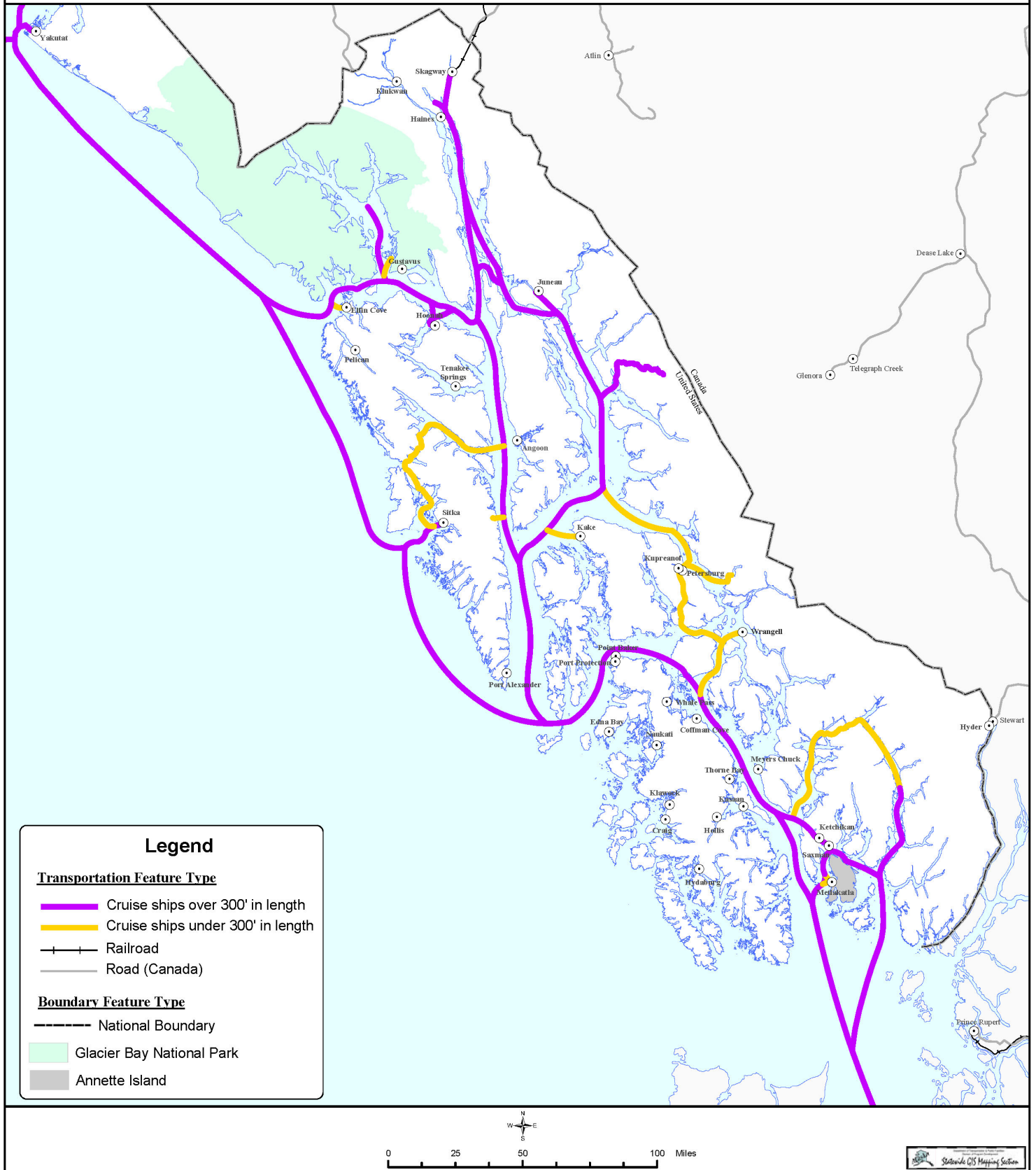
In addition to cruise visitors, many people choose to travel on their own to the region, arriving by air, ferry, and highway. Independent travelers are critical to local economies, especially in smaller communities. Recent years have seen steady growth in visits to sport fishing lodges, some of which can be reached only by seaplane or boat. Current emphasis on the Southeast Alaska Trail System (SEATrails) initiative is highlighting the region’s long-distance recreational corridor available to travelers.

**Timber**

The lower elevations of Southeast Alaska are blanketed with extensive forests, where the temperate, wet climate fosters the growth of large, valuable trees. The forest products industry has played an essential



# Map 4 Most Frequented Cruise Ship Routes

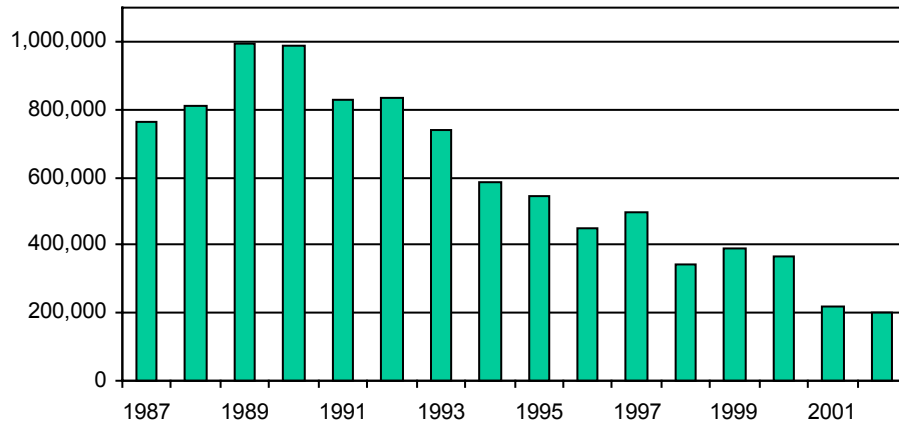


economic role for more than 50 years, accounting for as much as one-third of the region’s overall economy. By statehood, the timber industry was growing rapidly. In the 1970s, employment in timber harvesting and production reached nearly 4,500 jobs. In 1974, the annual harvest from the Tongass National Forest peaked at 600 million board feet. Within the last 15 years, however, the region has lost thousands of jobs and millions of dollars in accompanying activities; wood processing plants have closed in Sitka, Haines, Ketchikan, Metlakatla, and Wrangell. Changes in the global marketplace, combined with new federal legislation, crippled the harvest effort. The Alaska Pulp Corporation ended its Sitka operations in 1993 and Wrangell operations in 1994. These closures were followed by the cessation of Ketchikan Pulp Corporation operations in 1997, 1998, and 1999. Figure 2 shows the total Southeast Alaska timber harvest from 1987 to 2002.

**Figure 2. Total Southeast Alaska Timber Harvest, 1987-2002**

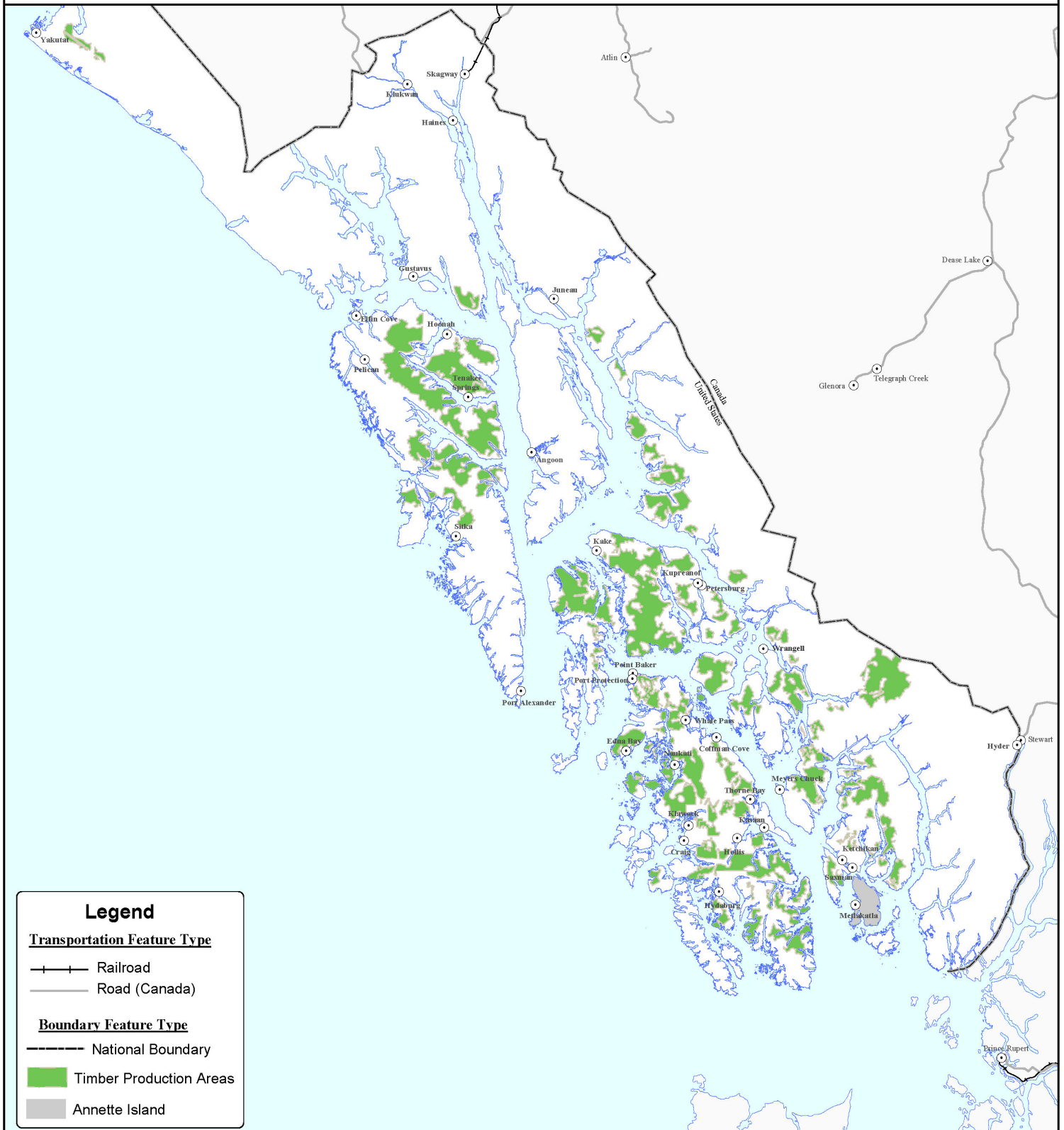
**Federal, state, and private harvest in thousands of board feet**

Source: McDowell Group



The timber industry has been a primary economic engine for many of the region’s communities. With year-round, high-paying jobs, the industry increased the standard of living and assembled an infrastructure that made growth possible in other industries such as tourism. The current decline affects transportation costs, along with many other public and private services. The future outlook remains uncertain. One opportunity is the conversion of lower grade logs into veneer. This material can be used to make a variety of building products, including veneer lumber and plywood. Test results show that the region’s hemlock and spruce peel well and offer attributes not available from other domestic sources. Map 5 identifies the areas managed as timber production areas in the Tongass National Forest.

# Map 5 Tongass National Forest Timber Production Areas



**Legend**

**Transportation Feature Type**

- +—+— Railroad
- Road (Canada)

**Boundary Feature Type**

- National Boundary
- Timber Production Areas
- Annette Island



## Minerals

Published mineral availability and activity maps clearly indicate that Southeast Alaska is endowed with a variety of mineral deposits and other commodities. Consequently, the mining industry in Southeast Alaska is in relatively good condition and generates a substantial amount of employment. One large mine is operating – the Greens Creek mine on Admiralty Island (near Juneau). Recently issued permits will allow this mine to continue production for another 20 years. The mine produces concentrates containing silver, zinc, gold, and lead, and is one of the nation’s leading producers of silver. Also in the Juneau vicinity, the Kensington gold mine is close to obtaining final permits to begin operation.

Favorable market forecasts and recent price increases for base metals and platinum group metals should stimulate further interest in prospects. However, federal land withdrawals prevent exploration and development of several areas with high mineral potential. Near Ketchikan, exploration for platinum is under way. Demand for transportation service to support mining is expected to increase. Map 6 shows the locations of Southeast Alaska’s mineral resources.

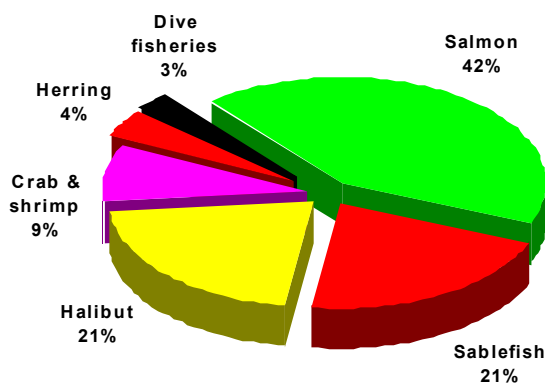
## Fisheries

Important fisheries in Southeast Alaska include salmon, halibut, black cod, herring, crab (king, Tanner, and Dungeness), shrimp, oysters and other shellfish, geoducks, and sea urchins. Figure 3 shows the comparative value of fishery harvests in 2003. According to the McDowell Group, preliminary figures for 2003 show total value of \$121 million.

All five salmon species are abundant, but the fishing industry has been negatively affected by competition from farmed salmon. Figure 4 charts the

**Figure 3. Major Southeast Alaska Fishery Harvests in 2003**

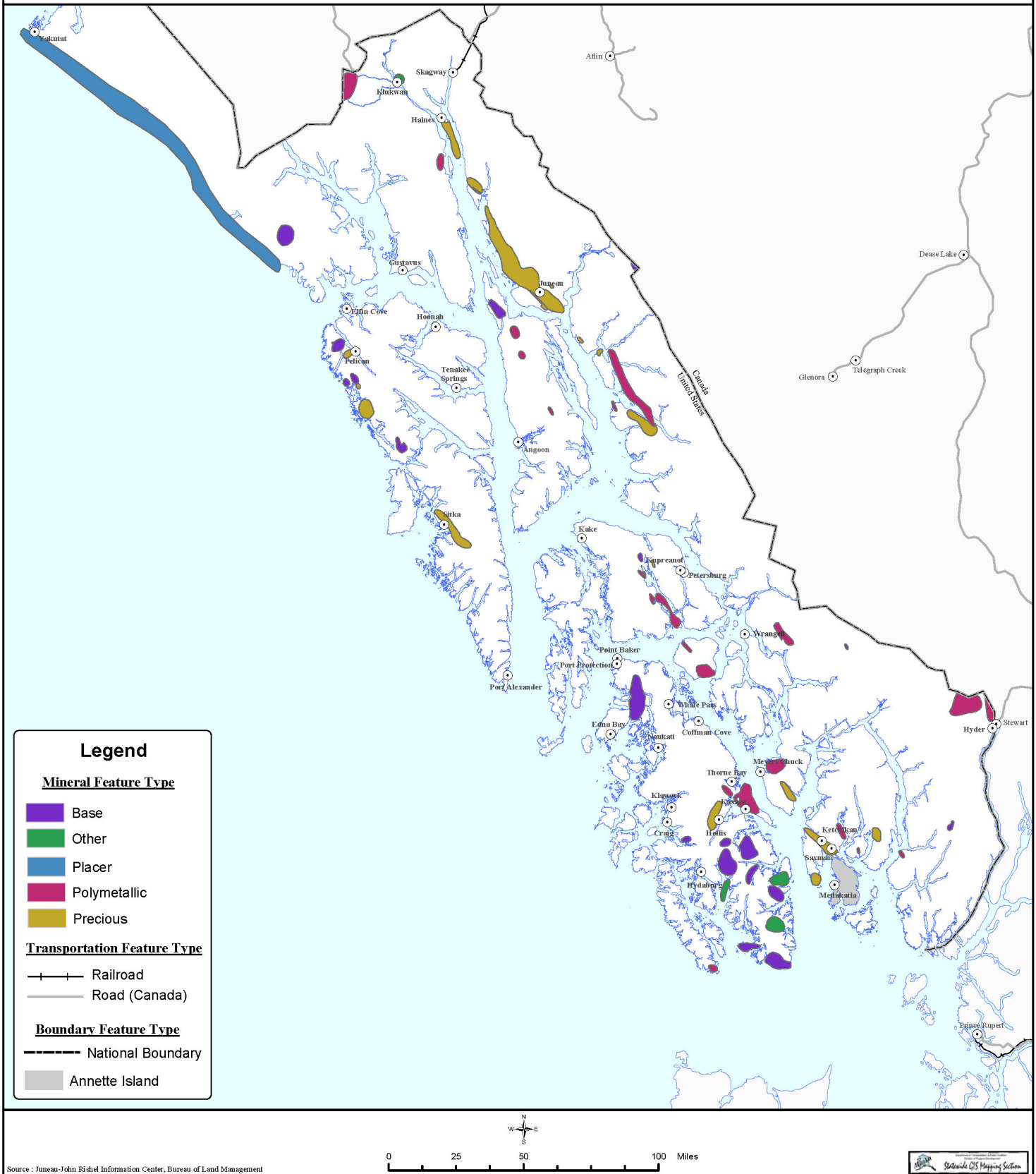
Source: McDowell Group



value of Southeast Alaska salmon harvests from 1994 through 2003. Continued increases in farmed salmon production have driven down the price for wild salmon, which has caused severe problems for processors in Southeast Alaska and, in turn, the fishing fleet that supplies them. The bottom-line impact on Alaskan fishermen has been volatile and often low prices for the fish that they catch. The market for canned salmon is declining, but demand for processed and market-packaged fish products that consumers can pop in microwave ovens is increasing.



# Map 6 Mineral Resources



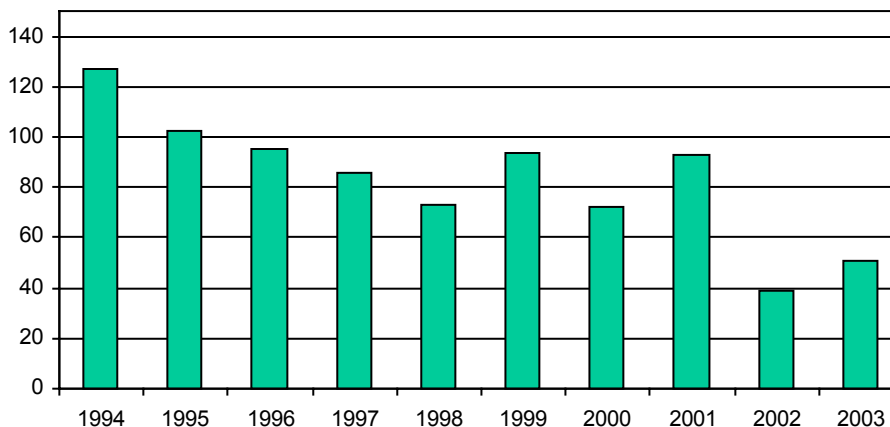


Combined, these factors are likely to lead to a decline in the size of the fishing fleet. The market for fresh fish has potential to increase, however, and the availability of more efficient means of transporting fresh fish is expected to lead to greater volumes of this product.

**Figure 4. Value of Southeast Alaska Salmon Harvests, 1994-2003**

Shown in millions of dollars, ex-vessel

Source: McDowell Group



## Hydroelectric Resources and Delivery of Electricity

The mountainous terrain of Southeast Alaska coupled with a wet, maritime climate provides significant opportunities for hydroelectric generation. However, mountainous terrain intersected by extensive waterways limits the development of roads and other infrastructure, including transmission lines, that are needed to connect the communities within the region.

Hydroelectric power plants and diesel generators provide nearly all of the electric power generation in Southeast Alaska. Natural gas and coal, the primary fuel sources for electric generation in the Railbelt areas of the state, are not commercially available in Southeast. There are many opportunities for further hydroelectric development. A recent report prepared by the Alaska Energy Policy Task Force (AEPTF) called *NonRailbelt Report, Findings and Recommendations* (April 15, 2004), identifies the potential new hydroelectric projects listed in Table 1.

**Table 1. Potential New Hydroelectric Projects in Southeast Alaska**

Location	Community/ Utility	Annual Energy Generation Capacity (kilowatts)	Estimated Capital Capability (megawatt- hours)	Cost (\$ millions)
<b>Upper Lynn Canal Region</b>				
Kasidaya Creek <sup>1</sup>	Haines-Skagway/AP&T	3,000	12,000	7.0
Connelly Lake	Haines-Skagway/AP&T	5,000	30,000	14.0
<b>North Region</b>				
Lake Dorothy - Ph. 1 <sup>1</sup>	Juneau/AEL&P	15,000	75,000	
Lake Dorothy - Ph. 2	Juneau/AEL&P	32,000	94,000	
Gartina Falls	Hoonah	600	1,900	3.8
Water Supply Creek	Hoonah	600	1,800	3.1
Falls Creek <sup>1</sup>	Gustavus/GEC	800	2,500	4.1
<b>West Central Region</b>				
Takatz Lake	Sitka	20,000	82,800	82.0
Katlian River	Sitka	7,000	29,800	70.5
Thayer Creek	Angoon	1,000	8,500	
<b>Tyee-Swan Region</b>				
Thomas Bay (Swan Lake)	Petersburg	40,000	164,400	193.0
Lake Tyee 3rd Turbine	Petersburg – Wrangell	10,000	1,000	
Sunrise Lake	Wrangell	4,000	12,200	
Anita - Kunk Lake	Wrangell	8,000	28,200	
Virginia Lake	Wrangell	12,000	42,700	
Thoms Lake	Wrangell	7,300	25,600	
Whitman Lake	Ketchikan/KPU	4,600	19,640	7.6
Connell Lake	Ketchikan/KPU	1,900	11,640	5.5
Mahoney Lake	Ketchikan/KEC	9,600	45,600	
Triangle Lake	Metlakatla/MP&L	3,900	16,885	12.9
<b>Prince of Wales Region</b>				
South Fork <sup>1</sup>	Craig-Klawock/AP&T	2,000	7,000	3.5
Lake Mellon/Reynolds Creek	Craig-Klawock/AP&T	10,000		

<sup>1</sup> These projects are under active development and all are expected to be on line by 2008.

According to the AEPTF report (page 28), the total amount of electricity sold in the region was 743,296 megawatt-hours. This electricity is generated by existing hydroelectric and diesel facilities. Most smaller communities rely on very expensive diesel power generation. Except for transmission lines connecting several Prince of Wales Island communities, the Lake Tye to Wrangell and Petersburg transmission line, and a submarine cable connecting Haines and Skagway, the communities within Southeast Alaska are not currently interconnected.

A study for creating an intertie to connect the communities was completed in 1997. The results of the study served as the basis for passage of a bill by the U.S. Congress authorizing the Southeast Intertie (SEI) project and including federal funding participation. A follow-up engineering and economic analysis of the intertie was completed in 2003. The three transmission segments described below are currently under varying stages of development.

**1. Swan Lake - Lake Tye Segment.** Development of this segment, which began several years ago, is now poised for completion. All necessary permits are in hand; all but 1 mile of the 57-mile right-of-way between the Swan Lake and Tye Lake hydroelectric plants has been cleared; the structure sites have been surveyed and sampled; and final engineering design is nearly complete. The surplus power from Lake Tye will be used to offset diesel generation in Ketchikan and allow more efficient use of existing generation facilities.

**2. Juneau - Greens Creek Mine - Hoonah Segment.** The 63.5-mile Juneau - Greens Creek Mine - Hoonah segment is coupled with the private development of the \$35 million, 15-megawatt Lake Dorothy Hydroelectric project. The first 11 miles of the segment, from the Douglas Bridge to North Douglas Island, have been completed by Alaska Electric Light & Power. Hydroelectric energy delivered across the Juneau - Greens Creek Mine - Hoonah net will completely replace diesel-generated energy in Hoonah and at the Greens Creek Mine, saving a combined total of 5.4 million gallons of fuel annually.

**3. Petersburg - Kake Segment.** The project for this segment would construct 46 to 59 miles of transmission line (depending on the route selected) to connect Petersburg with Kake. Completion of this segment would allow the use of surplus electricity from the Lake Tye hydroelectric project to offset diesel generation in Kake. An additional benefit would be the ability to serve the Woewodski Island Mine project that is currently under exploration. The estimated cost of this project is \$23.1 million if the shortest and most direct route is selected. Most of the line would parallel existing logging roads in the region. The Petersburg - Kake segment will be designed for eventual interconnection west to Sitka. Eventual interconnection from Sitka to the Juneau - Hoonah segment is also planned.

Routes for transmission lines between the communities of Southeast Alaska have been identified based on previous studies. These routes combine lengthy submarine cables with overhead transmission lines, generally through undeveloped areas. For the most part, the routes are included as identified power system corridors in the Tongass National Forest Land Management Plan. The costs to construct and develop each of these lines at current cost levels have been estimated and are summarized in Table 2.

**Table 2. Intertie Component Costs and Lengths**

Intertie Component	Location	Estimated Cost (\$ millions)	Line Length (miles)		
			Submarine Cable	Overhead	Total
SEI-1	Juneau – Greens Creek – Hoonah	37.1	34.5	18.7	53.2
SEI-2	Kake – Petersburg	23.1	1.7	49.9	51.6
SEI-3	Metlakatla – Ketchikan	6.0	1.0	16.0	17.0
SEI-4	Ketchikan – Prince of Wales	31.7	17.2	18.0	35.2
SEI-5	Kake – Sitka	50.3	35.0	24.0	59.0
SEI-6	Hawk Inlet – Angoon – Sitka	81.2	82.0	22.0	104.0
	Less: SEI-6 costs common to SEI-5	(9.5)		(20.0)	(20.0)
SEI-7	Hoonah – Gustavus	26.4	29.0	1.0	30.0
SEI-8	Juneau – Haines	69.8	2.8	82.5	85.3
<b>Total system</b>		<b>316.0</b>	<b>203.2</b>	<b>212.1</b>	<b>415.3</b>

It should be noted that significant alternative configurations and route options exist for SEI-2, SEI-4, SEI-6 and SEI-8 that would change the estimated length and cost of these lines. The various alternatives will need to be evaluated more thoroughly in the future as development of these lines proceeds. Depending on the timing of construction of the SEI segments, estimated costs will need to reflect the estimated impact of inflation.

The total estimated cost of the system is \$316.0 million. Of this amount, approximately \$7.0 million is for inclusion of fiber optic systems in both the submarine and overhead portions of the transmission lines.

The AEPTF report forecasts growth in Southeast Alaska electric loads of approximately 1 percent per year. Some communities are expected to see slightly higher rates of growth in the next few years because of expanded economic activity in their areas. Energy demand may increase significantly in some areas to support new mining operations. The planned additions of new small hydroelectric facilities and the relatively slow growth expected in electrical loads reduce the near-term benefits that could be realized by

constructing some of the mainline electrical connections between certain communities.

An evaluation of the costs and benefits of the SEI segments was prepared to determine when the savings in production expenses for diesel energy generation would exceed the costs of purchasing and delivering power over the SEI system. The results of this analysis indicate when new SEI segments would be considered “economically justifiable.” The recommended timing of the new SEI segments, determined by the evaluation, are provided in Table 3. The primary hydropower sites are shown in Figure 5.

**Table 3. Recommended Timing of Southeast Intertie Segments**

<b>Intertie Component</b>	<b>Location</b>	<b>Projected On-Line Year</b>
SEI-1	Juneau – Greens Creek – Hoonah	2007
SEI-2	Kake – Petersburg	2007
SEI-3	Metlakatla – Ketchikan	2015-2020
SEI-4	Ketchikan – Prince of Wales	2020-2025
SEI-5	Kake – Sitka	2025-2030
SEI-6	Hawk Inlet – Angoon – Sitka	2020-2025
SEI-7	Hoonah – Gustavus	After 2030
SEI-8	Juneau – Haines	After 2030

## **Essential Transportation and Utility Corridors**

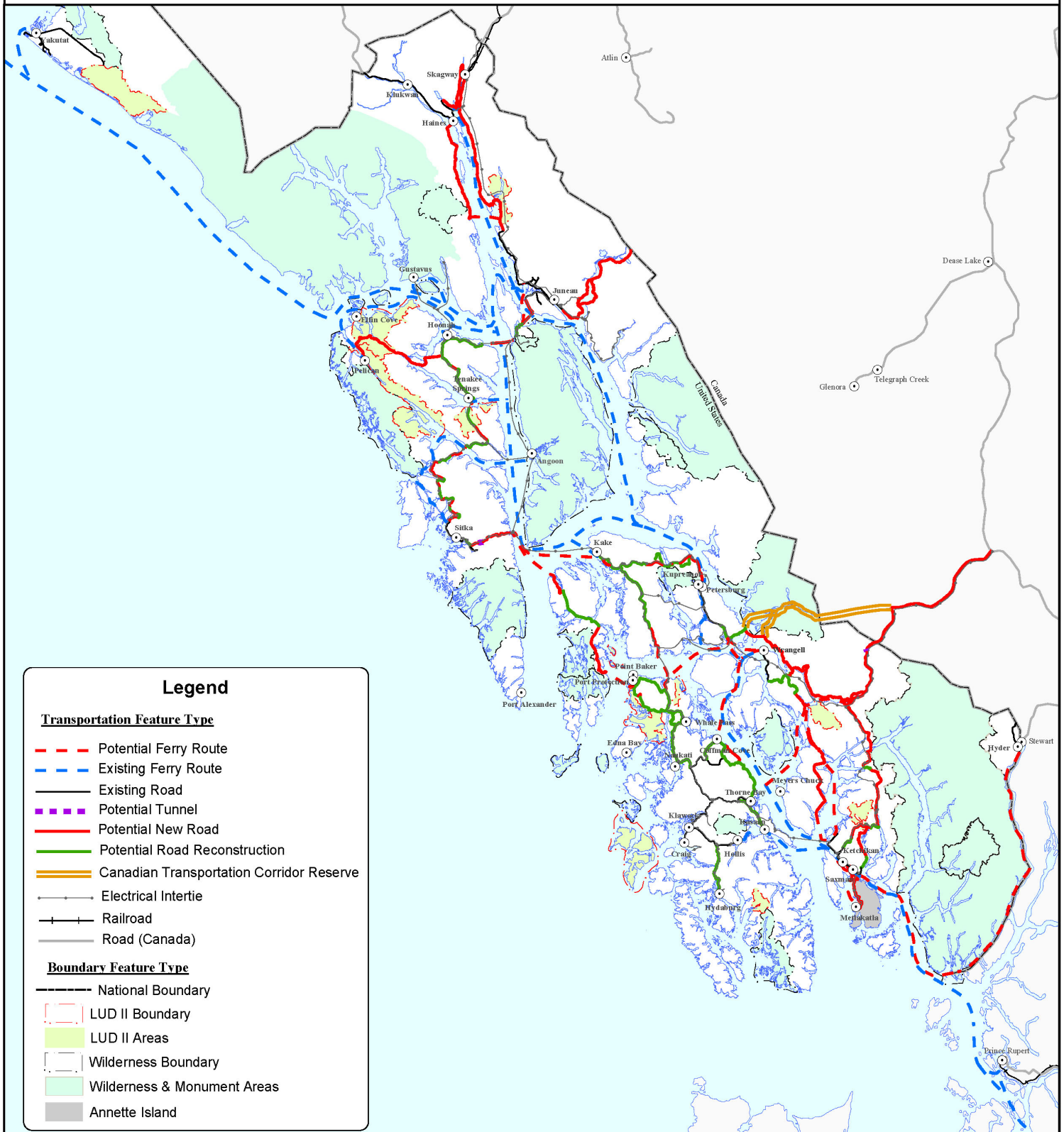
In a region as rugged as Southeast Alaska, valleys and mountain passes represent invaluable corridors for highways and utility transmission lines. Map 7 identifies the transportation and utility corridors considered essential for the state to preserve for potential development.

These corridors are required to connect communities to the regional transportation system and to establish a regional power grid. The state requests that the Forest Service incorporate all of these transportation and utility corridors into the Tongass Land Management Plan and reserve and protect these corridors for these purposes. Adoption of this plan is an official expression of state policy that no other action by any other party should be taken (such as designations of wilderness areas) that would interfere with public use of any of the mapped corridors. (See Appendix A for more detail). In addition, the state requests that the Forest Service contribute to state efforts by improving and connecting forest roads that are located within essential road corridors identified by the state.



# Map 7

## Essential State Land and Marine Transportation & Utility Corridors



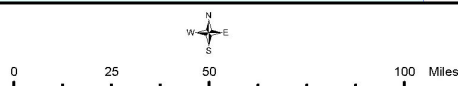
**Legend**

**Transportation Feature Type**

- - - Potential Ferry Route
- - - Existing Ferry Route
- Existing Road
- - - Potential Tunnel
- Potential New Road
- Potential Road Reconstruction
- Canadian Transportation Corridor Reserve
- Electrical Intertie
- Railroad
- Road (Canada)

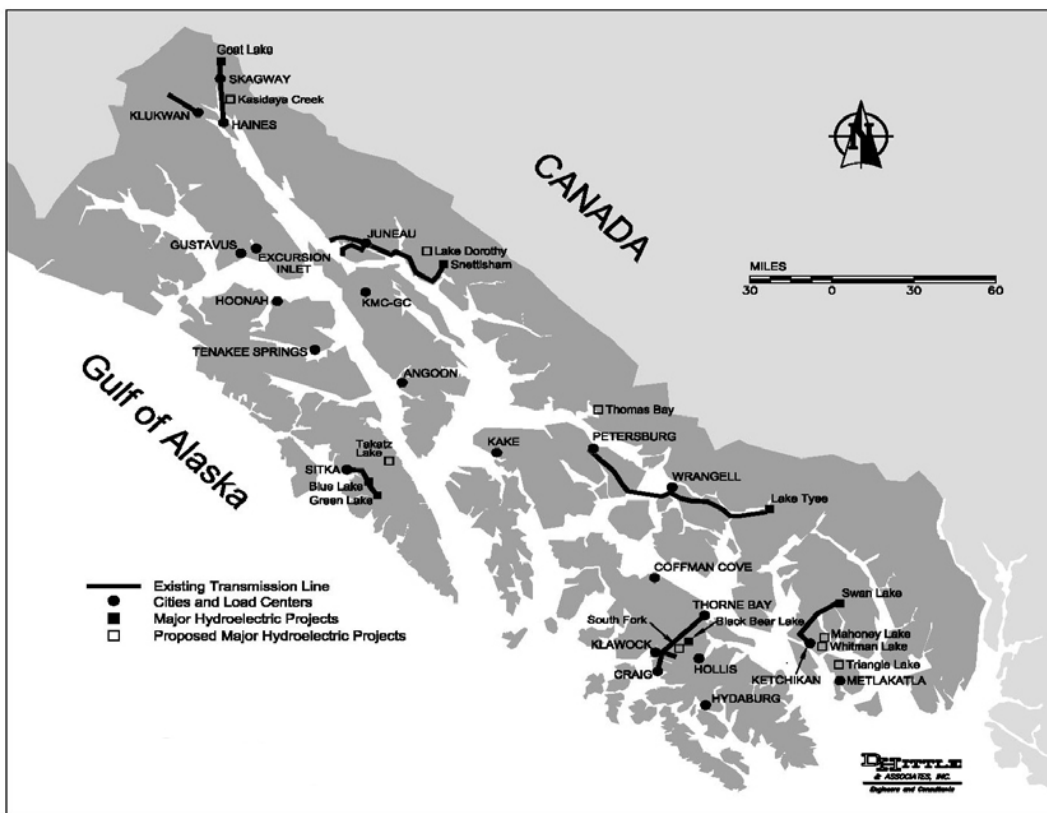
**Boundary Feature Type**

- National Boundary
- - - LUD II Boundary
- LUD II Areas
- - - Wilderness Boundary
- Wilderness & Monument Areas
- Annette Island



**Figure 5. Southeast Alaska Hydropower Sites**

Source: *NonRailbelt Report: Findings and Recommendations*, Alaska Energy Policy Task Force, April 15, 2004

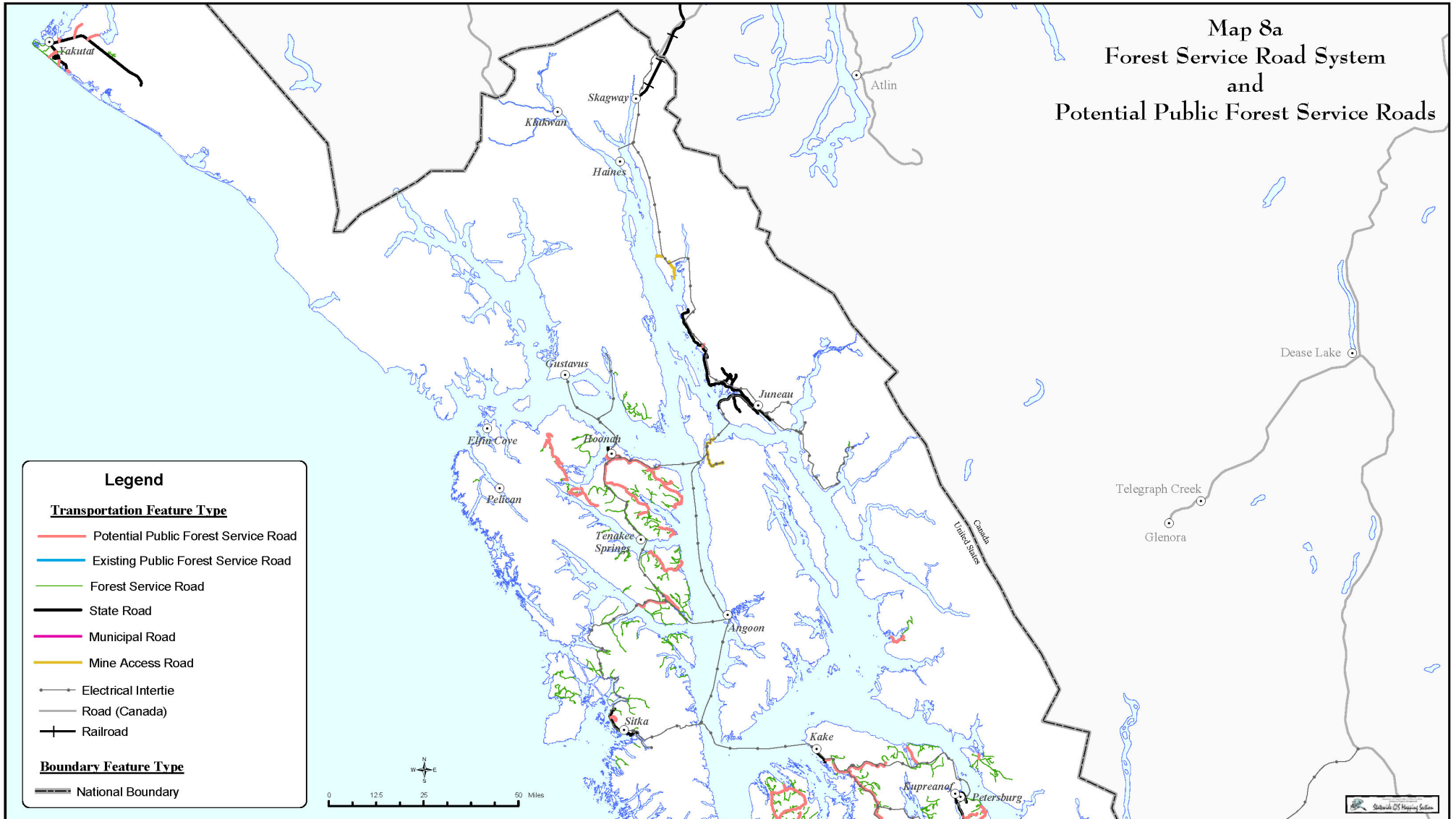


**Forest Service as a Transportation Partner**

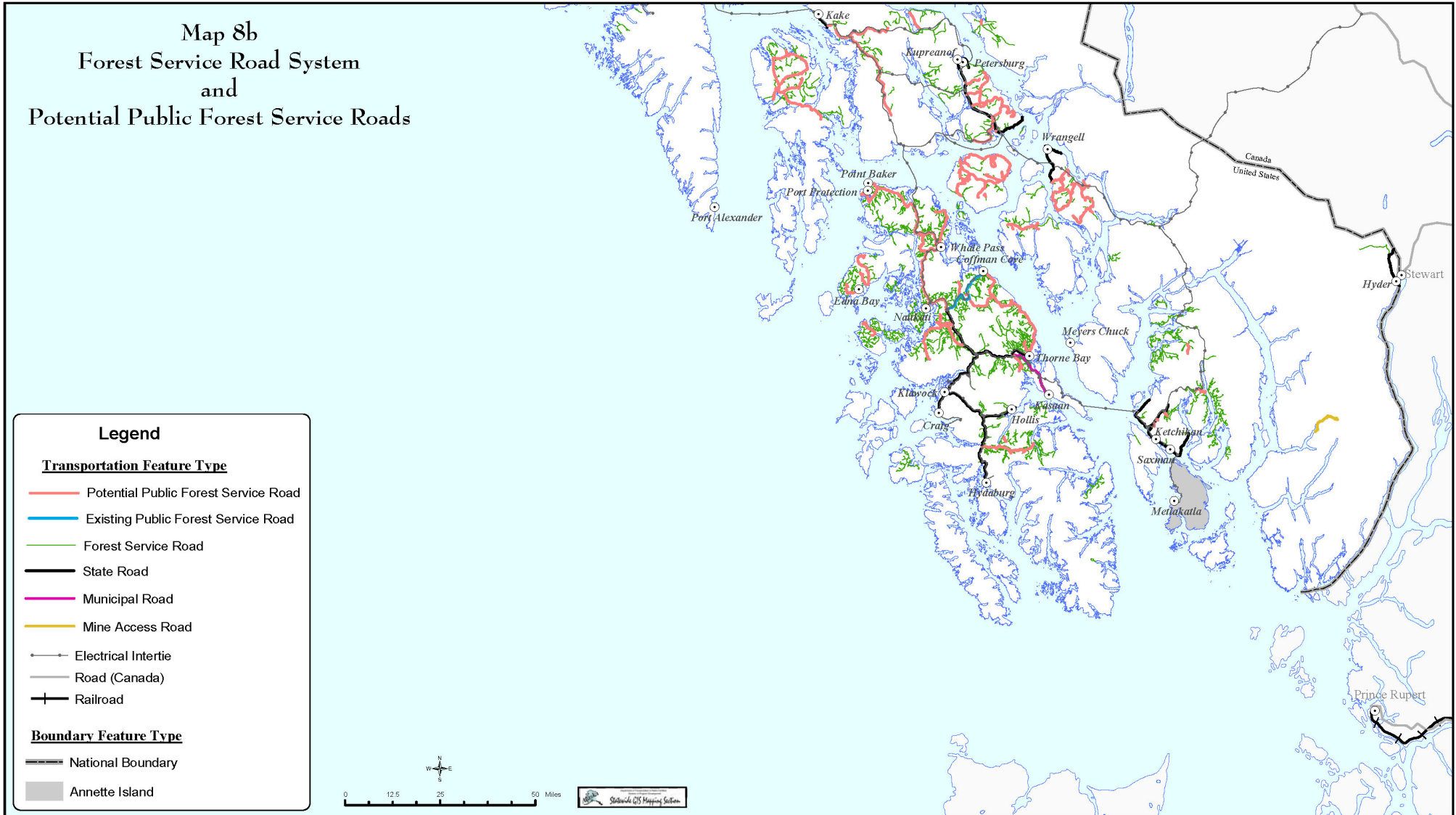
Forest roads play a vital role in management and protection of the Tongass National Forest. The Forest Service manages about 3,600 miles of classified Forest Service roads in the Tongass National Forest. Roughly a third of these roads are mainline logging roads suitable for passenger-carrying vehicles such as cars or buses. Another third are suitable only for high clearance vehicles like pickups and logging trucks. The remaining roads are not open to travel at this time.

These roads provide vital access to most natural resources, along with basic access to recreational, timber, and mineral resources in Southeast Alaska. Several communities depend on Forest Service roads to reach the regional transportation system. Many communities use these roads for access to the forest for subsistence food gathering, hunting, fishing, recreation, and other activities.

Maps 8a and 8b show the Forest Service roads. One-third of the mainline logging roads are on isolated road systems only accessible by boat or barge



### Map 8b Forest Service Road System and Potential Public Forest Service Roads



and serve as higher-speed haul routes for timber sale access. Two-thirds of the mainline logging roads are connected to communities, providing access to the National Forest and connections between several communities.

The Forest Service used authorities included in the 1998 Reauthorization Act to assume public road roles for a key Forest Service road on Prince of Wales Island, the Coffman Cove Road. The Forest Service has proposed authorization of a Public Forest Service Road (PFSR) program that would enable the Forest Service to improve existing mainline forest resource roads and connect and extend them in support of the SATP.

A PFSR program in Alaska would allow rural communities to enjoy the benefits of a basic transportation infrastructure for the movement of people and goods between communities and would improve access to National Forest lands. Also, this improved road system would facilitate more recreation and tourism (and related employment and income) when it is connected with the expanded facilities and service that will soon be provided by the IFA.

Forest Service roads that serve isolated communities in Alaska are not built to state highway standards. Some small unincorporated communities lack the resources and financial capability to assume maintenance responsibility for roads, especially for long segments that are expensive to maintain. The Forest Service has responded by continuing operation and maintenance responsibilities, excluding snow plowing, for Forest Service roads that provide community access.

The proposed PFSR roads are shown on Maps 8a and 8b. The Forest Service recommends that, as funding becomes available, most of these roads be reconstructed to public road standards. Map 7 identifies the transportation and utility corridors considered essential to the state in ultimately connecting Southeast Alaska communities to the regional highway system and electrical power grid. (See Appendix A for additional detail.) As noted above, the state requests that the Forest Service reserve and protect these corridors to address both current and future transportation and utility needs. The state also requests that the Forest Service recognize state transportation corridors and support improving and connecting National Forest road segments within these essential road corridors as state priorities for development.

## **Demographics**

After years of relative prosperity, communities are experiencing hard times and a collapse in income levels because of declining fish and forest products industries. Under these conditions, residents can no longer afford to pay premium prices for trips to and from their community of residence by air and ferry. In most parts of the country, affordable ways to make long-



distance trips are available. These opportunities need to be extended to Southeast Alaska.

Table 4 shows that per capita income in Southeast communities has declined since 1980. Because of lower incomes compared to other communities in the United States, residents of Southeast Alaska are less able to afford travel. The declining income demonstrates the critical importance of lowering transportation costs to residents of the region. Figure 6 charts decreasing population in Southeast Alaska, a trend attributed to declining resource industries.

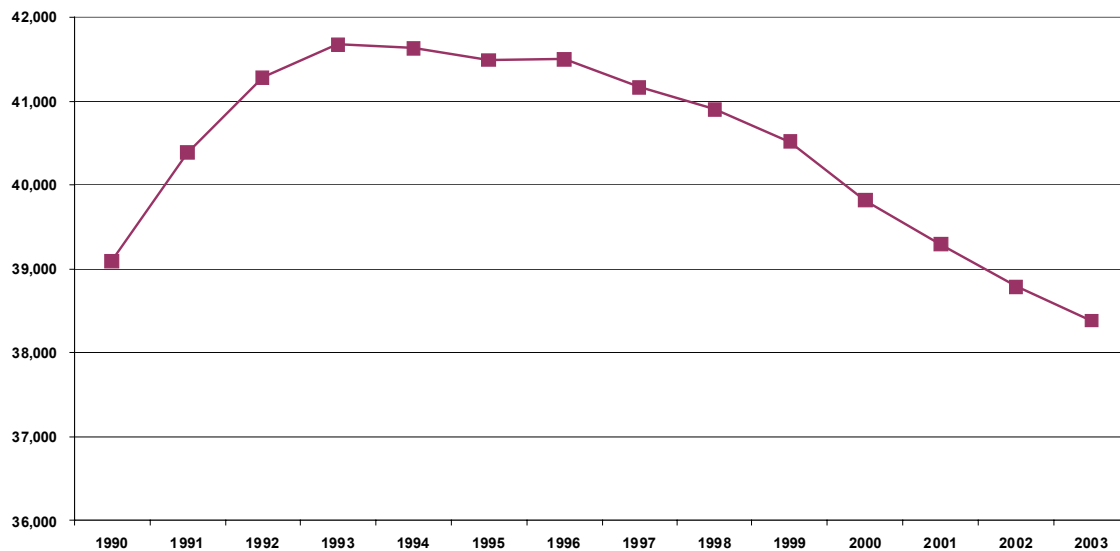
**Table 4. Per Capita Income Trends**

Community	Percent of U.S. Average		
	1980	1990	2001
Ketchikan	161	144	112
Juneau	188	136	113
Sitka	142	116	98
Prince of Wales Island/Outer Ketchikan Census Area	116	95	66
Wrangell/Petersburg	143	123	95
Haines	129	136	108

Prepared by the McDowell Group based on data from the U.S. Department of Commerce, Bureau of Economic Analysis

**Figure 6. Southeast Alaska Population without Juneau, 1990-2003**

Source: McDowell Group





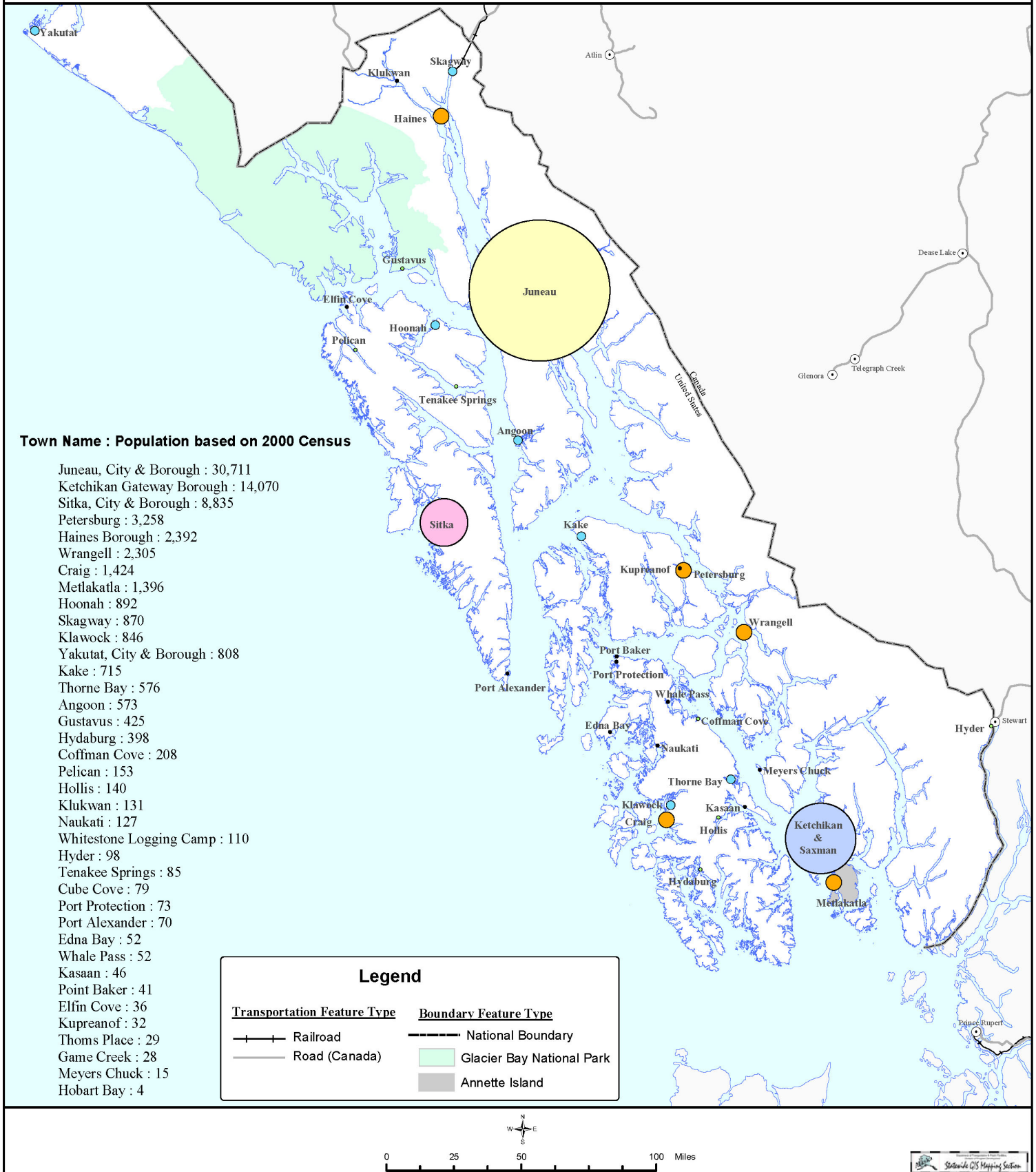
## **Existing Transportation System**

The geography of Southeast Alaska affects mobility within and through the region. The area consists of isolated communities on the mainland, mountains to the north and east, major islands separated by multiple fjords, and water bodies throughout. From the northwest corner of the study area at Yakutat Bay to the southernmost point (Cape Muzon on Dall Island), the region is about 450 miles in length. Map 9 shows the population centers in the region.

Residents of the region are dependent on air and water transportation, rather than roads or rail, for travel between communities. This travel is characterized by long-distance movements, low traffic volumes, limited transportation modal choices, and wide seasonal variations in the level of travel demand. The regional transportation system incorporates the following components:

- Roadway networks within the various communities and on Prince of Wales Island. The only connections to the continental highway system are at Haines, Skagway, and Hyder.
- AMHS operates a fleet of 10 vessels, with 8 serving 14 ports in Southeast Alaska. In addition, AMHS sailings provide through service to two southern gateways (Bellingham, Washington, and Prince Rupert, British Columbia) and four northern gateways (Skagway, Haines, Whittier, and Valdez).
- IFA operates the *M/V Prince of Wales* from Hollis on Prince of Wales Island to Ketchikan and has funding to add a second vessel operating from Coffman Cove on Prince of Wales Island to Wrangell and Petersburg.
- Private ferry services that are primarily for passengers and generally connected to sightseeing and tourism, although at least one effort has also provided vehicle passage.
- Cruise ship activity in the summer months, on a fleet exceeding 20 large vessels and dozens of smaller vessels that brings significant numbers of visitors to the region. On many days each summer, the number of visitors and crewmembers visiting several small communities by cruise ship exceeds the local population.
- An airport system composed of 12 airports and 33 public seaplane floats, which are served by jet carriers such as Alaska Air, cargo airlines, and many air taxi operators.

# Map 9 A Proportionate Depiction of Regional Population Centers



In general, ferry services are operated by the state through AMHS, which is an “essential part of the Alaska transportation system.”<sup>1</sup> IFA, and potentially other authorities, can play an important role in operating specific services.



AMHS provides access for commerce, education, medical care, and a wide variety of personal and commercial travel purposes. By bridging gaps in the highway system, AMHS plays a vital role in moving truck trailers (vans), which contain fresh and frozen fish, groceries and produce, and many items necessary for the viability of the communities served. AMHS is the primary means of moving personal vehicles into and out of communities in Southeast Alaska, and is the only way to take a vehicle from Southeast to either Interior Alaska or the Lower 48 without driving through Canada.

## Recent Trends in Traffic Demand

Between communities in Southeast Alaska, the choice of travel mode has not changed appreciably in 25 years, except for extensions of the road network on Prince of Wales Island. This lack of change results in extensive use of air and ferry options.

Table 5<sup>2</sup> shows reported travel by air and ferry for Southeast communities. At most locations, passengers have a choice of traveling by air or ferry and the resulting choices vary by community. Air traffic has declined in the past few years in most communities, as it has throughout the state. See Figure 7. Travelers have cited higher fares to outlying communities as one factor; another factor is economic decline in key industries and a corresponding drop in local populations.

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<sup>1</sup> Source: Alaska Statute, Title 19, Chapter 65, Section 50 (a) (1).

<sup>2</sup> Carrier reports are the source used to generate the totals in Table 5, which shows the level of long-distance travel to and from each community. Reporting practices differ by mode, and not all carriers report. Table 5 is accurate in terms of comparing relative magnitudes, but most counts would be adjusted if reporting were standardized. The graphs in Figures 7 and 8 that follow are also based on these reports, with some graphs including cruise ship passenger counts from the McDowell Group.

**Table 5. Comparison of Air and Ferry Passengers, 1998-2002**

Community	Calendar Year 1998		Calendar Year 1999		Calendar Year 2000		Calendar Year 2001		Calendar Year 2002	
	Air <sup>1</sup>	Ferry	Air <sup>1</sup>	Ferry	Air <sup>1</sup>	Ferry	Air <sup>1</sup>	Ferry	Air <sup>1</sup>	Ferry <sup>2</sup>
Angoon	6,642	7,437	5,730	8,431	6,018	8,027	6,548	7,290	4,118	8,386
Gustavus	22,654	-	23,140	-	29,552	-	29,304	-	14,406	-
Haines	48,682	78,068	22,120	81,383	21,310	78,939	19,304	68,095	11,694	75,036
Hoonah	20,874	11,428	18,252	13,008	20,966	11,834	19,020	11,099	12,708	11,438
Juneau	766,236	142,550	755,118	160,227	787,810	149,602	804,234	126,547	706,002	143,550
Kake	10,654	3,133	6,932	3,849	7,508	3,987	6,696	4,112	4,212	4,617
Ketchikan	283,806	97,294	258,364	106,894	224,420	97,406	205,268	88,614	199,256	117,689
Ketchikan Harbor	73,166	-	68,882	-	92,384	-	76,154	-	86,892	-
Metlakatla	31,538	12,308	30,774	14,197	20,054	12,780	20,052	10,250	17,386	17,450
Pelican	2,254	1,472	2,044	1,486	2,020	1,163	1,780	1,384	1,836	1,411
Petersburg	38,770	21,925	35,910	24,510	37,996	22,040	36,584	21,547	33,688	21,917
Prince of Wales Island (Total)	30,032	41,663	29,048	43,516	30,978	39,806	27,960	37,424	19,530	52,137
Clark Bay Seaplane Facility	-	-	-	-	6,824	-	6,328	-	4,890	-
Coffman Cove Seaplane Float	2,486	-	1,410	-	514	-	338	-	272	-
Craig Seaplane Facility	10,784	-	11,796	-	12,804	-	7,934	-	7,810	-
Hydaburg Seaplane Float	1,494	-	378	-	72	-	264	-	96	-
Kassan Seaplane Float	1,844	-	910	-	518	-	-	-	-	-
Klawock Airport	-	-	7,800	-	4,936	-	6,820	-	1,712	-
Thorne Bay Seaplane Float	13,424	-	6,754	-	5,310	-	6,276	-	4,750	-
Sitka	134,842	32,601	136,924	31,004	136,004	26,401	145,824	27,300	140,190	27,260
Skagway	61,836	70,174	22,042	70,930	46,004	68,506	20,336	56,611	12,578	63,360
Tenakee Springs	1,030	2,401	2,144	2,537	2,718	2,363	2,548	2,274	1,892	2,552
Wrangell	28,554	14,976	27,810	16,440	26,118	14,989	20,462	14,415	18,434	15,739
Yakutat	28,608	53	29,404	120	30,716	134	29,530	168	23,406	138
<b>Regional Totals</b>	<b>1,590,178</b>	<b>537,483</b>	<b>1,474,638</b>	<b>578,532</b>	<b>1,522,576</b>	<b>537,977</b>	<b>1,471,604</b>	<b>477,130</b>	<b>1,308,228</b>	<b>562,680</b>

<sup>1</sup> Estimate based on traffic data reported to ADOT&PF and Federal Aviation Administration.

<sup>2</sup> 2002 ferry traffic for Hollis and Ketchikan includes IFA traffic, in addition to AMHS traffic.

Source: ADOT&PF

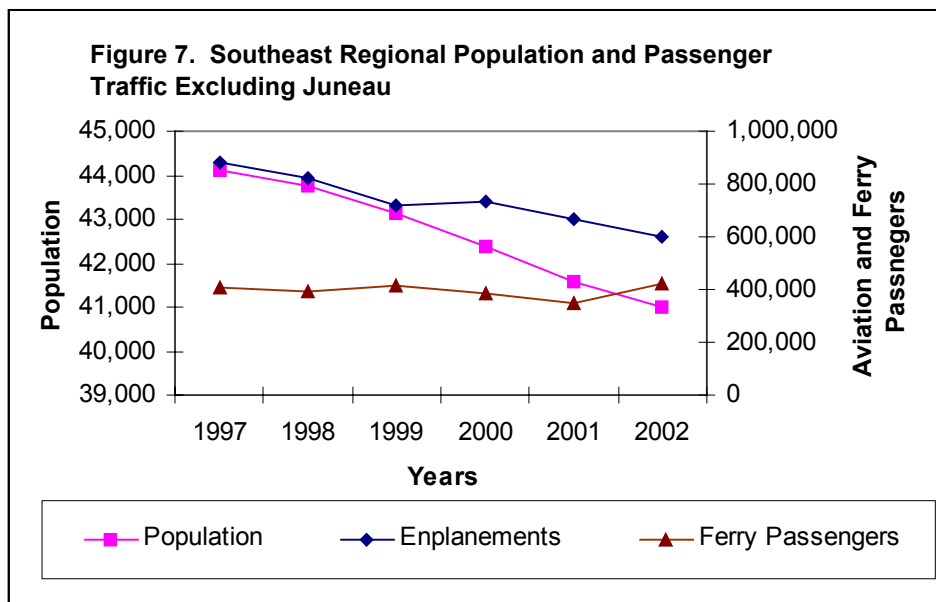


Figure 8 presents community graphs depicting travel activity. There are major differences in the level of activity, and the scale is adjusted accordingly. Six communities are regular ports of call for large cruise ships, and these totals are included in the graphs for these communities.

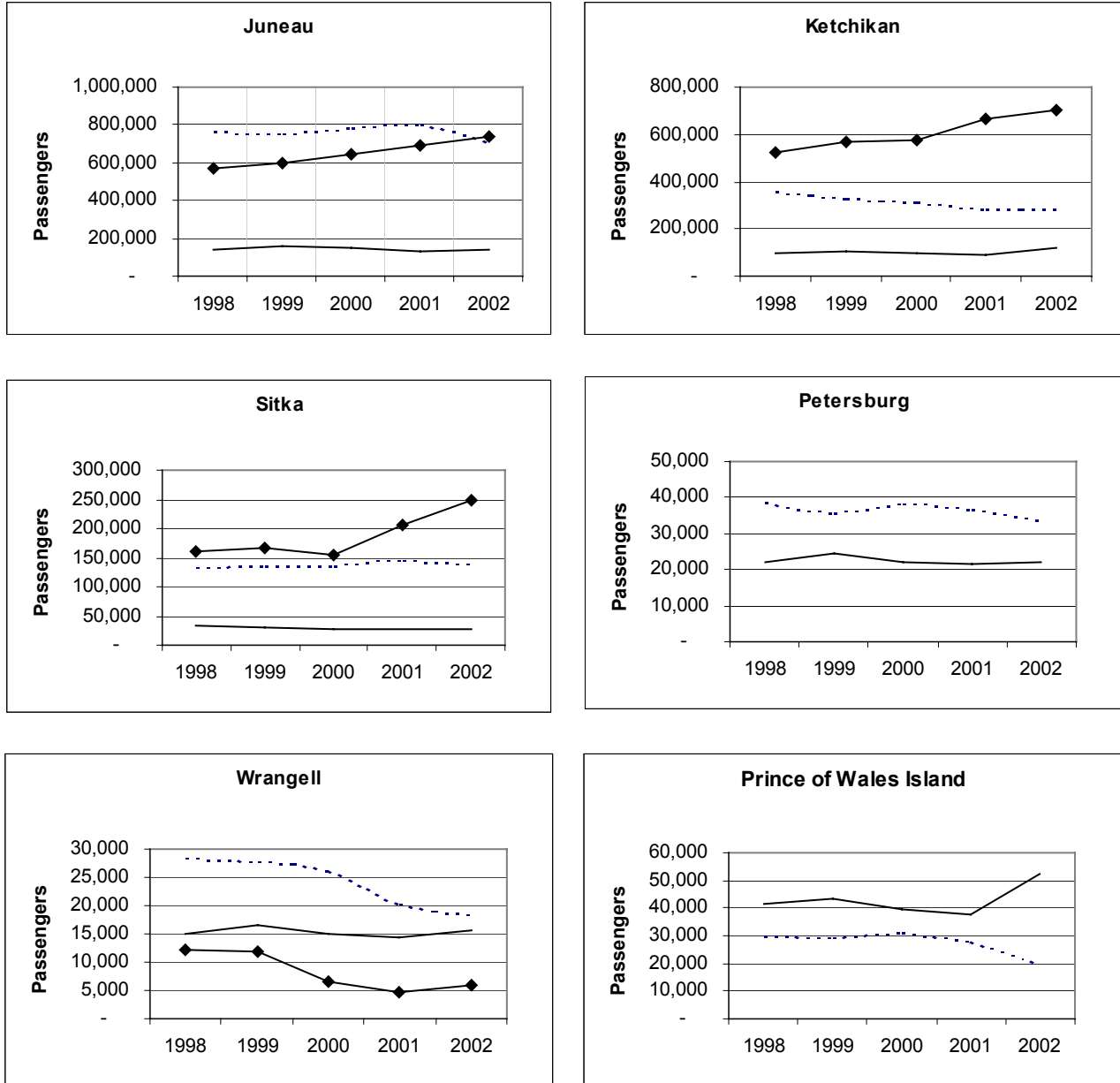
Twenty years ago, the majority of tourists destined for Southeast Alaska arrived on the marine highway system; a smaller proportion arrived by air. Although tourists still constitute a large proportion of AMHS passengers, many tourists now arrive by cruise ship (almost 50 percent of tourists). Airline service to and within Southeast Alaska has improved dramatically since the mid-1960s; about one-third of visitors now arrive by air. Tourist demand for ferry use remains heavy during the summer months. However, overall ridership has remained “flat” during the past ten years. In some portions of the ferry system, tourist ridership has declined because of improvements in private-sector alternatives such as air travel and cruise ships, which have been able to expand capacity and service to meet the increased demand.

AMHS has been pulled in opposing directions because of such a large component of tourism activity. AMHS plays an essential role in the transportation system by providing steady and stable service to Southeast communities while enhancing the visitor industry through a dependable pattern of service. The imperative to serve Alaskan communities and regional needs, the original basis for creation of the ferry system, remains important. Serving the tourism industry also offers clear benefits. Tapping the market potential of the visitor industry has proven to provide a significant revenue source for the system. However, caution must be exercised in increasing fleet capacity to service a highly seasonal tourist traffic demand if the additional capacity cannot be effectively utilized or

**Figure 8. Air, Cruise, and Ferry Passengers in Southeast Communities, 1998–2002**

--- Air Passengers      ◆—◆ Cruise Passengers      — Ferry Passengers

*Air passenger* totals are estimated to be twice the number of enplaned passengers that are reported to the Federal Aviation Administration. Because the number of passengers arriving and departing at an airport are assumed to be equal over the long term, doubling the enplaned passengers yields a number that can be compared directly to the sum of embarking and disembarking ferry passengers. The air passenger total is considered to be conservative because the number of enplaned passengers is known to be under-reported in many cases. *Cruise passengers* are the total passengers reported by ports (data provided by McDowell Group). *Ferry passenger* totals are the sum of passengers embarking and disembarking at a port.

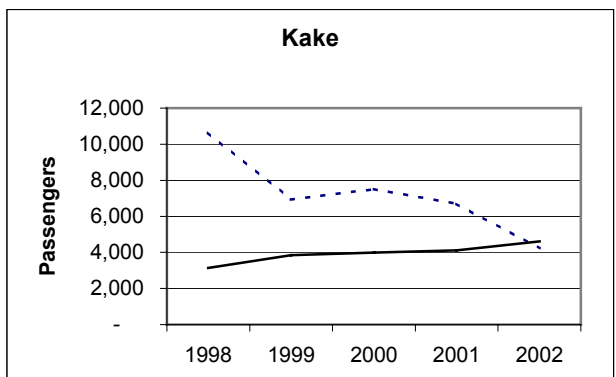
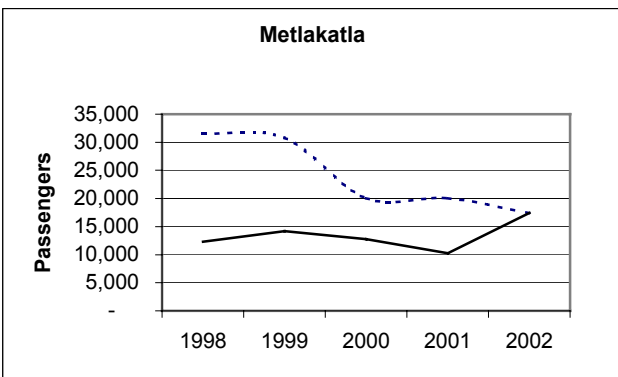
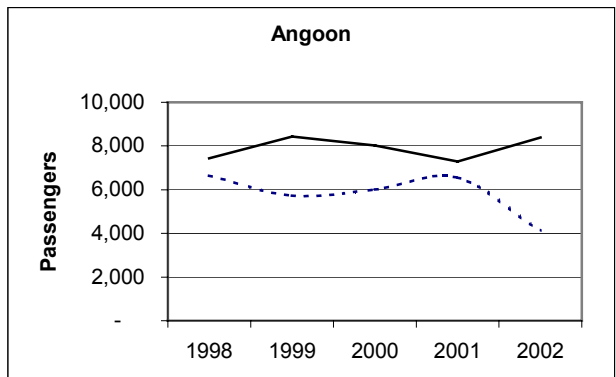
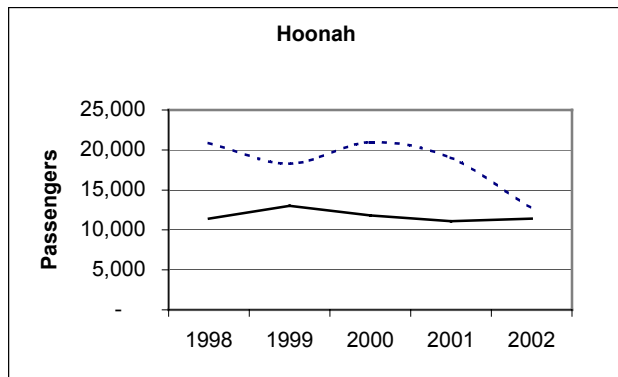
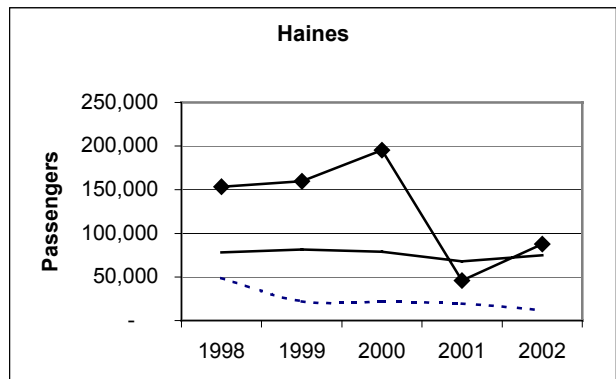
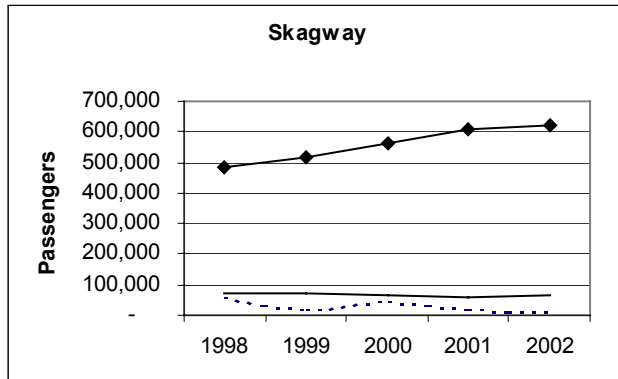




**Figure 8. Air, Cruise, and Ferry Passengers in Southeast Communities, 1998–2002 (continued)**

----- Air Passengers      ◆—◆ Cruise Passengers      — Ferry Passengers

*Air passenger* totals are estimated to be twice the number of enplaned passengers that are reported to the Federal Aviation Administration. Because the number of passengers arriving and departing at an airport are assumed to be equal over the long term, doubling the enplaned passengers yields a number that can be compared directly to the sum of embarking and disembarking ferry passengers. The air passenger total is considered to be conservative because the number of enplaned passengers is known to be under-reported in many cases. *Cruise passengers* are the total passengers reported by ports (data provided by McDowell Group). *Ferry passenger* totals are the sum of passengers embarking and disembarking at a port.



economically removed from service during the off season. Removing large vessels from service during the off season can prove costly. The cruise ship and airline industry redeploy their fleets to markets outside the region and state during the off-season, an option AMHS does not have.

## IV. SHAPING THE PLAN

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The planning process poses a basic question – are the previous efforts achieving the desired improvements in regional transportation capabilities? In particular, are travelers more mobile in terms of their ability to make a trip at a time of their choosing? Are there impediments to trip completion, such as lack of capacity? Can travelers reach their destination point at the desired time with a minimum of delay and inconvenience? Are there changes in the cost to the traveler? Do state facilities and services needed for regional travel operate in a safe and cost-effective manner?

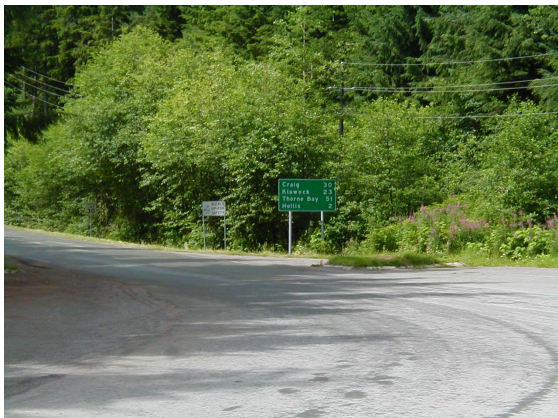
In providing regional transportation, the existing capabilities of the aviation system are profoundly different from the existing capabilities of the surface network of highways and ferries. In terms of the current activities of air carriers, aviation facilities are mostly in place and provide adequate support for scheduled operators, cargo shippers, flightseeing, and itinerant movements. On the other hand, the surface network is in its infancy in terms of matching the operating range of those who drive.

Alaska has a developing economy and only a rudimentary highway system. There is unmet transportation demand for travel through the region and between the region and the continental highway system that could be addressed by extension of the regional highway system. This plan seeks those opportunities where highway construction will boost mobility in the region and establish more efficient community access. Where these links can be added, they will establish the prerogative of individual choice in the making of travel plans while lowering costs to both the traveler and the travel provider.

Along these lines, the planning team examined new approaches to improving regional transportation links in the context of the following mission statement:

### **SATP Mission Statement**

*To increase system capacity and improve efficiency, shift from a surface network that is based on long-distance ferry runs to a surface network that relies on land highways to connect communities and other destinations. Land highways will dramatically expand activity and mobility by increasing traveler flexibility, choice, and speed while reducing or eliminating toll costs.*



In allocating resources, a distinction is made between critical basic transportation service and supplemental or alternative transportation service. If alternative transportation (provided by routes, services, or both) is available or can be provided, the need to continue (or the need to provide supplemental service) should be evaluated to identify cumulative benefits and costs to the transportation system and its users. The ideal transportation solution is one that provides equal service to each community at

the same cost to both the user and the government for each user served. Implementation of the ideal solution is challenged, however, by differences in demand and by isolation from the primary routes between the population centers that generate the largest amount of traffic. Consequently, in the interest of overall system users, compromises must be made.

Transportation service routing and scheduling decisions should be based on maximizing the overall system user benefits, versus benefiting a few users at the expense of the majority of the users. Decisions should be made to promote the most free and unrestricted movement of the greatest number of users possible between the communities and through the region by using the available transportation resources at the least cost to both the user and the state.

## **SATP Transportation Goals, Objectives, and Performance Measures**

Transportation goals have been reordered and revised to reflect the expanded SATP focus on improving system efficiency and mobility in support of the regional economy. During the past decade, the regional economy has been in a state of decline. Because transportation is the backbone of the regional economy, improvements in mobility and transport efficiency will be critical to promoting a strong and healthy economic climate in the future. The SATP goals have been structured to emphasize the need for a more efficient transportation system to foster future economic growth.

### **Goal 1: Transportation System Efficiency – Provide regional transportation facilities and services in the most efficient and cost-effective way possible**

#### ***Objectives***

- Implement transportation improvements that reduce overall regional system operating costs.

- Develop ferry route options and road-shuttle ferry combinations to improve service at lower cost to the user and the state.
- Develop airport and seaplane facility improvements that improve the efficiency of air transportation.
- Provide public infrastructure and services in support of a healthy competitive commercial environment in the provision of commercial air, marine, and land transportation services in Southeast Alaska.
- Utilize ferries designed to serve specific travel markets in the most efficient manner.

***Performance Measures***

- Travel time between communities.
- Cost to travel between communities.
- Transportation costs for person trips and for goods movement.

**Goal 2: Transportation Mobility and Convenience – Improve the mobility and convenience of the regional transportation system in Southeast Alaska**

***Objectives***

- Provide more frequent transportation services that reduce duration between opportunities to travel between communities.
- Reduce the time required to travel between communities through faster modes of transportation.
- Provide more choices of transportation modes or options for travel between communities at convenient times of the day.
- Improve reliability of service.
- Improve connections and scheduling between transportation modes to reduce waiting times.
- Provide convenient “real time” information to travelers so that they can plan their travel more efficiently.

***Performance Measures***

- Average time required to travel between communities in Southeast Alaska.

- The likelihood that travelers in any community in Southeast Alaska can make the journey to and between the communities of Ketchikan, Juneau, or Sitka in one day, without having to spend the night en route.
- Frequency and timing of regional transportation connections between communities. (Examples include the number of ferry stops per week, number of commercial flights per week, schedule of arrivals and departures of ferries and air service, and ability to drive between communities.)

**Goal 3: Economic Vitality – Support local economic development and strength through the provision of adequate and affordable transportation for people, goods, and vehicles**

***Objectives***

- Develop transportation improvements that reduce user costs, increase mobility, and improve level of service.
- Provide public infrastructure and services in support of a healthy competitive commercial environment for the provision of commercial air, marine, and land transportation services in Southeast Alaska.
- Provide public transportation services to bridge transportation gaps that are uneconomic for commercial carriers to serve.

***Performance Measures***

- Reduction in user costs.
- Improvements in level of service.
- Changes in the amount of travel to and from individual communities following transportation system improvements.
- Post-construction economic impacts of transportation investments in local communities.

**Goal 4: Transportation System Safety – Improve the overall safety and reliability of the regional transportation system in Southeast Alaska**

***Objectives***

- Implement improvements in air and marine navigation systems.
- Implement safety improvements to the regional airport and highway infrastructure.
- Provide pilot and driver education safety programs.



- Support safety inspections of aircraft, vehicles, and marine vessels.
- Increase modal choices.

***Performance Measures***

- Accident rates per 100,000 people by transportation mode.
- Frequency of incidents that interrupt inter-community travel in Southeast Alaska.
- Frequency of opportunities for isolated community residents to travel to health care providers.

**Goal 5: Long-Term Funding Stability – Secure stable long-term funding to implement the Southeast Alaska Transportation Plan**

***Objectives***

- Pursue federal funding to the fullest extent possible in support of implementation of SATP transportation improvements.
- Ensure that funds generated by specific transportation facilities and services are returned to support the operation and maintenance of that facility or service.
- Foster partnerships among local communities (public and private sectors) to provide inter-community transportation facilities and services.

***Performance Measures***

- Total transportation resources by source available for Southeast Alaska.
- Stability and predictability of funds over time.

**Goal 6: Consultation with Affected Communities, Tribal Entities, Business, and the Public and Provision of the Opportunity for Public Comment – Inform and provide opportunity for community, tribal, business, and public input**

***Objectives***

- Consider affected community, tribal, business, and public interests in decisions about transportation system needs and investments.
- Encourage participation by affected communities, tribes, businesses, and the public in review and comment on the development and provision of transportation facilities and services.

- Encourage participation by governmental resource agencies and conservation groups in review and comment on the development and provision of transportation facilities and services.

***Performance Measures***

- Number of meetings and opportunities for local government, community, tribal, business, and public input into the planning and project development process.
- Number of opportunities and media utilized to inform community, tribal, business, and public interests.

**Goal 7: Continuation of the Planning Process – As appropriate, integrate political and project (environmental and design study) decisions into the SATP by amendment**

***Objectives***

- Maintain a continuing and dynamic regional planning process.
- Carry out detailed social, economic, and environmental studies of regional system plan components during project planning and development phase.
- Periodically update the SATP in response to the findings, recommendations, and decisions issuing from project planning, environmental, and design studies.
- Periodically update the SATP as appropriate in response to political decisions with respect to improving the regional transportation system and providing state transportation services.

***Performance Measures***

- Up-to-date content of the SATP.
- Timely amendments to incorporate new information between periodic updates.

## V. PURPOSE AND NEED

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Previous work on the SATP served as the starting point for defining the broad “tests” used to assess and select proposed transportation improvements. The expression of these tests is termed Purpose and Need. This term is borrowed from federal regulations that implemented the National Environmental Policy Act (NEPA). While under NEPA this term is specifically defined, the SATP update uses the term Purpose and Need in a broader fashion that is conceptual in nature and thus more flexible in its application. This chapter identifies an overall Purpose and Need for regional transportation improvements and provides supporting information for its components.

Generally speaking, Purpose and Need is used to evaluate which set of improvements does the best job of moving the regional transportation system toward the desired condition. It is most useful in identifying and tracking the key characteristics that the proposed improvements need to have, and measuring the effectiveness of these characteristics in delivering improvements in performance.

State transportation improvements need to serve the best overall public interest as they respond to changes in public travel needs. In identifying Purpose and Need, the SATP update relies extensively on expressions of transportation need, as previously documented in the 1999 SATP and as indicated by the public during the update process.

### **Purpose and Need Statement**

*To address the unique characteristics of the Southeast Alaska setting by calling for transportation improvements that lessen the isolation between communities, add or improve long-distance connections, increase mobility and lower costs to the user, and respond to financing concerns while providing transportation capacity that meets regional transportation needs.*

Purpose and Need consolidates nine strategies, which are discussed by topic area in Table 6 on the following page.

**Table 6. Purpose and Need Strategies**

Topic Area	Strategy	Transportation Concepts	Expression of Concerns
Roads	Where possible, shift to a surface network that relies on land highways to connect communities and other destinations.	<p>Construct roads to increase capacity and improve the efficiency of the transportation system. Shifting from a surface network that is based on long-distance ferry runs and shortening ferry routes will substantially improve the overall system.</p> <p>Transportation connections are a prerequisite for exchanges between population centers. The public is likely to travel for many reasons, but can be deterred by high cost, lack of service, and difficulties in matching travel plans to restrictive schedules.</p> <p>Land highways require fewer staff to maintain and allow expanded user choice and flexibility.</p> <p>A more self-sufficient system improves sustainability, ensuring service over the long term.</p>	<p>Less than 10 percent of the regional population can reach the nation's highway system without paying a toll and waiting for a scheduled sailing.</p> <p><u>Household Survey (1997)</u>: Nearly every community expressed strong support for faster trips, which implies that total travel time is an important consideration in trip-making decisions.</p> <p><u>Household Survey (1997)</u>: 68 percent said they would travel more if "daily round-trips" could be accomplished.</p> <p>The <u>Advisory Committee (1997-1998)</u> frequently emphasized that the need to reduce the level of user costs and state costs was a defining goal of the plan.</p>
Emergency response	Add travel options that can be used to reach those in need, and move the sick and injured to treatment facilities where they can be stabilized.	<p>Time is a critical factor when responding to emergencies and transporting those in need of treatment. The most versatile and generally fastest way of reaching incident scenes is by vehicle if a highway is available for this purpose.</p> <p>All-weather surface connections to airports are needed so that medivac aircraft can be used to reach specialized treatment facilities.</p>	The public places immediate, effective response to emergencies at the top of the priority list. Reasonable actions that improve response time and effectiveness are broadly supported.

**Table 6. Purpose and Need Strategies**

<b>Topic Area</b>	<b>Strategy</b>	<b>Transportation Concepts</b>	<b>Expression of Concerns</b>
Weather conditions	Add travel options that are less sensitive to problematic weather conditions such as reduced visibility, low cloud ceilings, and high winds.	<p>Limited visibility (due to weather) or high winds do not close a highway. The driver is responsible for making appropriate choices in terms of traveling the route, and has more flexibility to take advantage of breaks in the weather.</p> <p>Pilots are prohibited from flying when visibility is below minimums, and often encounter worsening conditions during a flight. High winds may interrupt or cancel service.</p> <p>Ferries are able to operate under most weather conditions, with larger vessels having the greatest capabilities. High winds may interrupt or cancel service, particularly for smaller vessels.</p>	Flight delays and cancellations due to weather are common in Southeast Alaska, particularly in the winter months. Poor weather conditions can result in multi-day gaps in service, with planes not able to fly until conditions improve. These gaps are particularly problematic in emergency situations, such as when a medical evacuation is required.
Landing and take-off mishaps	Expand the surface area that surrounds the paved runway so that it is available to errant aircraft.	Various circumstances can lead to a situation in which an aircraft requires a firm surface area adjacent to the paved runway. These circumstances include pilot error, equipment malfunctions, mechanical failures, poor weather conditions, and sudden shifts in wind.	Expansion of each runway safety area (the surface area around the runway) is a national initiative of the Federal Aviation Administration. In Southeast Alaska, most airports with daily jet operations have little surface area beyond the edge of the paved runway.
Readiness	Ensure that basic transportation capabilities are in place so that they are available for evacuation and defense purposes.	Transportation facilities serve many purposes. While all too often ignored, the capabilities they provide are critical in the aftermath of a natural disaster or when needed in response to threats or attacks.	A primary justification for continuing the federal role in financing transportation improvements is the defense and disaster response capabilities that they provide.
Demand	Plan for future activity and use so that peak demand is accommodated in a cost-effective manner.	Facilities are sized and improved based on demand projections. Reports of existing use are carefully evaluated, along with analysis of possible new sources of activity and use.	Demand exceeds capacity on several surface links, in both summer and winter. Capacity shortages prevent some travelers from making the trip, force changes in mode selection, and require that others alter their travel plans by lengthening (or not making) their trip.

**Table 6. Purpose and Need Strategies**

Topic Area	Strategy	Transportation Concepts	Expression of Concerns
Cost	Where possible, use standard state practices for financing transportation facilities. Reduce overall costs to the public and state	<p>Employ existing roads and construct highways to reduce ferry route distances and thereby reduce customer costs because roads are less costly to use than ferries.</p> <p>Dayboats operate with fewer crewmembers, which leads to lower operating costs, lessening pressure to increase fares.</p> <p>Increase ferry system ridership and fare revenue by making the system more attractive to users in terms of frequency, travel time, and convenient time-of-day operations.</p> <p>Decrease operating costs by reducing ferry route distances and using smaller, less costly ferries.</p>	<p>The <u>Advisory Committee</u> (1997-1998) emphasized that the need to reduce the level of user costs and state costs was a defining goal of the plan.</p> <p><u>Household Survey</u> (1997): Nearly half of all households felt lower costs would increase their travel on AMHS.</p> <p><u>Customer Survey</u> (1998): 67 percent of Southeast residents said the vehicle fares were “too high” and 56 percent said passenger fares were “too high.”</p>
Hard times	Lower costs to the user by shifting to transportation arrangements that do not require special charges or other impositions on travelers.	Lower cost transportation is essential to American prosperity, Alaskan competitiveness, population growth, and increasing mobility. Over time, economic activity shifts from higher cost locations to lower cost settings.	Because of economic difficulties, residents of Southeast Alaska cannot afford always having to pay fares for long-distance travel between communities. Both air and ferry options are expensive, and there is no alternative for most personal and business trips.
Security	Identify and remedy vulnerabilities of transportation facilities to damage and destruction from physical attacks.	Some elements of the system are more vulnerable to attack than others. The capabilities that transportation provides are lessened, and may be lost, if attacks against critical links or elements are successful.	It is a national priority to assess where the weak points in transportation are, and to take measures that lessen the likelihood of successful attacks and shield facilities from damage during possible attacks.



## VI. LONG-TERM VISION

This chapter describes the long-term vision for the surface elements of the regional transportation system. During the interim, ferry connections will continue to bridge waterways to provide surface transportation between communities. For several community pair connections in the region, it is not feasible to shorten or replace the ferry route with a bridge or road. However, a number of opportunities exist to replace or shorten ferry routes and connections by construction of roads and bridges.

Surface transportation development priorities over the next 20 years are depicted on Map 2. (Maps 2 and 3 are repeated on the following pages.) The ultimate highway development plan and proposed highway designations are depicted on Map 3. Map 10 portrays the planned Southeast Alaska airport system. The proposed improvements are based on the following mission statement (discussed in Chapter IV):

### **SATP Mission Statement**

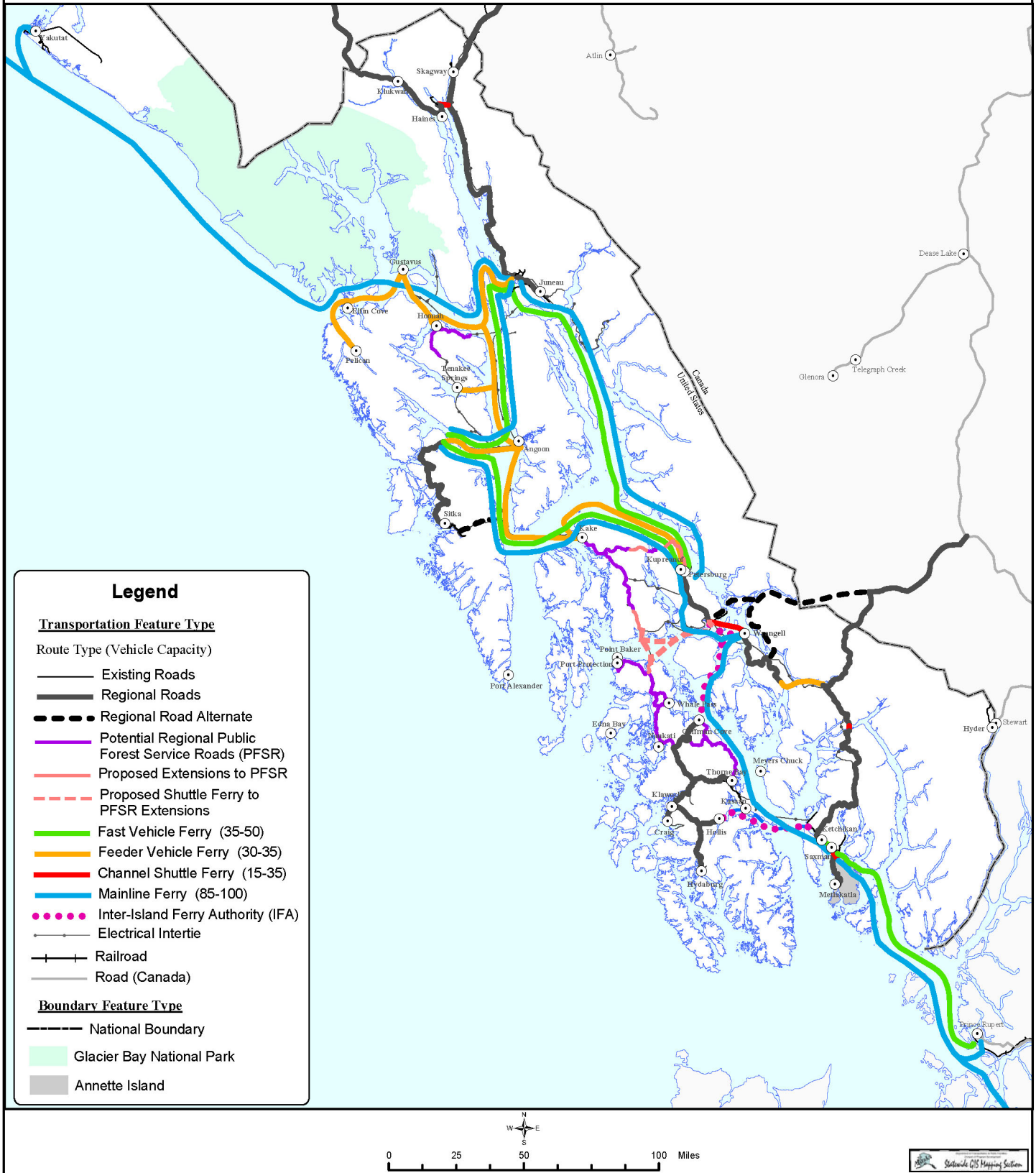
*To increase system capacity and improve efficiency, shift from a surface network that is based on long-distance ferry runs to a surface network that relies on land highways to connect communities and other destinations. Land highways will dramatically expand activity and mobility by increasing traveler flexibility, choice, and speed while reducing or eliminating toll costs.*

The land highways and connecting ferry links that make up this vision do the best job of completing a surface network for Southeast Alaska that meets Purpose and Need (Chapter IV). This network serves the best overall public interest for future state investments in the regional transportation system. The improvement efforts of others, especially the Forest Service, are also supported by this planning effort. Chapter III describes the state's relationship to the initiatives of the Forest Service.

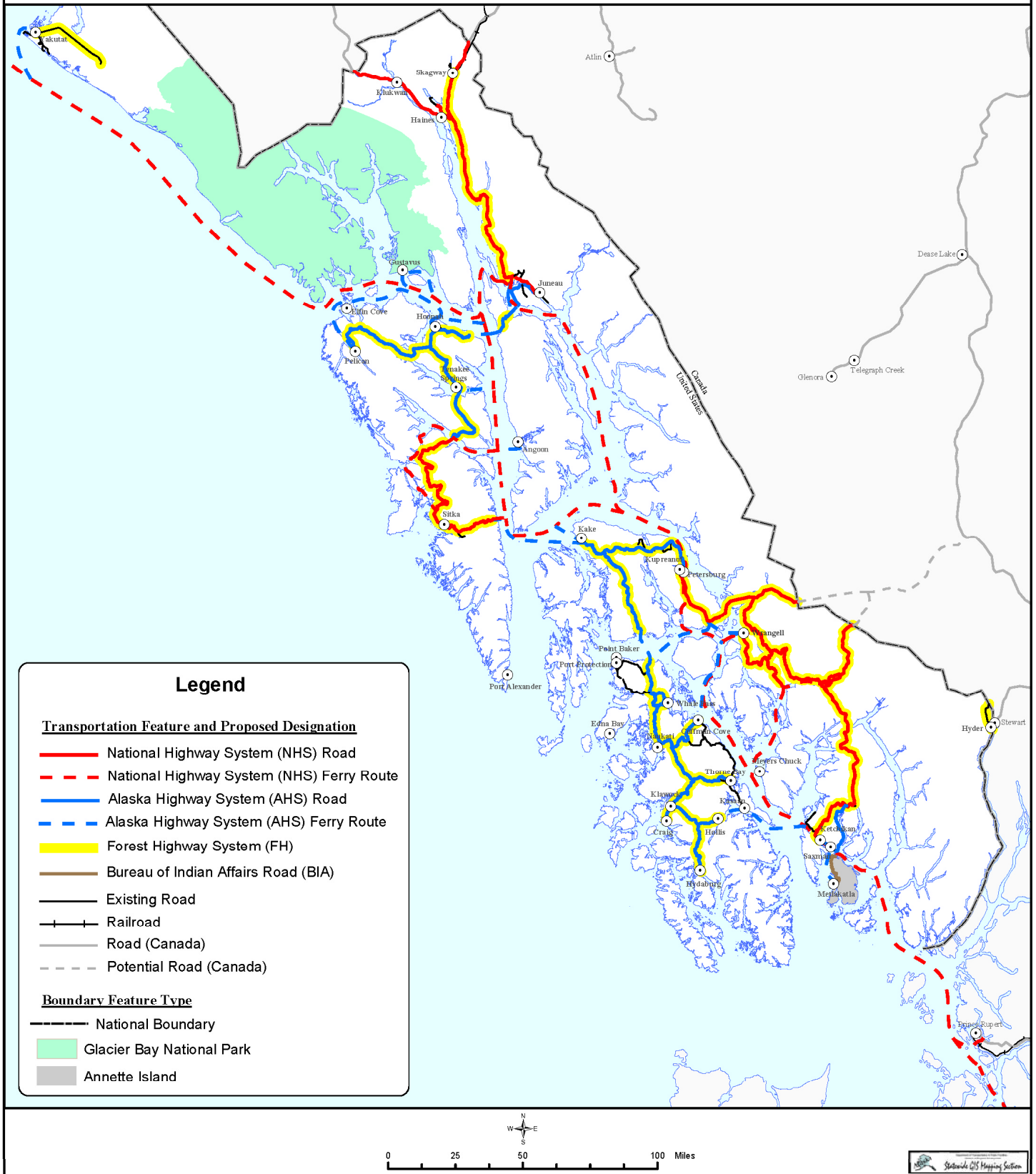
The 20-year plan depicted in Map 2 relies on new highways that provide through connections to the continental highway system from the two most populous communities. Ferries continue to play a vital role in bridging gaps in the highway system.

This chapter examines transportation elements that include road and marine transportation for regional and community access, regional aviation improvements, and computer and communication technology. The development of cost estimates also is discussed. The following section describes the primary regional system proposed to carry traffic between the

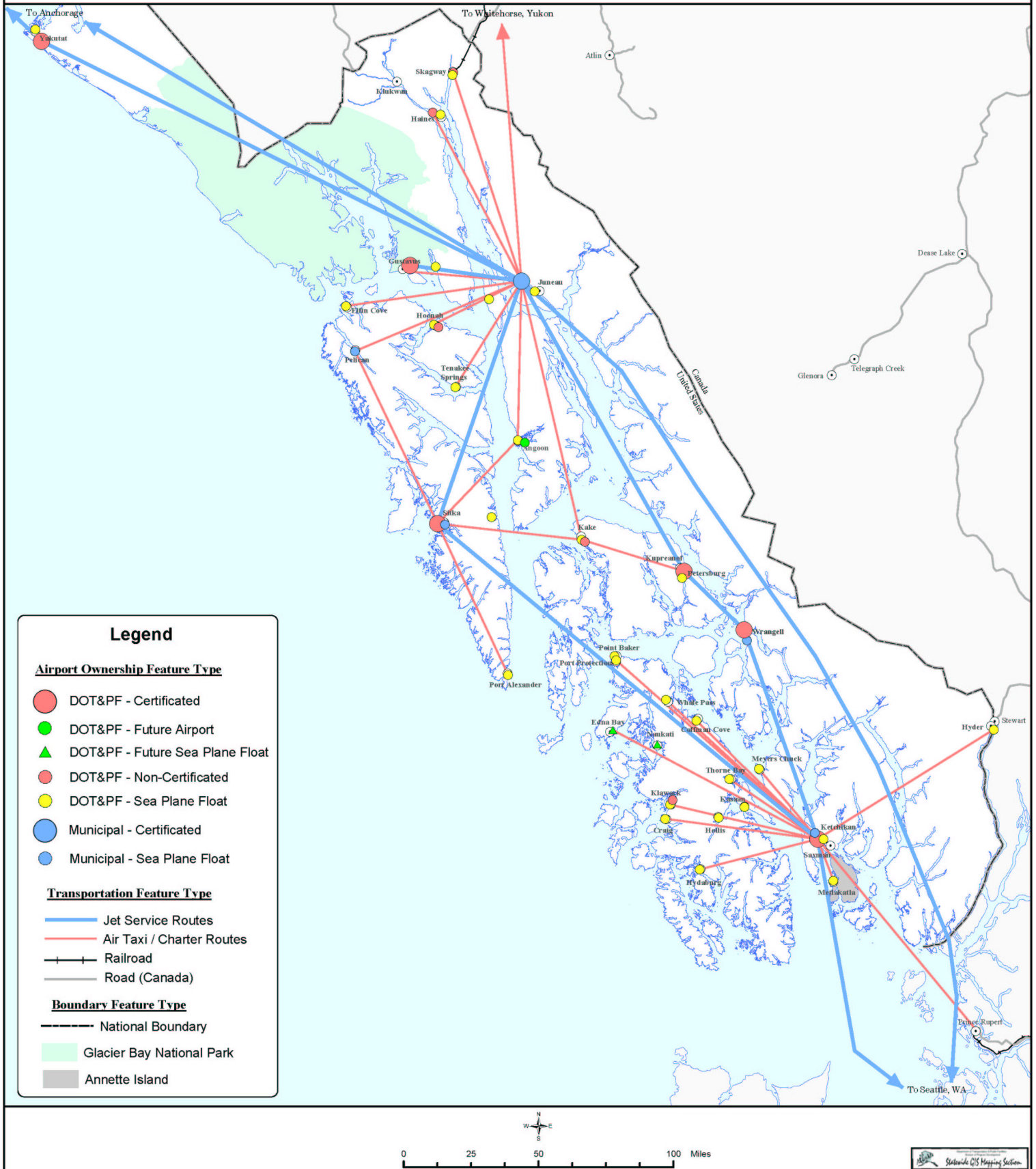
## Map 2 Southeast Alaska 20 Year Transportation Plan



# Map 3 Ultimate Regional Highway Development Plan



# Map 10 Southeast Alaska Airport System Plan





principal Southeast communities and through and between the region and the rest of the world.

## Regional Highway System

### Regional Road Element

#### ***Juneau Access — Lynn Canal Highway (Juneau – Skagway)***

The purpose of the SATP preferred alternative is to remove the gap that prevents the land highway network from reaching Juneau, and to make it easier to travel between Haines, Skagway, and Juneau (the Lynn Canal Corridor). Juneau is the largest community on the North American mainland without a highway connection to the continental highway system. Removing this gap can be accomplished by construction of a highway between Juneau and Skagway. The SATP recommends construction of a highway between Juneau and Skagway with a short shuttle ferry connection between Haines and a new terminal at the Katzechin River delta. Ultimately, when traffic demand warrants, the Haines shuttle ferry can be replaced with a bridge. A breakout of the cost estimate for the preferred alternative follows:

Construction of 68 miles of roadway	\$265,000,000
Construction of Katzechin Ferry Terminal	\$15,700,000
Refurbish <i>Aurora</i>	\$5,000,000
Total	\$285,700,000

The annual operation and maintenance cost is estimated at \$1.5 million for the road and \$2.9 million for the shuttle ferry.

#### ***Mid-Region Highway Access to the Continental Highway System (Bradfield Road)***

This highway corridor would connect Ketchikan, Wrangell, and Petersburg to the Cassiar Highway in Canada. A route has not been selected between the terminus (on Bradfield Canal) of the proposed Revillagigedo Highway connection to Ketchikan and the future highway junction in Canada. The basic choice is between one of two large river valleys on the Alaska side of the border. There is also the question of how to link Wrangell and Petersburg. In Canada, construction of new highway is required to reach the international border. The associated international coordination complicates, and potentially delays, the use of federal funds on Mid-Region Access, including environmental analysis.

This new highway would provide a regional highway connection for Southeast Alaska that has no counterpart today. A mid-region highway connection extended to Ketchikan would reduce reliance on ferry

transportation to support the regional economy. A highway connection to Ketchikan would enable further reduction in the mainline fleet which will be pursued, if continued service to Prince Rupert and Bellingham requires a state subsidy. Planning-level cost estimates are not available for all corridors. For the Bradfield corridor from the border to a ferry terminal at Duck Point on the Bradfield Canal (including extension of Zimovia Highway from Wrangell and construction of a ferry terminal at Fools Inlet), the planning-level estimate for design and construction is \$314 million, including terminals. This estimate for the Bradfield Road includes a high-cost feature – twin single lane tunnels approximately 1.6 miles in length. Annual road maintenance costs are estimated at \$507,000 plus \$1.7 million to operate the Bradfield Canal ferry.

### ***Revillagigedo Highway***

This highway will extend north from the Ketchikan road system across Revillagigedo Island and the upper part of Cleveland Peninsula. It connects to the Mid-Region Access (described above). In combination with Mid-Region Access, this new route links the second largest community in Southeast Alaska with the continental highway system. Today, there is no highway or ferry access along this corridor. Because Ketchikan is the regional center for southern Southeast, this new travel route would also serve residents of Prince of Wales Island and Metlakatla.

The Revillagigedo Highway includes construction of about 58 miles on Revillagigedo Island, at least one state maintenance facility, terminals on each side of Behm Canal, deployment of a ferry, and 22 miles of highway across the upper part of Cleveland Peninsula to reach the Mid-Region Access at Duck Point. The best connecting point to the Ketchikan road system has not been determined, and the location of the alignment across Revillagigedo Island requires further review.

The combined planning-level estimate for design and construction (including ferry acquisition) is \$265 million. Although many terrain features are favorable, construction along the south side of Bradfield Canal would be expensive. Annual maintenance costs are estimated at \$738,000, plus \$864,000 to operate the ferry that crosses Behm Canal.

### ***Baranof Highway***

This highway would cross Baranof Island from the Sitka road system to a new terminal that is closer to, and potentially on, Chatham Strait. The corridor to be traversed by the highway has not been selected. Any route would shorten the ferry link to Sitka from both Juneau and Petersburg. Sitka, the third largest community in Southeast Alaska, is on the outer coast of Baranof Island. A range of mountains on Baranof Island separates Sitka from the Inside Passage. Complicating navigation to Sitka is the fact that the narrowest part of the connecting waterway, Sergius Narrows in Peril Strait,



has the most severe tidal current restrictions of any waterway on AMHS routes.

Two basic alternatives have been identified for the Baranof Highway: (1) construction of 49 miles of new highway to Rodman Bay on the north end of the island (estimated at about \$160 million for highway and terminal); and (2) construction of 18 miles of new highway to Baranof Warm Springs Bay on the east side of the island (estimated at about \$250 million for highway and terminal). The second route is complicated by the need for a two-mile-long tunnel that has significant capital cost as well as operating cost implications. The potential of other routes also needs to be addressed. Preliminary estimates for maintaining and operating a highway to Rodman Bay and to Baranof Warm Springs Bay are \$869,000 and \$950,000, respectively.

### ***Gravina Access — Bridge from Ketchikan to Gravina Island***

This project would construct a bridge across Tongass Narrows, connecting Ketchikan with its airport and developable lands on Gravina Island. The preferred crossing will also provide access to Pennock Island. Ketchikan has the only primary airport in the United States where airport access is by ferry. The bridge would improve air access to Ketchikan by providing seamless transfers to and from the airport. The current service interval for ferry crossings is one-half hour in winter and every 15 minutes in summer.

The preferred alternative in the Gravina Access EIS proposes to construct a high bridge crossing of the east channel of the Tongass Narrows from Revillagigedo Island to Pennock Island south of the Coast Guard Base, a highway across Pennock Island, a second bridge across the west channel of the Tongass Narrows to Gravina Island, and a highway to Ketchikan International Airport. The highway would extend to an industrial park at the northwest end of the airport. The estimated construction cost of the bridge and access road to Ketchikan International Airport is \$180 million.



Construction of airport parking structures and other airport improvements to accommodate vehicle traffic would increase the total construction cost to approximately \$206 million. The cost of the EIS is \$9 million, and design would cost an additional \$15 million. Annual maintenance and operation costs are estimated at \$100,000.

### ***Coffman Cove Road***

Overall, there is general agreement that the highest priority for Prince of Wales Island is establishing the island's northern gateway (at Coffman Cove) for ferry service to and from the island. Addressing this priority requires reconstruction of 20 miles of log haul road between the end of the state highway system at the intersection of North Prince of Wales Island Road and Coffman Cove Road and construction of a new ferry terminal in Coffman Cove. Reconstruction is currently under way from both ends.

The project is being constructed in segments. A nine-mile segment from North Prince of Wales Island Road to Hatchery "Y" intersection with Luck Lake Road is scheduled for completion in 2005. Reconstruction on the middle segment from Hatchery "Y" to the end of construction on the Coffman Cove end will not be completed until 2007. The entire road will not be paved until 2008. The Coffman Cove Ferry Terminal is planned for completion by spring 2006 in time to receive the new IFA ferry *Stikine*. Vehicle traffic will use the Luck Lake (log haul) Road as a detour route until road reconstruction is completed.

The SATP reiterates the previous recommendation that the state increase its responsibilities by adding the 20 miles of Coffman Cove Road to the state highway system. Both ends of this route are currently being upgraded, with the Forest Service and the City of Coffman Cove responsible for maintenance following project completion. The addition of Coffman Cove Road to the state highway system would follow completion of paving. A second state maintenance facility will be needed on the north end when state maintenance begins because Coffman Cove is too far from the ADOT&PF maintenance station at the Klawock airport.

Reconstruction of the Coffman Cove Road from the end of state maintenance on North Prince of Wales Island Road to the site of the new Coffman Cove Ferry and Bus Terminal is estimated to cost approximately \$47 million when completed. This estimate includes construction of a second state highway maintenance station on Prince of Wales Island. Annual maintenance and operation of the addition of 20 miles to the state road system is estimated at \$144,000. Construction of the Coffman Cove Terminal is estimated at \$9.4 million with an estimated annual maintenance expense of \$25,000. The terminal will be owned and operated by the City of Coffman Cove.

### ***Kake to Petersburg and Kake to Totem Bay***

The SATP recommends construction of a road between Kake and Petersburg as a regional road. This road is not supported by Kake at this time; however, because this road and the proposed road connection to Totem Bay present significant benefits to the regional transportation system, these road links will continue to be pursued from a regional perspective. The Kake - Petersburg Road will require a short shuttle ferry crossing of the Wrangell

Narrows between Kupreanof and Petersburg. The Totem Bay Road will require a shuttle ferry crossing of Sumner Strait to Red Bay and reconstruction and extension of the North Prince of Wales Island Road to Red Bay to complete the connection to the Prince of Wales Island highway system. These two road links are considered essential transportation – utility corridors to be preserved to meet future needs. 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.

### ***North Prince of Wales Island Road Upgrade to El Capitan***

The Forest Service has completed an EA supporting reconstruction of 24 miles of North Prince of Wales Island Road from Coffman Cove Road junction to Neck Lake Road. This section is ready for a design-build contract. The existing single lane forest road would be reconstructed to a paved two-lane standard. Design and construction of this segment awaits \$62 million in funding. The remaining 16-mile section to El Capitan is estimated to cost \$42 million to reconstruct.

### ***Essential Transportation and Utility Corridors***

In a region as rugged as Southeast Alaska, valleys and mountain passes represent invaluable corridors for surface routes and utility transmission lines. Map 7 (on page 19) identifies the transportation and utility corridors considered essential to the state. The SATP focuses priority on protection and development of these essential highway corridors. Construction of roads and utility transmission lines through these corridors will occur to address current and future needs, as the need and opportunity for development occur.

### **Regional Ferry Element – Alaska Marine Highway System**

By 2025, the surface network of primary highways will still be incomplete. During the interim, shuttle ferries will be required to bridge several critical gaps and ferries will remain vital to serving routes and communities isolated by waterways and wilderness. With respect to ferry operations, the SATP includes mainline routes, shuttle ferry connections, and further evaluation of options for one or more shuttle or circuit ferry routes to serve less populous communities in the Northern Panhandle. The new highways will require shuttle ferries to bridge the gap between Haines and the Lynn Canal Highway, across Behm Canal, across Bradfield Canal, and between Wrangell and Petersburg until a road connection can be accomplished. The *Aurora* may provide interim summer service between Haines and Skagway beginning in 2005 to serve traffic demand.

## Mainline Ferry System

The mainline ferry is currently the primary means of moving personal vehicles into and out of communities in Southeast Alaska, and is the only way to travel with a vehicle from Southeast to the interior of the state and to the Lower 48 without driving through Canada. By 2010, the mainline fleet serving Southeast Alaska will be reduced from five to three ferries. Between 2010 and 2018, two of these vessels will have been replaced with new ferries. Two will serve between Juneau and Bellingham, Washington, stopping at the principal communities on the mainline route in Southeast Alaska. The



*Kennicott* will serve between Whittier and Prince Rupert, British Columbia. Each ferry will make a round-trip per week through the region in the summer and will operate at reduced service in the winter. Mainline service will be maintained commensurate with traffic demand and revenue cost recovery. The SATP anticipates greater reliance on the highway and shuttle ferry system to meet the region's transportation needs.

The primary objective of mainline service is to serve Alaskans by bridging gaps in the highway network. A second objective of the ferry system is to transport tourists and vans to support state industry. The mainline routes address the following objectives:

1. Continue this travel option for Alaskans and visitors, including access to Alaska from traditional southern gateways
2. Provide community-to-community transit service for passengers traveling without cars
3. Provide a basic service for tourists traveling with vehicles
4. Provide a transportation option that enhances freight service, by supplementing the sailing schedules of private-sector freight carriers
5. Provide important support in the movement of fresh fish product to markets at critical times of the year
6. Avoid Canadian customs, which presents a barrier to those citizens who desire to transport personal firearms or other items prohibited by Canada or have either a Driving Under the Influence of Alcohol Conviction on their record or a criminal record

To meet these service objectives, the *Columbia* and *Malaspina*, in the interim, will serve mainline ferry routes between Lynn Canal (eventually Juneau) and

Bellingham with stops in both directions at Juneau, Sitka, Petersburg, Wrangell, and Ketchikan. The *Kennicott* also will provide service between Whittier and Prince Rupert. Each ferry will complete one round-trip over its route each week. Mainline operations will be reduced in the winter.

Construction of the highway between Juneau and Skagway will enable the mainline ferries serving the Bellingham point of origin to turn south in Juneau instead of Skagway. Following completion of a road between Juneau and Skagway along the east side of the Lynn Canal, Juneau would become the northernmost port on the mainline route in Southeast Alaska. If a ferry option were selected, the two Bellingham mainliners would likely serve through Lynn Canal. Future itineraries are subject to change in response to traffic demand, budget constraints, and competing system needs.

In the future, mainline ferry segments that parallel (or provide an alternative to) a through highway connection should be priced to recover the cost of providing this service, because this service would not be considered critical when a highway alternative is in place. Specific examples are the service provided across the Gulf of Alaska between Juneau and Whittier and the segment between Ketchikan and Bellingham, Washington. Both routes benefit a segment of travelers but, because highway alternatives exist, should be maintained only as long as they recover costs. The roads in Canada and interior Alaska will be maintained whether or not these ferry connections are provided. Currently, the Bellingham segment recovers its cost and the cross-Gulf of Alaska service operates at close to breakeven.

### **Shuttle Ferry System**

The purpose of the primary shuttle ferry system is to increase the mobility of Southeast Alaska residents by significantly increasing the frequency of service between Southeast communities during convenient daytime hours. More specifically, travelers and freight will be able to move between all communities within the region and complete the trip in one day. The system will offer this service every day in the summer and several times a week in the winter. The primary shuttle ferry system addresses the following service objectives:

1. Provide daily point-to-point passenger and vehicle service between the principal communities within the region with connecting shuttle connections between the principal communities and the outlying smaller communities during the summer. Reduced service frequency would be provided during the fall, winter and spring seasons commensurate with traffic demand
2. Provide convenient regular daytime service schedules
3. Increase the overall system efficiency

4. Reduce the average cost to the user where possible by taking advantage of road extensions to shorten ferry connections
5. Reduce travel time between communities within the region
6. Provide a transportation option that enhances freight service, by supplementing the sailing schedules of private-sector freight carriers
7. Provide important support in the movement of fresh fish product to markets at critical times of the year

It will take both time and funding to implement the above improvements. In the interim, it will be necessary to improve the efficiency of the existing ferry system and to make the best and most equitable deployment of ferry resources. Mainline and circuit feeder ferries should serve communities between route termini to the degree that the incremental costs (to the system and the majority of the passengers) are reasonable and equitable.

Several current AMHS vessels will be retired from the fleet by 2010. The *M/V Bartlett* was retired in 2003. The mainliner *M/V Taku* will be laid up in 2004, following successful deployment of the *Fairweather* and repair of the *LeConte*. The *M/V Aurora* will work in Prince William Sound in 2004 and will either be retired or redeployed in 2005. One proposal is to redeploy the *Aurora* between Haines and Skagway during the summer until a new Haines-Skagway shuttle ferry is needed to meet demand. The Southern Gateway Shuttle is anticipated to arrive in 2008, at which time the *M/V Matanuska* will be retired.

In summary, the long-term vision calls for 13 ferries (and related terminal improvements) to serve the region. In addition to mainline service, the following ferry elements need to be added to the surface network during the next 20 years to bridge the gaps in the highway network. The estimated cost of new ferry construction and refurbishment during the next 20 years is presented in current dollars in Table 7. Operations costs are estimated based on the estimated number of weeks each ferry is anticipated to operate in a year.

The first of a new fast vehicle and passenger ferry class, the *Fairweather*, entered service between Juneau, Skagway, Haines, and Sitka in June 2004. The *Fairweather* is capable of carrying 35 standard cars or a lower-quantity mixture of vans, campers, and cars, plus 250 passengers, at an average service speed of 32 knots. . Initially, the vessel will operate between Juneau and Haines and between Juneau and Skagway four days per week and between Juneau and Sitka three days per week during the summer with reduced service during fall, winter, and spring. When operating north from Juneau, the *Fairweather* will make two point-to-point round-trips per day up Lynn Canal: one to Haines and one to Skagway. During winter, the



**Table 7. AMHS Fleet Expenditures through 2025**

<b>Ferry</b>	<b>New Vessel Construction (\$ millions)</b>	<b>Refurbishment (\$ millions)</b>	<b>Operating Weeks</b>	<b>Maintenance &amp; Operations Cost (\$ millions)</b>
<i>Malaspina</i>	0	6	46	11
Bellingham Mainliner	120	26	46	14
<i>Columbia</i>	0	23	26	8
Bellingham Mainliner – Seasonal	120	6	26	8
<i>Kennicott</i> Prince Rupert – Whittier	0	26	46	11.5
Haines/Skagway (Katzehin) Shuttle	17	11	46	0.8
<i>Matanuska</i>	0	0	46	11
<i>Taku</i>	0	0	46	9.5
<i>LeConte</i>	0	0	46	6
<i>Aurora</i>	0	5	46	6
Juneau – Petersburg FVF Shuttle	40	14	46	4.5
Ketchikan – Petersburg FVF Shuttle	40	11	46	4.5
<i>Fairweather</i> Sitka Shuttle	0	16	46	4.5
Ketchikan – Prince Rupert FVF Shuttle (Southern Gateway)	67	12	46	4.5
Northern Panhandle Shuttles (Undefined)	45	12	46	4.5
<i>Lituya</i>	0	10	46	1.2
Behm Canal Shuttle	8	5	46	0.9
Bradfield Canal Shuttle	25	5	46	1.7
<b>Total</b>	<b>482</b>	<b>188</b>		<b>not meaningful</b>

FVF = Fast vehicle ferry

*Fairweather* may make only one trip per day, stopping at both Haines and Skagway in a single circuit trip. When operating south from Juneau it will make one round-trip per day to the existing Sitka Ferry Terminal. Redeployment of the *Fairweather* from Lynn Canal service will depend on completion of the Juneau-Skagway road or other transportation improvements in the Lynn Canal corridor. Longer-term plans are for the *Fairweather* to serve primarily the Juneau-Sitka link to provide direct daily service between Sitka and Juneau. As part of the AMHS fleet, it will be deployed where it will most effectively serve the regional highway system at a given point in time.

Fast vehicle ferries will provide point-to-point daily service in the summer over routes connecting Juneau, Sitka, and Petersburg in the Northern Panhandle. This daily service will be supplemented by three mainline ferry trips per week in each direction. The frequency of service will be reduced

during the winter months commensurate with traffic demand. In general, these services will be operated and subsidized by the state through AMHS, which is an “essential part of the Alaska transportation system.”<sup>1</sup> IFA, and similar authorities, can play an important role in operating specific services.

Pending successful deployment and performance of the *Fairweather*, two additional fast vehicle ferries need to be constructed for deployment between



Juneau and Petersburg and between Ketchikan and Petersburg. The SATP recommends deployment of a fast vehicle ferry between Juneau and the existing Petersburg Terminal in 2006, and deployment of another fast vehicle ferry in 2007 between Ketchikan and the planned South Mitkof Terminal south of Petersburg at Blind Slough. Eventually the Ketchikan-South Mitkof fast vehicle ferry would be redeployed to serve between the terminus of the cross-Baranof Highway and Petersburg when the Revillagigedo Highway is complete.

***Ketchikan to Prince Rupert, British Columbia,  
as the Southern Gateway***

The SATP recommends continuation and improvement of ferry service between Ketchikan and Prince Rupert. It also recommends construction of a new ferry, referred to as the Southern Gateway Shuttle. The Southern Gateway Shuttle should be capable of transporting large loads (capacity of 50 to 65 standard cars and 15 loaded vans) at a service speed in excess of 22 knots, depending on the location of the Prince Rupert Terminal. Proposals to improve access between Prince Rupert and Port Simpson will be evaluated for the efficiency of a transportation system connection at Port Simpson versus Prince Rupert. The goal is to minimize both the length of the ferry connection and the need for modal transfers to the degree that is practical. Shorter ferry routes are generally less costly to provide ferry service; however, additional modal transfers can be more costly to the user in terms of longer travel time, inconvenience, and out-of-pocket expense.

The community of Hyder, near the head of the Portland Canal, has also been evaluated several times as a potential Alaskan gateway for transfers to the continental highway system. Because of the much longer ferry distance between Ketchikan and Hyder, Hyder is at a considerable disadvantage to Prince Rupert as the location for a gateway terminal. The marine distance to Hyder is 50 percent greater than to Prince Rupert; therefore, use of the Hyder

<sup>1</sup> Source: Alaska Statute, Title 19, Chapter 65, Section 50 S 19.65.050 (a) (1).

gateway presents a significant service and cost penalty for use as a transportation connection.

The SATP recommendation is to specifically design a Southern Gateway Shuttle ferry to maximize service efficiency between Ketchikan and Prince Rupert. The Southern Gateway Shuttle is proposed to enter service as early as 2008. If this ferry is not available when the fourth fast vehicle ferry is delivered in 2007, the ferry *Matanuska* is recommended to be deployed as a dayboat between Ketchikan and Prince Rupert until the new ferry is available.

### ***Deployment of Fast Vehicle Shuttle Ferries***

A fast shuttle ferry system is proposed to replace two mainline ferries in the short term and ultimately, in conjunction with the planned extension of the highway system, provide the primary connection between the communities of Juneau, Sitka, and Petersburg in the Northern Panhandle. Three fast vehicle ferries would serve to move traffic through the region and between communities on a convenient and regular schedule.

As noted above, three fast vehicle ferries and the new Southern Gateway Shuttle ferry would initially fill the gap in the regional highway system for traffic moving through the region. When the new highway-shuttle connection for Juneau, Haines, and Skagway is completed, the *Fairweather* would connect Sitka and Juneau, and the remaining two fast vehicle ferries would connect Juneau and Ketchikan via terminals and transfers in Petersburg. The Southern Gateway Shuttle ferry would provide the primary link to the continental highway system via Prince Rupert. The fast shuttle ferry between Juneau and Petersburg is programmed to enter service in spring 2006 at the same time that the new IFA ferry *Stikine* is programmed to enter service connecting Coffman Cove, Wrangell, and Petersburg. The fast shuttle ferry between Ketchikan and Petersburg is programmed to enter service in spring 2007, followed by the Southern Gateway Shuttle ferry in spring 2008. The two fast vehicle ferries operating between Juneau and Ketchikan would depart Juneau and Ketchikan each morning on a regular schedule (approximately 8:00 a.m.) and arrive at noon at their respective Petersburg terminals, located at Petersburg and Blind Slough, approximately 28 miles south of Petersburg. Upon arrival at the Petersburg area terminals, the two fast ferries would unload and wait for two hours at their respective terminals to allow sufficient time for vehicles and passengers to travel between terminals and load before returning to Juneau and Ketchikan. The entire trip between Juneau and Ketchikan would take about ten hours.

The IFA ferry *Stikine* would arrive at the Blind Slough Terminal ahead of the fast shuttle ferry, unload, and pull forward to a holding berth at the terminal and not load until after the departure of the fast shuttle ferry from Ketchikan. The *Stikine* would pull back to the transfer berth following the departure of

the fast shuttle ferry to load all traffic bound for Wrangell and Prince of Wales Island.

The interim deployment of the two fast vehicle ferries between Juneau and Ketchikan in conjunction with the IFA ferry *Stikine* (described above) allows a person originating a trip from anywhere on Prince of Wales Island, Ketchikan, Wrangell, Petersburg, or Juneau to complete trips between all of these places (daily in the summer) during one daylight period. When Juneau Access is in place, Skagway and Haines would be added to this list of communities. With the Revillagigedo Highway and Baranof Highway in place, Sitka will be added to the list. The availability of these day trips would result in a tremendous increase in transportation mobility within the region. Travel time between communities within the region would be reduced significantly. Travel over highway routes and shortened ferry routes would be characterized by greater mobility at lower cost.

Ultimately, the fast ferry between Ketchikan and Petersburg will be redeployed between Sitka and Petersburg, following completion of the Revillagigedo Highway between Ketchikan and Wrangell. When all proposed highway systems are in place, the most efficient through shuttle ferry connection between Juneau and Petersburg via Sitka may be the two ferries departing Juneau and Petersburg each morning scheduled to meet at the Sitka Terminal to exchange either passengers and vehicles or crew and return to the port of origin or pass through to the opposite port. Further evaluation of traffic flow and operations will determine the best operational scenario.



### ***IFA Service Expansion***

In 2006, the IFA plans to initiate ferry service with the new ferry *Stikine* to connect Coffman Cove, Wrangell, and Petersburg. The *Stikine* would operate between a new terminal to be constructed at Coffman Cove, the existing AMHS terminal at Wrangell, and the new terminal 28 miles south of Petersburg, which would be just off the existing Mitkof Highway. The section of Mitkof Highway from Crystal Lake Hatchery Road to the new South Mitkof Ferry Terminal at Blind Slough would be paved. During the summer months, a daily sailing would depart each morning from Coffman Cove for Wrangell and then to South Mitkof, with a return trip through Wrangell. There is no direct service linking these communities today. Besides adding a new link to Prince of Wales Island, IFA service on the second route would establish a daily connection (at least during the summer

months) between Petersburg and Wrangell. In addition to the second route, a third IFA ferry is proposed to address anticipated traffic growth on the route between Hollis and Ketchikan.

The estimated costs for construction are as follows:

Each new IFA ferry boat	\$16 million
Coffman Cove Ferry Terminal	\$9.4 million
South Mitkof Ferry Terminal	\$14.5 million
Improvements to Wrangell Ferry Terminal	\$500,000

The estimated cost to operate the two ferries is \$3 million, but fares would cover these costs.

## **Community Access Elements**

The regional system includes transportation access to individual communities. The community access connectors generally are not needed to move traffic through the region. Plans for meeting important community access needs within the region are described below.

### ***Metlakatla Access – Walden Point Road and Ferry Service***

The new ferry *M/V Lituya* serves the Metlakatla to Ketchikan route exclusively, providing daily service in the summer and less frequent service during the winter. As early as 2008, the road could be completed to Walden Point and two new ferry terminals constructed at Annette Bay and Saxman. While the Annette Bay Terminal would be scheduled for completion with completion of the road, the Saxman Terminal may be accelerated to reduce congestion at the Ketchikan Terminal and improve service to Metlakatla in the interim. The Walden Point Road, in conjunction with the much shorter ferry link, would significantly improve the transportation connection between Metlakatla and Ketchikan by increasing frequency of service and reducing user cost and travel time. The ferry crossing to Annette Bay would also reduce exposure to rough water conditions.

Construction of the new road is governed by a multi-agency Memorandum of Agreement between the military, Bureau of Indian Affairs, Metlakatla Indian Community, FHWA (Western Federal Lands Division), and ADOT&PF. The state is responsible for constructing the ferry and terminals. The other agencies are responsible for constructing the road.

### ***Kake to Seal Point Road***

The Forest Service has circulated an EA for upgrading (as a Forest Highway project) the seven-mile segment from Kake to Seal Point. The first six miles of this segment are on the same alignment as the proposed road to Petersburg and Totem Bay.

### ***Kake to Petersburg Road***

The SATP recommends construction of a road between Kake and Petersburg as a regional systems objective. This road link is recognized as an essential transportation and utility corridor to be preserved to meet future needs. The Kake - Petersburg road connection positions Kake to service through ferry traffic to and from Sitka and ports north that would make use of the regional highway system via Kake. The road to Petersburg could serve Kake as a community connection to the regional transportation system. After reaching Petersburg, the traveler could obtain daily service by either air or ferry to both Juneau and Ketchikan plus ties to the future mid-region highway connection. Without local community support, this regional road segment remains lower in importance than other transportation priorities. Although Kake does not want a road, the community does want improved ferry service.

### ***Prince of Wales Island Roads***

More than 200 miles of highways and forest roads connect communities on Prince of Wales Island. About half of this network is state-maintained, linking the four most populous communities with each other and transportation gateways (ferry and airport) for travel to and from the island. State responsibilities include older highways that do not have adequate roadside environments (45 miles) and modern highways that meet current standards (58 miles). Of the state highways, the 22-mile Hydaburg Road is the only segment that does not support travel speeds above 35 miles per hour. Augmenting the state network are several segments serving less populous communities, which are maintained (several routes are not plowed in winter) through the efforts of the Forest Service and local governments.

**Naukati and Kasaan Roads.** Public comment requested that the state increase its involvement with non-state routes to other communities. Roads serving Naukati and Kasaan were of particular concern. Unfortunately, without additional funding the state does not have the resources to increase



its involvement in response to these requests and concerns. Upgrading small community access roads falls behind the need to improve the primary regional transportation system and roads with higher traffic volumes.

**North Prince of Wales Island Road Upgrade.** The Forest Service has completed an EA supporting reconstruction of 24 miles of North Prince of Wales Island Road from Coffman Cove Road to Neck Lake



Road. The existing single-lane forest road would be reconstructed to a paved two-lane standard. Reconstruction of this road segment would improve access to communities such as Whale Pass on the north end of the island. Design and construction of this segment awaits funding estimated at \$62 million.

**Hydaburg Road.** This road is a two-lane state highway with a hard surface and 30- to 35-mile per-hour design speed. The surface, alignment, and roadside environment of the 22-mile Hydaburg Road are constructed to a lower design standard than the rest of the state system on the island. The recommendation is to continue efforts to improve Hydaburg Road as funding permits.

### ***Hyder, Salmon River Road***

Hyder is a small unincorporated community near the head of the Portland Canal and adjacent to the City of Stewart, British Columbia. The community has a small boat harbor, seaplane float, and good road connection to Stewart and the continental highway system. The City of Stewart has a small airport with a gravel runway, bus service, and limited port facilities capable of handling barges and ships. Although development of an Alaskan southern gateway port to connect with the continental highway system is possible, Hyder's location is a disadvantage; the marine distance between Ketchikan and Hyder is much longer than the marine distance between Ketchikan and Prince Rupert.

Prince Rupert, because of its geographic location, offers the most efficient and cost-effective connection to the continental highway system. Diverting expensive ferry system resources to Hyder would be at the expense of the system at large in terms of both cost and traffic transported throughout the entire regional system. A Southern Gateway Shuttle ferry designed and dedicated to move traffic between Ketchikan and Prince Rupert can move more traffic at less cost to the user and the state.

Recommendations are to continue to improve Hyder's road, small-boat harbor, and seaplane float in response to local traffic demand. Road improvements include reconstruction of Salmon River Road from border to border and paving from the southern border crossing to the bear viewing area. Road improvements beyond the bear viewing area would be coordinated with improvements needed to support British Columbia's needs for access to a proposed provincial park above the northern border. Road improvements include improving the connection between the community and the seaplane float in the harbor, which may involve replacement of a single-lane wood trestle. Access to Hyder would continue to be available by air or by highway and ferry via Prince Rupert.

The Hyder Community Association proposes to develop a multi-modal marine terminal to serve freight and sightseeing vessels. Because community



docks and freight facilities are constructed, owned, and maintained by either local governments or commercial operators, state involvement is limited. The SATP recommends that ferry service between Ketchikan and Hyder continue to be evaluated in future updates of the SATP and in response to future studies and development.

***Angoon, Elfin Cove, Gustavus, Hoonah, Kake, Pelican, Port Alexander, Tenakee Springs, and Yakutat***

Map 2 on page ES-4 illustrates the route that serves several Northern Panhandle communities. The SATP recommends replacing the existing service with more efficient service. The Northern Panhandle Transportation Study will evaluate the full range of air service and ferry service alternatives. The objective is to enable a resident in Angoon, Elfin Cove, Gustavus, Hoonah, Kake, Pelican, Port Alexander, or Tenakee Springs to get to Petersburg, Sitka, or Juneau in a single day of travel and to have such an opportunity at least once a week. More frequent service is recommended for individual communities, as supported by traffic demand. Ferry terminal buildings have been identified as priorities of Angoon and Kake. A new community dock, harbor, and ferry service are priorities of Gustavus.

Major improvements have been made to the Yakutat airport. Surface transportation to Yakutat will continue to be restricted to ferry travel across the Gulf of Alaska and private freight carriers.

## **Regional Aviation Improvements in Progress**

Aviation improvements being undertaken or planned include the following:

- A new airport for Angoon carried forward from the previous SATP, for which planning to develop the new airport has begun
- Planned new public seaplane floats for Naukati and Edna Bay
- Planned expansion of runway safety areas at airports certificated to serve large passenger aircraft to meet Federal Aviation Administration standards
- Runway safety area improvements at Juneau, Ketchikan, Sitka, Wrangell, Petersburg, and Gustavus that have been identified as regional priorities
- Pavement rehabilitation work on several runways, taxiways, and aprons
- Apron expansion projects to meet demand for additional aircraft parking and cargo-handling capacity

Airport development projects do not compete for funding in the same process as road and ferry projects; they are funded through a separate



program. Therefore, aviation facility projects do not proceed at the expense of or languish because of funding decisions for a highway or ferry project.

A Southeast Region Aviation System Plan Study will be initiated in 2004 and completed in 2005. The results of this study will be incorporated into the SATP by amendment. Having identified the highway development plan and a proposed schedule for development, the department

will be better able to assess the impact of surface transportation changes on the aviation system. For example a new road connection may result in less demand for air service in some communities. The aviation planning process will include forecasting the demand for freight and passenger service in and through the region, identification of the probable changes in the aircraft fleet that serves the region, analysis of the impact of potential changes in the Essential Air Service (EAS) program and other financial and regulatory factors that may effect the system, and a determination of the unmet needs that should be addressed during the planning period. In addition, individual airport planning and development efforts are carried out continuously to ensure that the region's aviation facilities keep up with the demands of the aviation system.

Identifying regional demands is the purpose of a system plan, as opposed to an individual airport plan. A number of anticipated changes will have to be accommodated in airport plans; the challenge is to know when and to what extent the changes will affect facilities in the region. In the next year, the department will endeavor to answer those questions through development of a Southeast Region Aviation System Plan. Some issues the aviation plan will address are listed below:

- The further development and implementation of the Capstone program (which places significantly improved navigation and flight information tools in the cockpits of small aircraft) will change the operating environment in the region.
- Continuing improvement in global positioning system (GPS) and associated navigation technology will also result in new operational demands at airports in the region.

- The aging of the existing small aircraft fleet in the region will result in fewer of the planes for which facilities in the region are designed and replacement of those aircraft with other aircraft.
- The advent of new, small, high-performance, low-cost jet aircraft that are expected to be strong competitors in the air taxi market will likely require airport improvements.
- A new service that will provide transportation between communities in the region with ground-effect vessels has been proposed. This new mode of transportation will employ a vessel, regulated by the U.S. Coast Guard, that flies on an air cushion near the surface of the water at high-speed. The new vessels may compete directly with air taxi services because service would be similar at much lower costs. When ground-effect vessels will enter service in Southeast Alaska is uncertain.
- Pressure to make changes to the EAS program will likely continue at the national level. Because much of the service provided to communities in the region is subsidized through EAS, any substantial change in the program may have ramifications in Southeast Alaska.

## **Intelligent Transportation Systems**

Within the transportation field, emerging methods to improve and enhance transportation systems through the use of computer and communication technologies are termed Intelligent Transportation Systems (ITS). Typically these applications are aimed at high-volume transportation settings such as urban highway and transit systems; however, there are opportunities to implement ITS in Southeast Alaska.

The following ITS technologies are available, and their limited use could be expanded:

- Full-time digital communications network linking AMHS reservations, operations center, vessels, and terminals to provide “real-time” vessel arrival and departure times, seating and car space availability, and other operational information to employees, management, and the public
- Weather information systems for roadways designed to provide both “travel advisories” to the public and optimal snow and ice removal timing to maintenance forces
- Real-time information about transportation system availability provided through one or more of the following techniques: Internet access; public

message signs on highways, vessels or terminals; local radio broadcasts; and personal digital assistants

- Automated or semi-automated vehicle weighing, sizing, and ticketing applications for vehicles entering terminal sites

## **Basis for Cost Estimates**

The descriptions of elements discussed in this chapter include planning-level estimates of construction, including ferry acquisition and maintenance costs. These estimates are preliminary in nature, and provide a basis for comparing the relative magnitude of the different elements. Because they are computed with the use of 2003 dollars, over time it would be appropriate to adjust for inflation. The origin of estimates varies by element. For example, two elements include projects for which an EIS is being prepared; the estimates for these elements are based on that work.

For new highways, planning-level estimates were compiled by applying a per mile figure for design and construction costs of a new paved road. This figure varies based on terrain considerations and roadway type, from a base of \$2.3 million to a high of \$4.8 million per mile. Estimates were also increased if a special feature (such as a tunnel) was present. A similar approach was used for estimating maintenance costs. In identifying roadway type, the emphasis was on completing the through connection, as opposed to building a high-speed highway. Thus, the new routes would seem narrow because of the width of unpaved shoulders and would be posted for a moderate travel speed (either 30 or 35 miles per hour).

For new ferries and terminals, planning-level estimates are based on recent experience in the acquisition of new ferries and the construction of marine facilities. Firm cost estimates can be prepared based on the recent construction of the *Fairweather*, *Prince of Wales*, *Lituya*, *Oral Freeman* (Ketchikan airport ferry), and *Kennicott*. The estimates of vessel construction and operations and maintenance costs have been updated by a naval architect to reflect current market conditions. With respect to terminal costs, the department has extensive experience with the construction and modification of marine facilities. The most recent terminal work consists of replacement at Valdez and new stern berths in Ketchikan and Juneau.



## VII. WHAT DOES THE SATP ACCOMPLISH?

### How New Links Broaden the Transportation Network

The improvement package that makes up the SATP brings a comprehensive transportation network to Southeast Alaska. This network ties together the communities of the region, and links them to the continental highway system and population centers in Alaska and the Lower 48. It shortens travel times, reduces out-of-pocket costs to travelers, and supports economic development. With respect to state financing, it adds facilities that are financed in a similar manner on a statewide basis and lessens the need to supplement (with state general funds) revenues from AMHS operations.

Table 8 identifies changes for basic transportation links. It lists improvements, changes, and assessments of transportation benefits expected to be gained by the end of the planning horizon (2025). The table includes six points of origin – communities in the region with a population of 2,000 or more. All of these communities receive “mainline” service from AMHS today, and five of the six have daily jet service to Anchorage and Seattle. Haines, the only community without jet service, can be reached by the continental highway system.

Generally speaking, the precise locations (specific sites) of many elements (and their components) have not yet been determined. This status complicates the identification of changes for origin and destination pairs. Planning of several elements has progressed to the point for which an EIS is being prepared, but alternatives have not been selected. Similarly, a separate

study is being pursued concerning ferry service in the Northern Panhandle. Consequently, the information in the table is general and does not anticipate a specific outcome from the studies in progress. Specifics for these origin and destination pairs will be available when the studies are completed.



**Table 8. Effects of Basic Transportation Links**

<b>Transportation Link</b>	<b>Improvement</b>	<b>Change</b>	<b>Assessment</b>
<b>Links from Ketchikan</b>			
To Ketchikan International Airport	Bridge and road to Ketchikan International Airport	Highway connection to Airport	Direct highway connection removes schedule, cost, and capacity restrictions of airport shuttle ferry system. A highway will improve emergency response to the airport.
To Wrangell	Revillagigedo Highway	Mostly land highway, with longer (Bradfield Canal) and shorter (Behm Canal) ferry crossings	Daily surface trips possible; more choice about when to schedule; improved connectivity
To Prince of Wales Island	Additional IFA Ferry	More frequent summer ferry service to Hollis	More choice about when to travel; improved capacity and connectivity
To Metlakatla	Walden Point Road	Shortens length of ferry link	Increased frequency of daily surface trips; improved connectivity
To Canada	Revillagigedo Highway and Bradfield Road	Land highway with one short ferry crossing (Behm Canal)	Biggest change is addition of a new highway connection to the continental highway system for long-distance travel.
<b>Links from Wrangell</b>			
To Prince of Wales	IFA Northern Ferry	Adds direct ferry link between Wrangell and Coffman Cove	Biggest change is addition of new daily ferry connection between Wrangell and Prince of Wales Island in summer with reduced service in winter.
To Petersburg	IFA Northern Ferry	More frequent and regular ferry service between Wrangell and Petersburg	Daily ferry service in summer with reduced service in winter
To Canada	Mid-Region Access (Bradfield Road)	New continental highway connection with one ferry crossing (Bradfield Canal)	Biggest change is improved regional access to continental highway system.



**Table 8. Effects of Basic Transportation Links**

Transportation Link	Improvement	Change	Assessment
<b>Links from Petersburg</b>			
To Kake	Pending completion of NPTS	Pending completion of NPTS	Pending completion of NPTS
To Sitka	Baranof Highway	Extends highway across Baranof Island to shorten ferry access to Sitka	Improves ferry connections to Juneau and Petersburg and reduces transportation cost
	Fast Ferry Connection	Makes daily ferry connection to Petersburg more viable	Improves viability of regular fast and frequent ferry service
To Juneau	Direct fast ferry connections to Juneau and to Juneau via Sitka	Adds intra-region fast ferry connection	Surface travel time reduced to less than 5 hours; daily trips most of the year
To Canada	Mid-Region Access, supplemented by mainline and IFA connections to Wrangell	New continental highway connection with two ferry crossings (Sumner Strait and Bradfield Canal)	Biggest change is improved access to continental highway system with regular ferry connections at lower cost.
<b>Links from Sitka</b>			
To Juneau	Baranof Highway	Extension of road across Baranof Island with shorter ferry link.	Improves efficiency and reduces user cost; makes reliable daily trips available most of the year
To Kake and Port Alexander	Baranof Highway and Northern Panhandle ferry service	Shortens ferry connection to Kake. Type of ferry service pending completion of NPTS	Pending completion of NPTS
To Angoon, Tenakee Springs, and Hoonah	Baranof Highway and Northern Panhandle ferry service	Shortens ferry connection to Angoon. Type of ferry service pending completion of NPTS	Pending completion of NPTS
To Canada	Baranof Highway, then ferry links to Juneau Access and Mid-Region Access projects	Shortens length of ferry links required to reach the continental highway system; increased trips via Juneau and Petersburg	Biggest change is improved access to the continental highway system via two new highway options.
<b>Links from Juneau</b>			
To Haines and Skagway	Juneau – Skagway Road	Depends on the outcome of Juneau Access EIS	Increased mobility at lower cost resulting in increased traffic between communities
To Hoonah, Tenakee Springs, and Angoon	Pending completion of NPTS	Pending completion of NPTS	Pending completion of NPTS
To Kake, Pelican, and Gustavus	Pending completion of NPTS	Pending completion of NPTS	Pending completion of NPTS

**Table 8. Effects of Basic Transportation Links**

Transportation Link	Improvement	Change	Assessment
To Canada	Juneau – Skagway Road	To the north, depends on the outcome of Juneau Access EIS (to the south, Mid-Region Access is closer than Prince Rupert)	Biggest change is improved access to the continental highway, providing increased mobility at lower cost.
To Whittier with stops at Yakutat	<i>Kennicott</i> deployment	More sailings between these points	Provides “All-Alaska” surface link to Juneau and links Whittier to Prince Rupert , British Columbia
<b>Links from Haines</b>			
To Skagway	Juneau – Skagway Road with shuttle ferry	Regular frequent shuttle ferry connection	Increased mobility with frequent service and lower-cost shuttle ferry connection
To Canada	Haines Highway and Juneau – Skagway Road with shuttle ferry	Shorter route to Whitehorse, south and eastern Canada, and Lower 48 via Skagway and the Klondike Highway	Shortens travel time and reduces cost to Whitehorse and points east

NPTS = Northern Panhandle Transportation Study

## Benefit-Cost Analysis

As part of the SATP update, the planning team refined an analytical model from the earlier work. This enhanced model includes an integrated benefit-cost evaluation tool. Revenue generation and other user benefit analyses can be prepared with this tool for use in comparing new systems to those previously examined. The model predicts regional intercommunity travel based on a comparative evaluation of alternative modal choices, trip



frequency, fare, and travel time. This model was calibrated for 2002 travel demands and fare structure.

A benefit-cost model was developed to evaluate the relative merits of user benefits and system costs among alternative intercommunity transportation systems within Southeast Alaska. Key outputs from this process involve the relationship of marginal user benefits to marginal costs. The model was derived using the principles of least-cost planning

(LCP). The LCP process consists of choosing the lowest-cost method for providing a given level of service (that is, benefit). Conceptually, it is possible to configure alternative transportation systems that combine air, automobile, and ferry modes that generate roughly equivalent levels of benefits in a region such as Southeast Alaska. The alternative that generates this base level of benefits at the least cost represents the optimal system.

The travel forecast model was developed to perform the following:

- Assess the growth in demand for transportation (people and vehicles) over time by major travel corridor and estimate origin and destination patterns of travel throughout the region
- Evaluate intercommunity travel demand by mode (ferry, air, roadway) for competing modes based on travel time and cost parameters for any system alternative
- Assess the potential for induced travel demand generated by new transportation facilities and services
- Evaluate the impacts of system supply constraints on travel demand

To estimate nonresident travel demands, existing tourist markets were increased by a factor of 1.03 applied each year of the planning period. This factor was derived from forecasts of tourism employment by the Institute of Social and Economic Research (University of Alaska Anchorage).

Additional factors representing latent demand were included, consistent with the demand assumptions and findings of other department studies. For Lynn Canal, latent demand factors were derived through a calibration of annualized demand projections (documented in the Juneau Access EIS for the year 2010) with projections estimated by using the integrated model. On route segments north of Juneau, the latent demand factors are 3.6 times the estimates from the integrated model. On all trips originating from or destined for Lynn Canal, the latent demand factors are 1.2 times the estimates. For mainline service to Bellingham, recent marketing efforts indicate that a doubling of service on this tourism corridor would double demand (indicating a large latent demand).<sup>1</sup> For the SATP update, a latent demand factor of 1.5 was applied.

The following user benefits represent the majority of user benefits of any system alternative and are the focus of the quantitative analysis within the benefit-cost examination:

- Changes in travel and waiting time
- Changes in trip frequency

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<sup>1</sup> Source: *AMHS Marketing and Pricing Study*, McDowell Group, 2000.

- Changes in out-of-pocket costs
- Changes in total number of trips made

In the analysis, benefits associated with changes in accessibility and economic development were not quantified, but are closely correlated with these user benefits and can be indexed to changes in user benefits. However, these benefits were not measured for the SATP.

These specific elements were used in the detailed evaluation of travel demand and benefit-cost analyses:

- Changes that each system would provide in travel time and service frequency
- Capital, maintenance, and operating costs

Tables 9 and 10 summarize the results of the detailed evaluation (provided in Appendix B). Benefit and cost in terms of net present value summaries were prepared for the same time periods and horizon years as used in the travel demand forecasts. Capital costs are summarized by time period; operating costs and revenue projections are shown in the horizon year in current (2003) dollars. Roadway travel demand forecasts for Juneau Access are from the EIS effort. Estimates of roadway travel demand for Mid-Region Access are based on earlier SATP development, and include resource extraction trips and increased latent demand to proximate communities, including Wrangell, Petersburg, Prince of Wales Island, and Ketchikan.

Restructuring the existing ferry service level by 2010, coupled with the assumption that revenue will cover costs on new short ferry links (such as Haines - Skagway and Bradfield Canal), appears to result in zero operating subsidy (excluding AMHS management, administration, marketing, and other indirect overhead costs). Fares on new links to Bradfield Canal are based on a \$20 one-way vehicle fare per trip segment. Fares on all other routes were held constant with current levels. With respect to demand, fast vehicle ferries will accommodate demand on an annual average basis. During summer months, there may be a shortage of capacity on peak days for the busiest ferry links. The ability to meet peak day demand in every instance is not possible because of the excess capacity that would result much of the year; however, the SATP standard is to provide capacity that meets at least 80 percent of peak month demand for a given ferry link. With respect to this standard, potential shortages of capacity need to be evaluated in future updates of the SATP.

**Table 9. Cost-Benefit Evaluation Summary**

Implementation Period	Capital Costs for Period (\$ millions)	Annual Operating Costs to ADOT&PF <sup>1</sup> (Horizon Year)	Annual AMHS Ridership (Horizon Year)	Annual Revenue <sup>2</sup> (Horizon Year)	Annual ADOT&PF Subsidy <sup>3</sup> (in Horizon Year) (\$ millions)	ADT Forecasts on Juneau – Skagway Road (AADT/Peak Summer ADT)	ADT Forecasts on Bradford Road at Hwy. 37 (AADT/Peak Summer ADT)
<b>Existing System<sup>4</sup></b>							
2004-2010	92	75	299,500	38	(37)	-	-
2011-2015	124	75	320,300	40	(35)	-	-
2016-2020	172	75	341,400	41	(34)	-	-
2021-2025	146	75	362,900	43	(32)	-	-
<b>SATP Addendum 1<sup>5</sup></b>							
2004-2010	435	69	496,900	52	(17)	-	-
2011-2015	195	69	533,200	55	(14)	-	-
2016-2020	129	69	570,000	58	(11)	-	-
2021-2025	143	69	607,400	61	(8)	-	-
<b>2004 SATP Update<sup>6</sup></b>							
2004-2010	881	59	456,800	47	(12)	500/900	-
2011-2015	513	63	541,200	52	(11)	600/1,075	100/270
2016-2020	395	65	595,300	56	(9)	650/1,200	110/280
2021-2025	226	69	648,800	58	(11)	725/1,325	130/320

AADT = Annual average daily traffic ADT = Average daily traffic

Notes: Dollars reflect 2003 values.

Horizon year is the year at the end of the implementation period tested. The horizon years are 2010, 2015, 2020, and 2025, as shown in Column 1.

These benefit-cost summaries assumed a shuttle-road system between Juneau and Sitka in 2021 and 2025. These plan components are no longer included in the SATP 2025 priorities, but could move up as funding become available.

<sup>1</sup> Operating costs include annual AMHS management, administration, marketing costs, and Southeast Region operating and maintenance costs. Included are the operating costs of all new roadways, terminal facilities, and vessels. Existing highway, airport and harbor facilities are not included.

<sup>2</sup> Fares are held constant. Ferry revenue is adjusted to account for IFA-generated revenue between POWI and other ports as well as loss in Lynn Canal ferry revenue north of Juneau.

<sup>3</sup> A negative subsidy figure represents continued expenditures that exceed revenues.

<sup>4</sup> Existing system scenario does not include fast vehicle ferry in the 2003 fleet; it only includes existing vessels operating consistent with current schedules/levels of service.

<sup>5</sup> The SATP Addendum 1 scenario assumes continued reliance on mainline ferries from Prince Rupert and Bellingham, overlaid with fast vehicle ferry service. It also assumes a ferry solution in Lynn Canal consistent with the previous SATP plan and updates with forecast adjustments consistent with Juneau Access EIS.

<sup>6</sup> The 2004 SATP update scenario assumes reduced mainline service down to only three mainline ferries, consisting of the *Columbia*, *Kennicott*, and either the *Malaspina* or *Matanuska*. In Southeast and latent demand estimates from AMHS marketing study; a road solution in Lynn Canal consistent with the most current EIS by 2010 with forecast adjustments consistent with the Juneau Access EIS; the Sitka Access Road by 2015; and the Bradford Road by 2015 with forecast adjustments for Bradford Road consistent with original SATP plan.

**Table 10. Comparison of Regional Transportation Alternative Scenarios: Summary of Net Present Value Benefits and Costs, 2005-2025**

Net Present Value in Millions of Dollars (2003 \$)										
Scenario	Total Costs <sup>1</sup>	Revenues	Costs Less Revenues	Change in Net Costs from Adopted Plan	Change in Consumer Surplus <sup>2</sup>	User Benefits of Fares Eliminated in Lynn Canal	User Costs in Additional Driving on New Roadways	Change in Net User Benefits from Adopted Plan	Total Net Present Value: Benefits Minus Costs	
<b>Present Value of Total Costs and Benefits</b>										
2001 SATP Addendum 1	(1,608)	804	(804)							
2004 SATP	(2,398)	846	(1,552)	(748)	907	108	(58)	957	209	
2004 SATP (without implementation packages) <sup>3</sup>	(1,972)	697	(1,275)	(471)	615	108	(30)	693	222	
<b>Present Value of Operating and Maintenance Costs and Benefits<sup>4</sup></b>										
2001 SATP Addendum 1	(939)	804	(135)							
2004 SATP	(867)	846	(21)	114	907	108	(58)	957	1,071	
2004 SATP (without implementation packages) <sup>3</sup>	(986)	697	(289)	(154)	615	108	(30)	693	539	

<sup>1</sup> Includes all capital, operation, and maintenance costs of roadway and ferry systems. This benefit-cost analysis assumes that the Juneau Access Road is not part of the baseline system; therefore, all user benefits associated with the roadway are included in the 2004 SATP scenarios.

<sup>2</sup> Change in consumer surplus includes value of time in travel, waiting, and service frequency.

<sup>3</sup> The implementation packages are four major road components: Baranof Road, Bradfield Road, Fools Inlet Road, and Revillagigedo Road.

<sup>4</sup> The lower portion of this table excludes capital cost from the total costs column.

Table 11 shows summer service levels for AMHS routes. Traffic demand, cost, and revenue are key determinants for the provision and level of ferry service over the regional highway system.

**Table 11. Summer Service Levels in Relation to Cost and Revenue**

AMHS Route	Summer Service Level Determination
<b>Existing Capabilities</b>	
Mainline service (Bellingham)	Based on revenue generation. Each year, revenues need to exceed the costs of vessel operations.
<i>Kennicott</i> (within Southeast)	Determined in the context of ensuring surface links between ports of call through a combination of fast-vehicle ferries, mainline service, IFA, and <i>Kennicott</i> sailings.
<i>Kennicott</i> (across the Gulf of Alaska)	Based on revenue generation. Each year, revenues need to exceed the costs of vessel operations.
<i>Lituya</i> (Metlakatla)	Up to two round-trips a day; increase possible if supported by revenues or following completion of Walden Point Road.
<i>Fairweather</i> (post Juneau Access)	Determined in the context of ensuring surface links between Sitka, and Petersburg through a combination of fast-vehicle ferries, mainline service, and <i>Kennicott</i> sailings.
<b>New Segments: Long-Term Vision</b>	
Behm Canal (Revillagigedo Highway)	Multiple trips a day; increase in service hours possible if supported by revenues.
Bradfield Canal (Mid-Region Access)	Three round-trips a day; increase possible if supported by revenues.
Possible <sup>1</sup> shuttle service between Wrangell and South Mitkof	Service level of two round-trips a day; increase possible if supported by revenues.
Between Petersburg and Sitka	Up to one round-trip a day if supported by revenues; minimum of two trips a week.
Between Petersburg and Juneau	One round-trip a day; increasing demand to be evaluated in future updates and may require added capacity.
Between Sitka and Juneau	Up to one round-trip a day if supported by revenues; minimum of four trips a week.
Northern Panhandle	Pending completion of Northern Panhandle Transportation Study; anticipated that revenues will not cover all costs.
Between Haines and Skagway	Determined following the outcome of Juneau Access.
<b>Interim Services</b>	
Between Ketchikan and Prince Rupert	One round-trip a day if supported by travel demand and revenue generation.
Between Ketchikan and South Mitkof	One round-trip a day if supported by travel demand and revenue generation.
North of Juneau	Combination of fast vehicle ferry and mainline service pending completion of Juneau Access EIS and project development
Between Haines and Skagway	Three round-trips a day if supported by revenues.

<sup>1</sup> Assumes a land highway connection is not pursued.





## **VIII. DISTRIBUTION OF COSTS**

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How large is the annual amount of state general funds required to operate and maintain state transportation facilities and services serving Southeast Alaska? The focus of the state's effort in Southeast Alaska is to maintain a highway system, 11 state airports, 33 public seaplane floats, and a ferry system that bridges extensive gaps in the region's highway system.

Table 12 presents the annual cost to the state over the last three years to operate and maintain AMHS services, the highway system, airports and harbors<sup>1</sup> to support movement of people, vehicles, and freight through Southeast Alaska and between the region and surrounding regions. The table shows the AMHS revenues earned from operating the Southeast ferries in 2001, 2002, and 2003. Substantial fuel tax, operator license fees, and vehicle license fees that are levied on the highway user go directly into the state's general fund. These fees and taxes are not shown in Table 12 because no breakout of these revenues on a regional basis is prepared.

There is continuing pressure to reduce the state's operating budget, including the level of general fund support for AMHS. Revenues fall far short of covering the full costs of AMHS operations. The remaining costs must be provided from the state's general fund. Revenues earned during the summer from visitors traveling in and through Southeast Alaska help to support winter ferry service on which residents rely. Garnering ongoing support for the ferry system is challenging because less than half of the state's legislative districts are directly served by AMHS, although AMHS provides the only direct surface connection between Interior Alaska, Southeast Alaska, and the Lower 48. Compounding this challenge, the AMHS services included in the 1999 SATP assumed lower costs and a higher level of revenue income from these services than has been achieved. Consequently, additional appropriations have been required to support the current level of AMHS service.

Table 13 shows expenditures, appropriations, and revenues for 2003 and 2004 fiscal years, and identifies the most recent shortfalls for AMHS statewide.

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<sup>1</sup> Very little of the state's operation and maintenance effort is devoted to harbor facilities because most of the region's harbor facilities are maintained by municipalities or are in the process of being transferred to municipalities.

**Table 12. State Expenditures and Revenues for Southeast Alaska Transportation, State Fiscal Years 2001-2003**

Southeast Alaska Transportation Cost Component	Annual Cost (\$)			Modal Expense (%)
	2001	2002	2003	
<b>State Transportation Expenses for AMHS Operations and Maintenance — Southeast Alaska</b>				
Vessels Operations	57,467,215	56,362,246	61,997,256	
Shore Operations	2,976,431	2,894,289	2,931,847	
Administration, Engineering, and Overhaul	4,951,336	5,063,116	5,313,099	
<b>Total Expense, including Administration</b>	<b>65,394,982</b>	<b>64,321,653</b>	<b>70,242,202</b>	
<b>Southeast Alaska Revenue</b>	<b>32,658,000</b>	<b>34,541,000</b>	<b>36,376,000</b>	
<b>Southeast Alaska AMHS Expense less Revenue</b>	<b>32,736,982</b>	<b>29,780,653</b>	<b>33,866,202</b>	<b>78.2</b>
<b>State Transportation Expenses for Operations and Maintenance of Other Modes— Southeast Alaska</b>				
Highways, including Administration	6,924,794	7,650,824	7,290,872	16.8
Airports, including Administration	2,611,729	2,238,436	2,097,133	4.9
Harbors, including Administration	51,874	30,878	38,730	0.1
<b>Southeast Alaska Transportation All Modes</b>	<b>42,325,379</b>	<b>39,700,791</b>	<b>43,292,937</b>	<b>100.0</b>

Source: ADOT&PF

Note: The above figures exclude support services and some miscellaneous expenses. Although the total for expenditures is greater, the data present a fair picture of state transportation expense by mode.

**Table 13. AMHS Expenditures, Appropriations, and Revenues, 2003 and 2004**

AMHS Funding	Fiscal Year 2003 (\$000)	Fiscal Year 2004 (\$000)
Expenditures	84,675	85,701
Revenues	41,162	43,000
General fund contribution	40,492	40,000
Shortfall covered by AMHS Fund	3,021	5,701
<b>State funding requirement</b>	<b>43,513</b>	<b>45,701</b>

Notes:

The AMHS fund balance declined during these two years, but was sufficient to mitigate the shortfalls that occurred in Fiscal Year 2003 and Fiscal Year 2004.

The dollar amounts have been revised since preparation of the draft SATP to reflect updated data.

The cost to maintain and operate the ferry system has been increasing because of several factors, including previous deferment of vessel modernization, maintenance, and refurbishment. Because it is labor intensive, the operation of large vessels on a round-the-clock basis is expensive. Over time, new regulatory requirements (which require vessel upgrades) and changes to labor contracts (which dictate wages, benefits, and operating conditions) contribute to higher costs. Most recently, rising fuel prices have driven up operating costs. Increases in AMHS operating costs are difficult for the state to finance because these costs are paid for through higher fares, appropriations of state general funds, or both. All revenues from AMHS operations are retained in the Alaska Marine Highway System Fund. Appropriations of state general funds to supplement revenue income are subject to annual legislative approval.

The good news is that pending federal legislation may increase the level of federal funding for transportation improvements above previous levels. An increase would provide the opportunity to use federal funds for strategic capital investments in transportation facilities in Southeast Alaska. These strategic capital investments could reduce the region's transportation operation and maintenance costs over the long term. Tables 14, 15, and 16 summarize the capital expenditures required to implement the SATP.

**Table 14. Summary of Cost Estimates for SATP 20-Year Plan Components**

Funding Source	Description	Recommended Interim Typical Section or Vessel (capacity)	Estimated Interim Average Speed (mph)	Segment Length Statute (miles)	Ferry Service (round-trips per day)	Total Estimated Capital Cost (\$ 000)	Total Annual Estimated M&O Cost (\$ 000)
STIP	Sitka Access EIS and North Panhandle Transportation Study					6,000	
STIP & FEMRK	Mid-Region Access (Bradfield & Fools Inlet ) EIS					8,000	
STIP	Ketchikan Access EIS					6,000	
STIP	Auke Bay Terminal Modifications					7,000	10
STIP	South Mitkof Hwy. Reconstruction: Crystal Lake to Blind Slough	Island Collector	35	6.99		10,920	57
STIP	South Mitkof Terminal					14,500	10
IFA	Ferry Link: IFA Ferry, South Mitkof/Wrangell/Coffman Cove	IFA (30)	17.3	53.0	1	17,000	1,276
STIP	Coffman Cove Terminal					9,400	25
STIP	Fast Vehicle Ferry Auke Bay to Petersburg	FVF (35)	36.8	144	1	40,000	4,561
STIP	Fast Vehicle Ferry: South Mitkof to Ketchikan	FVF (35)	36.8	101.2	1	40,000	4,561
STIP	Saxman Terminal					7,500	10
BIA	Walden Point Road, built and maintained by BIA	Minor Rural Arterial	45	14.29		N/A	N/A
STIP	Annette Bay Terminal					7,000	10
FH	Coffman Cove Road: North Prince of Wales Island Road Intersection to Coffman Cove	Island Collector	30	17.52		18,400	144
FEMRK	Southern Gateway Shuttle Ferry: Ketchikan to Prince Rupert	FVF (50)	25.3	109.3	1	67,000	N/A
STIP	Angoon Ferry Terminal Improvements					6,500	25
STIP	Two small day ferry boats to replace <i>LeConte</i>	Dayboat	17.3	N/A		20,000	2,500
FEMRK	Gustavus Ferry Terminal					11,000	50
STIP	Haines Ferry Terminal Improvements					7,000	10
STIP	Ferry Link: Haines/Katzeihin Ferry	<i>Aurora</i>		6.5	9	5,000	2,900
FEMRK	Katzeihin Ferry Terminal					15,700	10
FEMRK	Lynn Canal Road (Echo Cove to Skagway)	Arterial	45	68		265,000	1,500
FEMRK	Gravina Island Access	Arterial	35			230,000	100
	<b>2010 Total</b>					<b>809,220</b>	
STIP & FEMRK	Rodman Bay Road	Island Arterial	35	48.83		148,950	869
STIP	Rodman Bay Terminal					12,000	135
STIP	Ferry Link: South Mitkof to Wrangell Shuttle Ferry	IFA (30)	17.3	13.8	1	17,000	1,276
FEMRK	Fools Inlet Road	Island Collector	30	22.08		50,830	181

**Table 14. Summary of Cost Estimates for SATP 20-Year Plan Components**

Funding Source	Description	Recommended Interim Typical Section or Vessel (capacity)	Estimated Interim Average Speed (mph)	Segment Length Statute (miles)	Ferry Service (round-trips per day)	Total Estimated Capital Cost (\$ 000)	Total Annual Estimated M&O Cost (\$ 000)
STIP	Fools Inlet Terminal					7,000	10
STIP	Bradfield Canal Ferry	Modified <i>LeConte</i> (35)	17.3	17.3	5	25,000	1,692
STIP	Bradfield Terminal					7,000	10
FEMRK	Bradfield Road: Duck Point Ferry Terminal to Border	Minor Rural Collector	30	32.15		250,000	366
FEMRK	Road: Duck Point Ferry Terminal to Behm Canal Terminal	Island Collector	30	19.53		50,400	160
FEMRK	Point Lees Terminal					7,000	10
STIP	Ferry Link: Behm Canal Ferry	Double end (20)	13.8	2.3	9	8,000	864
FEMRK	Claude Point Terminal					7,000	10
FEMRK	Revilagigedo Highway: Behm Canal to George Inlet	Island Arterial	35	43.5		130,180	387
FH	Harriet Hunt Lake Road: George Inlet to Harriet Hunt Lake	Island Arterial	35	10.98		30,300	98
FH	Harriet Hunt Lake/Ward Lake Road Upgrade	Island Arterial	35	6		10,350	53
FEMRK	Mainline Ferry ( <i>Columbia</i> Replacement)	<i>Columbia</i>	19.9	N/A	0.14	120,000	N/A
FEMRK	Mainline Ferry ( <i>Malaspina</i> Replacement)	<i>Malaspina</i>	19.0	N/A	0.14	120,000	N/A
IFA	Ferry: Add 2nd IFA Ferry between Hollis & Ketchikan	IFA (30)	17.3	42.5	1	17,000	1,276
IFA	North Tongass Ferry Terminal					7,000	75
	<b>2025 Total</b>					<b>1,843,930</b>	

= Environmental impact statement

= Ferry terminal

= Road

= Ferry boat

= Total

BIA = Bureau of Indian Affairs

M&O = Maintenance and operations

FEMRK = Federal Earmark

N/A = Not available

FH = Forest Highway Program

STIP = Statewide Transportation Improvement Program

IFA = Inter-Island Ferry Authority

Notes:

All costs are preliminary and include design costs. Values are expressed in current (2003) dollars.

Island collector indicates a rural road expected to have lower traffic volumes.

Island arterial indicates a road reachable from a large community that is expected to have higher traffic volumes.

**Table 15. Summary of Capital Cost Estimates for Types of SATP Component**

<b>Component Type and Funding Source</b>	<b>Total Estimated Capital Cost (\$ 000)</b>
<b>Highway Program</b>	
Statewide Transportation Improvement Program (STIP)	73,870
Federal Earmark (FEMRK)	1,082,410
Forest Highway Program (FH)	59,050
Bureau of Indian Affairs (BIA)	N/A
<b>Total 20-year Highway Program</b>	<b>1,215,330</b>
<b>Ferry Program</b>	
<b>Ferries</b>	
Statewide Transportation Improvement Program (STIP)	155,000
Federal Earmark (FEMRK)	307,000
Inter-island Ferry Authority (IFA)	34,000
<b>Total ferries</b>	<b>496,000</b>
<b>Terminals</b>	
Statewide Transportation Improvement Program (STIP)	80,900
Federal Earmark (FEMRK)	40,700
Inter-island Ferry Authority (IFA)	11,000
<b>Total terminals</b>	<b>122,900</b>
<b>Total 20-year Ferry Program</b>	<b>628,600</b>
<b>Total 20-year SATP Program</b>	<b>1,843,930</b>

**Table 16. Summary of Capital Cost Estimates by Funding Source**

<b>Funding Source</b>	<b>Total Estimated Capital Cost (\$ 000)</b>
Statewide Transportation Improvement Program (STIP)	309,770
Federal Earmark (FEMRK)	1,430,110
Forest Highway Program (FH)	59,050
Bureau of Indian Affairs (BIA)	Not available
Inter-island Ferry Authority (IFA)	45,000
<b>Total 20-year plan program</b>	<b>1,843,930</b>



## IX. WHAT COMES NEXT?

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### Studies and Construction Address Transportation Needs

Opportunities for shaping development of transportation-related development abound. As described in Chapter II, the SATP provides an overall framework for state involvement in the regional transportation system during the next 20 years; more detailed planning will follow. Specific studies play important roles in identifying needs and the approaches for implementing improvements. Two current planning efforts are the Northern Panhandle Transportation Study and Southeast Alaska Aviation System Plan Study.

The Northern Panhandle Transportation Study is expected to be complete in 2005. This study will address the best way to transport people, vehicles, and goods to and from eight outlying communities, and will consider air and ferry alternatives. Either AMHS or a contractor could provide ferry services. The objective is to enable community residents to get to Petersburg, Sitka, or Juneau in a single day of travel and to have such an opportunity at least once a week.

AMHS currently operates ferry service to Angoon, Hoonah, Kake, Pelican, and Tenakee Springs with the *LeConte*. The community of Gustavus receives commercial passenger ferry service during the summer months in conjunction with tourist sightseeing operations. The communities of Elfin Cove and Port Alexander are only served by air taxi operators. Less costly ferry service that includes vehicle-hauling capability is recommended for additional study, along with other options. Although more frequent service is desired by many communities, the primary constraint is the level of service that can be supported by traffic demand.

*Although more frequent ferry service is desired by many communities, the primary constraint is the level of service that can be supported by traffic demand.*

The Southeast Alaska Aviation System Plan Study will be initiated in 2005 to evaluate the regional air transportation system, forecast regional air traffic demand, and assess the need for improvement to aviation facilities in the region. A number of changes will have to be accommodated at individual airports; the challenge is to know when and to what extent the changes will affect facilities in the region. Thus, the study will consist of forecasting the demand for freight and passenger service in and through the region, identifying probable changes in the regional aircraft fleet, and analyzing the impact from potential changes in the EAS program and other financial and

regulatory trends. The primary study product is determination of the unmet needs that will need to be addressed by 2025.

Airport planning and development are carried out continuously to ensure that facilities are in place to meet demand. A primary purpose of a system plan is to quantify demand in a regional context, as opposed to for an individual airport. Some issues the study will address are listed in Chapter VI, on page 63 .

## **Project Activity**

Major SATP road components that are representative of projects to be developed in the next 20 years are discussed below.

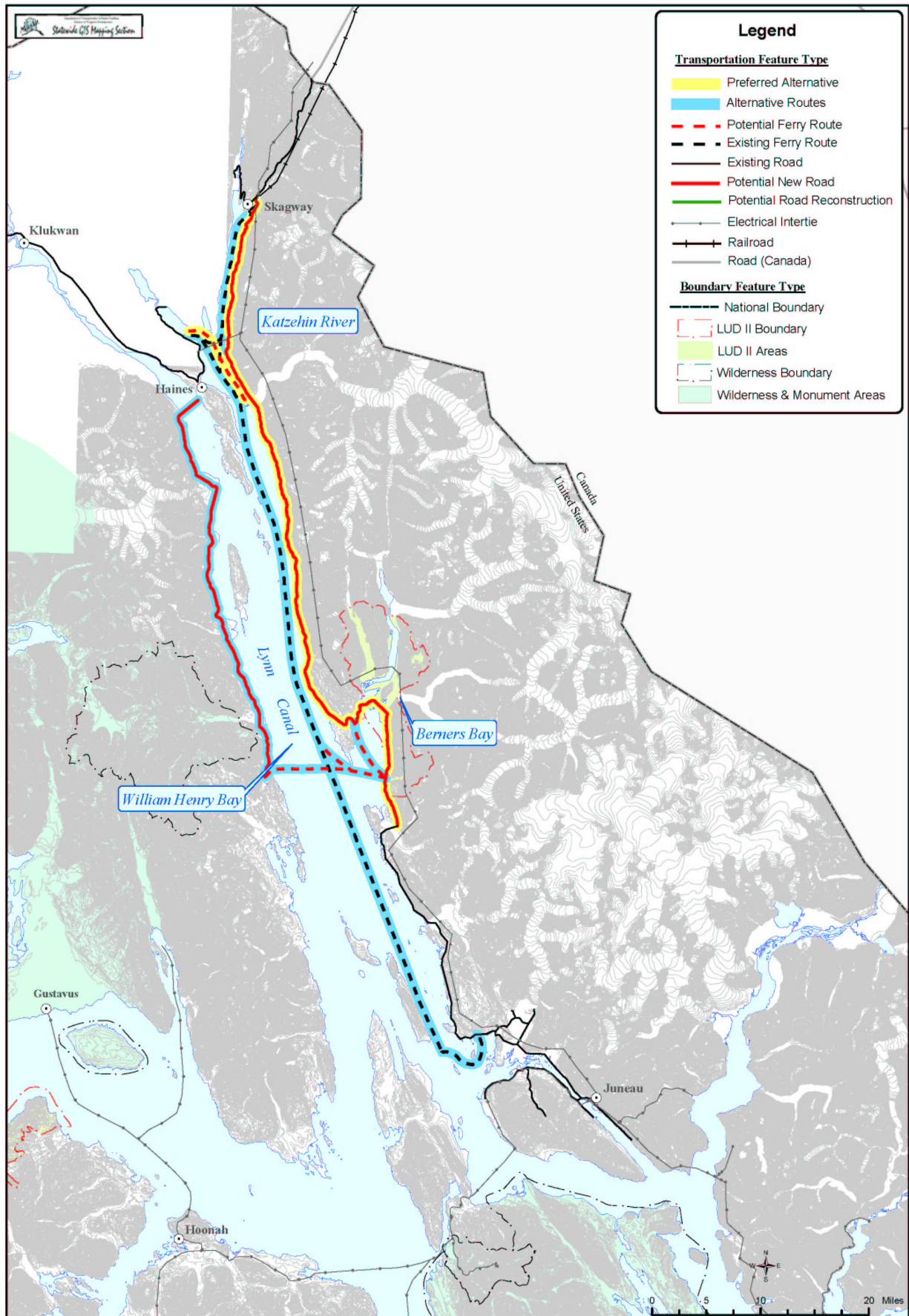
### ***Juneau Access EIS***

The planned Juneau-Skagway Road, shown on Map 11, includes a short shuttle ferry connection to Haines. This project would provide significant transportation benefit to the regional and state transportation systems. The road link will reduce state maintenance and operations cost, reduce user costs significantly, and benefit the overall regional and state economy.

The department is currently preparing a supplemental draft EIS for the Juneau Access Improvements Project. The supplemental draft EIS will update the information in the 1997 draft EIS and evaluate an expanded range of alternatives. Map 11 depicts the preferred alternative and the road and marine alternative routes under consideration. The supplemental draft EIS is expected to be available in fall 2004. Although the State of Alaska identified the East Lynn Canal Highway as its preferred alternative in 2000, all reasonable alternatives will be fully evaluated, and no final decision will be made until after the public has had the opportunity to comment on the supplemental draft EIS. A Record of Decision is anticipated in 2005. If another alternative is selected, the SATP would need to be amended to reflect the change.

The road, if selected, can be completed in 2009 if funding is available. Construction could begin in 2005 at both ends and several points in the middle. Some segments would be completed under design-build contracts; other segments would be designed and bid as construction contracts. This construction scenario requires the design and construction funding be available as follows: \$126 million in Federal Fiscal Year (FFY) 2005, \$139 million in FFY 2006, and any remaining funding in FFY 2007 and FFY 2008. Delays in funding would delay project completion.

## Map 11 : Juneau Access EIS Reasonable Alternative Routes



The total estimated cost of the EIS is \$11 million, and this funding is already obligated. The cost estimate to complete final design and construct the preferred alternative follows:

Construction of 68 miles of roadway	\$265 million
Construction of Katzechin Ferry Terminal	\$15.7 million
Refurbish the <i>Aurora</i>	\$5 million
Total	\$285.7 million

### ***Gravina Access EIS***

This project is almost through the environmental phase. The preferred alternative is a high bridge to the east side of Pennock Island and a low bridge from the west side. The final EIS will be complete in 2004 with a Record of Decision and design to follow. Construction could be complete in a few years, pending funding. The estimated costs are as follows:

Total EIS	\$9 million
Design	\$15 million
Construction	\$206 million

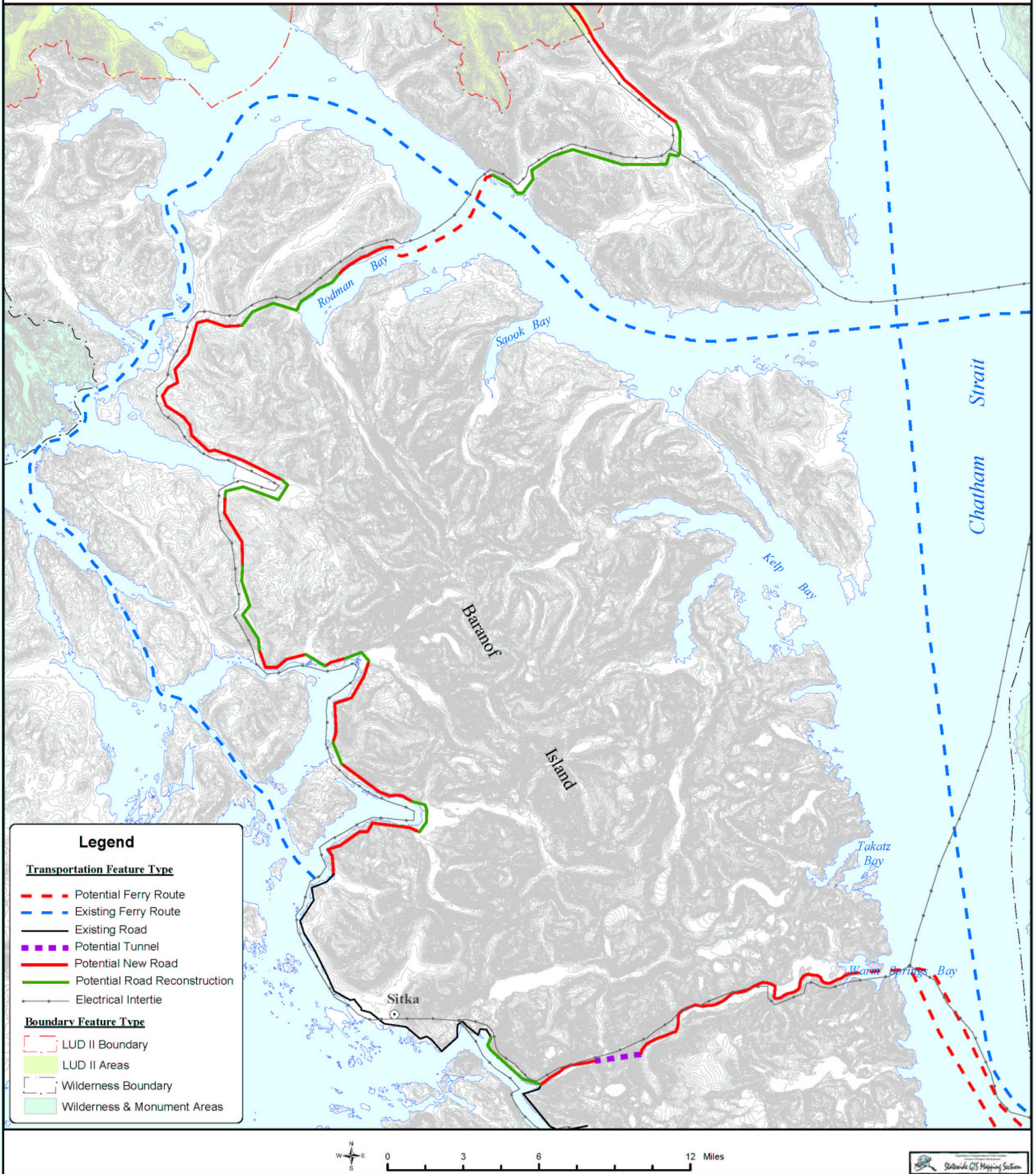
### ***Sitka Access EIS***

Access and the frequency of ferry service would be greatly improved by the addition of a road to the east side of Baranof Island where a new ferry terminal would be located. The single most difficult aspect of scheduling ferry service to Sitka is the limitation imposed by strong tidal currents through the Sergius Narrows in Peril Strait. The fast vehicle ferries should be able to navigate the Narrows through most tidal currents while conventional ferries must wait for limited periods of slack water. The Narrows creates costly delays and scheduling problems in serving Sitka with mainline ferries. The distance between Sitka and Petersburg makes point-to-point day shuttle ferry service marginal even for a Fairweather class ferry. A ferry terminal on the Chatham Strait side of the Narrows would solve these problems and make ferry service to Sitka much more efficient. See Map 12.

The department initiated an EIS in 2004 to study Sitka Access. The EIS will evaluate the proposed roads from Sitka to Rodman Bay and Warm Springs Bay and other potential land and marine alternatives. The study will conduct a more detailed assessment of the two principal road alternatives across Baranof Island and any other alternatives, including routes across the mountains to alternative ferry terminal locations, such as Kelp Bay, and corresponding potential ferry service alternatives. A detailed assessment of principal road/ferry and ferry service options will be modeled and evaluated to compare the benefits and costs of each alternative for improving mobility and efficiency of transportation access connecting Sitka, Juneau, Petersburg, the Northern Panhandle, and the rest of the world.



## Map 12 : Sitka Access / Across Baranof Highway



The initial phase will take the project through preliminary NEPA scoping to develop the Purpose and Need and identify the alternatives that satisfy NEPA requirements. The estimated costs are as follows:

Total EIS	\$6 million
Construction for Rodman Bay Road and Terminal	\$160 million
Construction for Warm Springs Bay Road and Terminal	\$250 million

**Mid-Region Access EIS**

This plan recommends that Congress be presented with an EIS that includes both the Bradfield and Stikine corridors and the transportation components necessary to connect Petersburg and Wrangell via either route to the continental highway system in Canada. Some parties may take the position that the Stikine LeConte Wilderness Area precludes Alaska from developing a road connection between Petersburg and Wrangell and the Cassiar Highway in Canada. The department believes, however, that the benefits of the Stikine route are so great that the benefits and costs should be identified and compared to those of the Bradfield route. Assuming that benefits versus costs of the Stikine significantly outweigh those for the Bradfield route, the results could be used to convince both Canada and Congress to support development of the Stikine route. The existing treaty and agreements with Canada should favor this proposal.

The FHWA, Western Federal Lands Division, Vancouver, Washington, is conducting preliminary reconnaissance work on the Bradfield route, and the department has conducted preliminary reconnaissance work on the road to Fools Inlet on Wrangell Island.

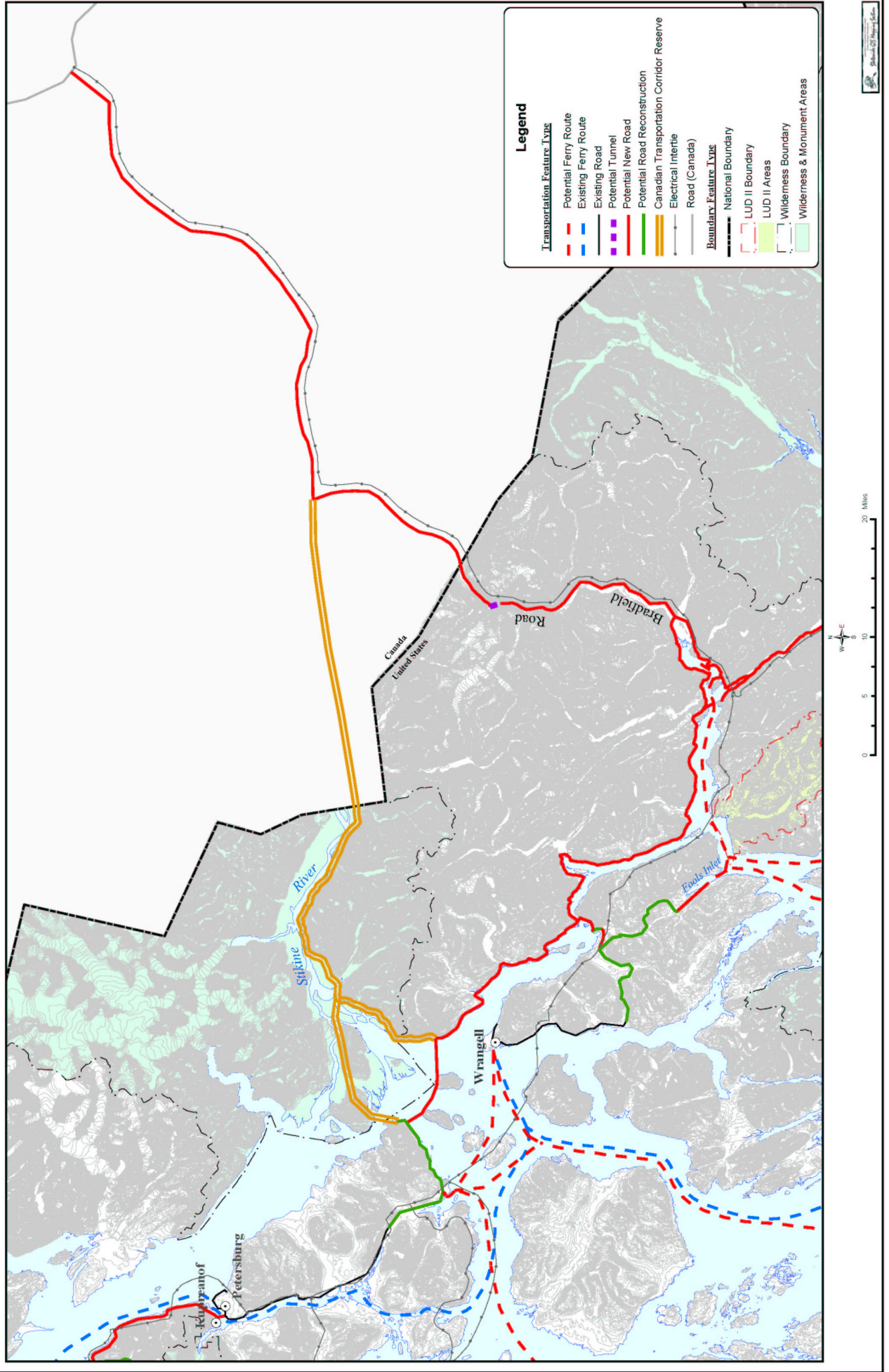
Map 13 shows potential and existing routes. The estimated costs for the project are as follows:

Total EIS	\$6 million to \$10 million
Construction for Bradfield Road from head of Bradfield Canal to the border	\$220 million
Construction for 8-mile extension of Bradfield Road to Duck Point and ferry terminal	\$37 million
Construction for 22-mile extension of Zimovia Highway and ferry terminal at Fools Inlet	\$57 million

The Fools Inlet connection would be required to provide an efficient northbound connection to a Bradfield Road connection to Canada, a connection to a proposed shuttle ferry-road connection to Ketchikan, or both.



Map 13 : Mid-Region Access / Bradfield Highway





The ultimate objective would be to someday connect Petersburg and Wrangell by road and bridges with a direct highway connection to the continental highway system in Canada.

No current cost estimate is available for the Stikine Highway alternative.

### ***Ketchikan Access EIS***

This project would connect Ketchikan to the proposed Mid-Region Access Road to Canada and to Wrangell and Petersburg, as shown on Map 14. The road would run north from Ketchikan to the Behm Canal near Bell Island, and a shuttle ferry crossing would be supplied. The road would then run across the east end of the Cleveland Peninsula to the Bradfield Canal (or still farther to Stikine River if that mid-region access route is selected.) A highway up the middle of Revillagigedo Island to Behm Canal would benefit Ketchikan residents by providing access to developable land on the rest of the island and to the island's recreational, timber, and mineral resources. In addition, it would add capacity to the regional transportation system. This EIS would be coordinated with the Mid-Region Access EIS, but the proposed action would offer independent utility, regardless of the conclusion of the Mid-Region Access EIS. Three to six years would be needed to complete the EIS.

This project is independent of the Mid-Region Access (discussed above). Although one does not have to be built for the other to be built, the projects would clearly benefit one another if both were built. A resident of Ketchikan could drive out to the continental road system with only a single 20-minute ferry crossing of Behm Canal, probably on a vessel much like the double-enders serving the Ketchikan International Airport - Tongass Narrows crossing.

The estimated costs are as follows:

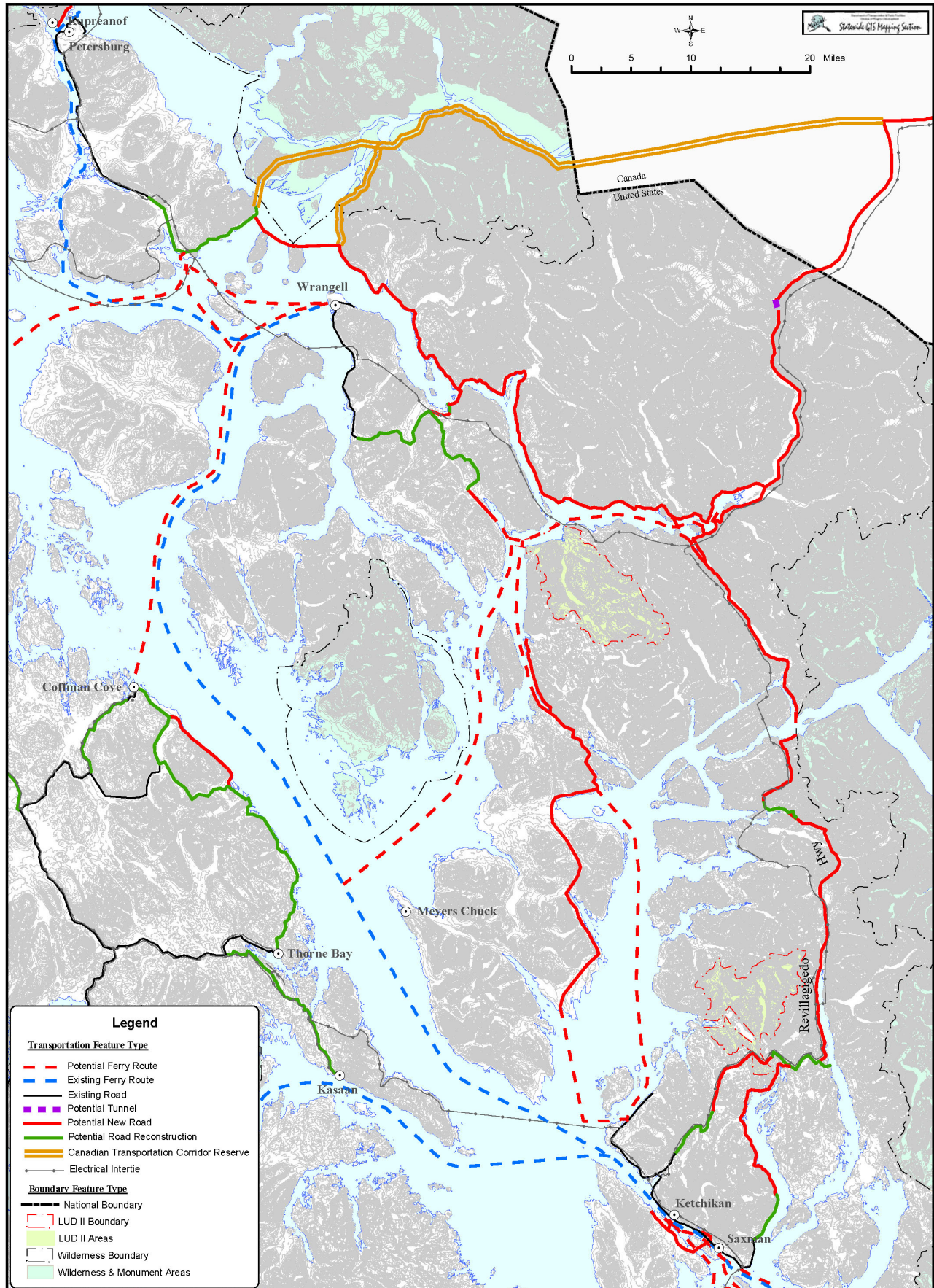
Total EIS	\$6 million
Construction for Revillagigedo Highway to Duck Point, including Behm Canal ferry crossing	\$265 million

The ultimate objective would be to someday connect Ketchikan to Petersburg and Wrangell by road and bridges with a direct highway connection to the continental highway system in Canada.

## **Procurement of Additional Fast Ferries**

The SATP planning team reviewed the fast ferry concept and reaffirms the need to acquire two additional Fairweather class ferries for service in Southeast. The two additional vessels will run between Juneau and

## Map 14 : Ketchikan Access / Revillagigedo Highway





Petersburg and between Petersburg and Ketchikan. A third, larger fast ferry, the Southern Gateway Shuttle, needs to be acquired for service between Ketchikan and Prince Rupert. These three ferries will replace an existing mainline ferry between Prince Rupert and Juneau, in addition to the mainline ferry capacity requirements replaced by Juneau Access improvements. Subject to due diligence on the performance of the

*Fairweather* (see the next section), funding for these two fast vehicle ferries would be obligated. The third fast vehicle ferry must be obligated by May 2005 to secure delivery in time for the 2006 summer season. The fourth fast vehicle ferry must be obligated by March 2006 to secure delivery in time for the 2007 summer season. Delivery of these fast ferries will enable the department to provide more frequent, regular, and convenient service between communities in Southeast Alaska in both winter and summer at less overall cost.

The *M/V Matanuska* would provide dayboat service between Ketchikan and Prince Rupert until the new Southern Gateway Shuttle ferry is designed and constructed to replace her in 2008, available funding permitting.

Deployment of the fast vehicle ferries will require the terminal modifications described below.

### ***Auke Bay Ferry Terminal — Homeport***

The existing terminal at Auke Bay has two side-load berths and a homeport stern berth for a fast vehicle ferry. The existing side berth layouts are floating transfer bridges with fixed dolphins. They accommodate the mainline ferries, but will need modifications to accommodate a fast ferry. The existing side berth (east or west) will need to be modified to accommodate the third fast vehicle ferry as a homeport. The required modifications are as follows:

- Addition of two all-tide dolphins to provide overnight moorage
- Modification or addition of new catwalks as required to access the new dolphins and existing dolphins
- Adjustment of the ballast in the bridge support float and modification of the apron lift beam to prevent interference with the vessel sponson (a projective structure similar to a car bumper)
- Addition of utilities (fuel, sewer, water, and electric) requested by AMHS



The improvements will require environmental documentation and a U.S. Army Corps of Engineers permit. Geotechnical work for new dolphins may be needed. The project will be within existing right-of-way.

### ***Petersburg Ferry Terminal Mooring Improvements***

The existing terminal in Petersburg is a side-load facility with a floating transfer bridge and fixed dolphins. The layout accommodates the mainline ferries, but will need modifications to accommodate a fast ferry. The required modifications are as follows:

- Addition of a dolphin to provide a more secure moorage for the stern of the fast vehicle ferry. The existing dolphin could be expanded to provide more fendering area, but would need to be raised for the higher freeboard of the fast vehicle ferry.
- Two new catwalks for access to the new dolphin and existing dolphins
- Raising the fender panels on three existing dolphins
- Adjustment of the ballast in the bridge support float and modification of the apron lift beam to prevent interference with the vessel sponson
- Addition of any utilities (fuel, sewer, water, electric) requested by AMHS

This project will require environmental documentation and a U.S. Army Corps of Engineers permit. Geotechnical investigations may be required for a new dolphin. The project will be within existing right-of-way.

### ***Ketchikan Berth 3 Modifications — Homeport***

The existing terminal at Ketchikan has two side-load berths (Berths 1 and 2) and a stern berth (Berth 3), which is now being used by the IFA vessel *Prince of Wales* and the *Lituya*. The existing stern berth is a floating berth, but will need to be modified to accommodate the fourth fast vehicle ferry as a homeport. The following additions will be required:

- One all-tide bow dolphin
- New, taller steel fender panels for the existing fendering float
- Electrical shore power and fueling capability. Water and sewer utilities exist at this facility.

The project will require environmental documentation and a U.S. Army Corps of Engineers permit. It may require geotechnical work for a new dolphin. The project will be within existing right-of-way.

### ***Petersburg South Mitkof Island Terminal***

The South Mitkof Terminal is scheduled for a Phase 1 construction to accommodate the IFA vessel *Stikine*. Phase 2 of this project will consist of

improvements to accommodate the fourth fast vehicle ferry. Phase 2 requires the following improvements:

- Three additional dolphins to allow the IFA vessel to slide forward when its schedule conflicts with the fast vehicle ferry schedule
- Expansion of terminal building and staging area
- Addition of utilities (fuel, sewer, water, electric) requested by AMHS

Environmental documents and permits, geotechnical investigations, and right-of-way requirements are expected to be addressed under Phase 1.

### ***Wrangell Ferry Terminal***

Modifications are proposed to the Wrangell Terminal to provide scheduling flexibility to meet special and seasonal needs for fast vehicle ferry service. The existing facility in Wrangell is a side-load berth with a transfer bridge that has a lift system and fixed dolphins. The facility accommodates mainline vessels, both port and starboard, but will require modifications for the fourth fast vehicle ferry. The required modifications are as follows:

- Raising the fender panels on three existing mooring structures
- Addition of utilities (fuel, sewer, water, electric) requested by AMHS

This project will require a nationwide permit and will be within existing right-of-way.

### ***Prince Rupert Ferry Terminal***

The City of Prince Rupert needs to refurbish the existing AMHS terminal. Additional modifications required to accommodate the proposed Southern Gateway Shuttle ferry cannot be determined until the new ferry has been designed. Existing terminal facilities would be considered during vessel design.

## **Due Diligence for Fast Ferry Implementation**

Concern was expressed about whether the proposed construction of two additional Fairweather class fast passenger and vehicle ferries is prudent before gaining experience from operation of the *M/V Fairweather*. The Alaska Legislature withheld authorization to receive and expend federal funding receipts until an investment plan was submitted confirming that the planned acquisition of two additional Fairweather class ferries will contribute to creating an efficient and effective transportation system for coastal Alaska.

After significant due diligence, the department is confident that the *Fairweather* has been designed and constructed consistent with vessel technology proven around the world and that the intended applications in

the AMHS route structure and the routes selected are appropriate for this type of ferry.

To ensure that the fast vehicle ferries are well suited to the conditions in Alaska, no further orders will be placed until operating experience is obtained during both summer and winter operating conditions. Should the state decide not to purchase additional fast vehicle ferries, existing ferries would be maintained until they are replaced with more conventional vessels and road segments. Although the SATP proposes specific road routes be developed and specific types of ferries be acquired, this conceptualization does not preclude substitution of a different road route or vessel if subsequent information directs the state to a better transportation alternative to accomplish the same objectives.

### **Procurement of Additional IFA Ferries**

IFA intends to initiate construction of the new ferry *M/V Stikine* in 2004. Contracts will be awarded in early 2005 to construct new ferry terminals at South Mitkof and Coffman Cove. Minor improvements will be made to the Wrangell Ferry Terminal to facilitate mooring. All improvements will be completed by spring 2006. Beginning in 2006, the *Stikine* will operate between Coffman Cove, Wrangell, and Petersburg. IFA anticipates an additional ferry will be needed in the future for summer service between Hollis and Ketchikan.





## **X. UPDATES AND ANTICIPATED PROGRESS BY 2010**

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Several amendments or updates to the SATP are anticipated within the next two years. The Northern Panhandle Transportations Study, expected to be completed in 2005, will provide recommendations on how best to transport people, vehicles, and goods to and from the communities of Angoon, Elfin Cove, Gustavus, Hoonah, Kake, Pelican, Port Alexander, and Tenakee Springs. The Southeast Alaska Aviation System Plan Study will be initiated in 2004 to evaluate the regional air transportation system, forecast regional air traffic demand, and clarify the need to improve the region's aviation facilities. The results of both efforts will be incorporated into the SATP in 2005.

The planning and development studies identified below (and described on pages 84 to 90) support major projects that are scheduled for completion during the next six years:

- Completion of the Gravina Access EIS and obtaining the Record of Decision on the preferred alternative are anticipated in 2004.
- The Juneau Access EIS is scheduled to be completed in 2004, and the Record of Decision on the preferred alternative is anticipated in early 2005.
- The Sitka Access EIS, which will examine road alternatives across Baranof Island, will be initiated in 2004.
- The Mid-Region Access EIS is anticipated to be initiated in 2004–2005.
- The Ketchikan Access EIS is expected to be initiated in 2005–2006.

The full benefits and cost of these important road links should be known by the conclusion of these studies. The studies will either confirm SATP recommendations or identify the need for SATP amendments and updates.

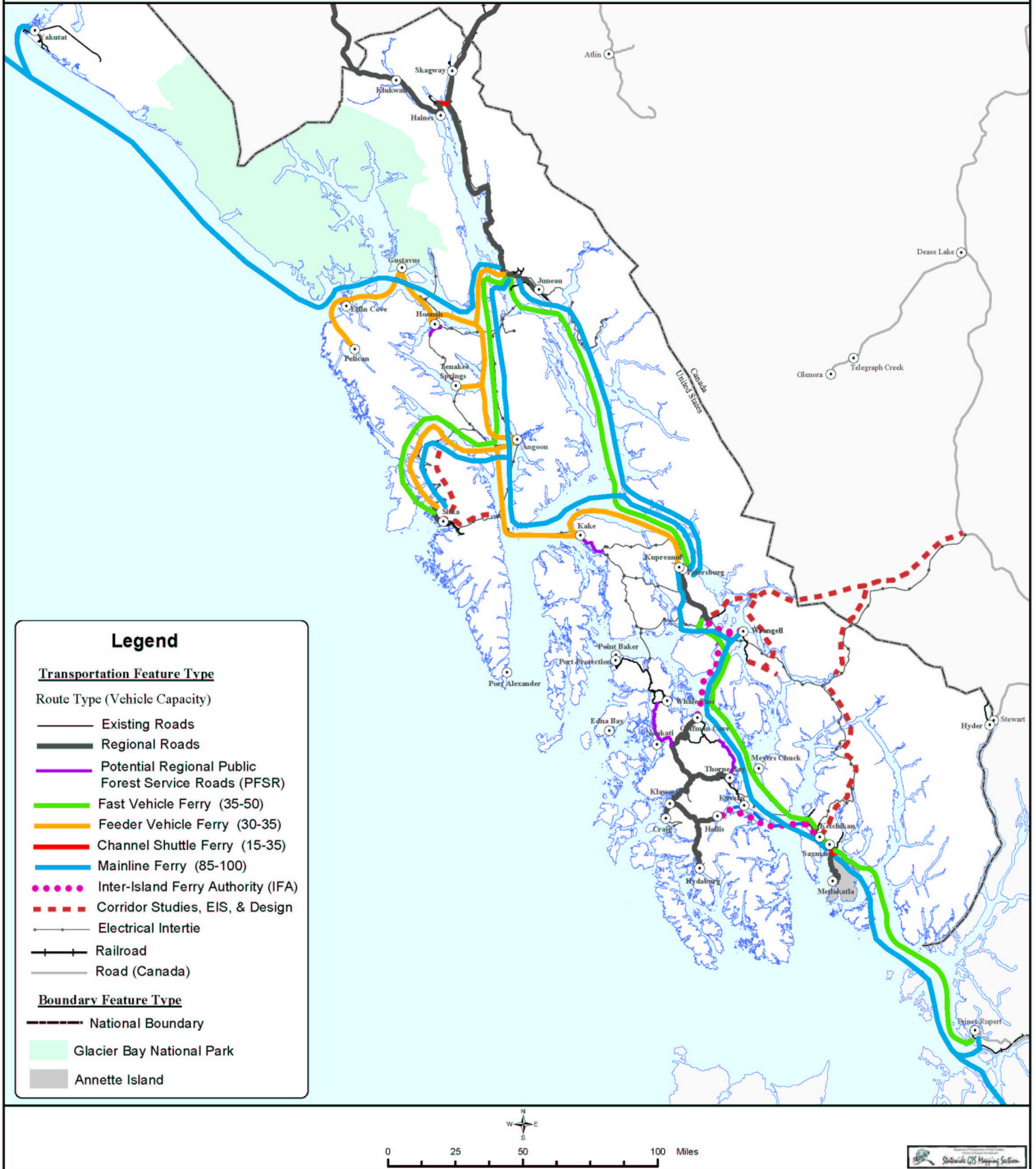
Anticipated progress in transportation improvements by 2010 includes construction of the Metlakatla Access (Walden Point Road currently under construction) (page 59), Gravina Access, (pages 49 and 86), and Juneau Access (pages 47 and 84 ) projects. Finishing construction of these projects assumes completion of Records of Decision and availability of necessary funding

In addition, reconstruction of the Coffman Cove Road (page 50) should be completed by 2008. Surface improvements will continue to be made to the existing regional road system during the next six years throughout the region. The Forest Service plans to reconstruct several segments of the

Alaska Forest Highway System, including North Prince of Wales Island Highway from Coffman Cove Road to El Capitan and Sandy Beach Road on Prince of Wales Island, Kake to Seal Point, and Hoonah to Spirit Camp.

Map 15 depicts the progress toward implementation of the SATP that is expected by 2010. It shows the completed Gravina Bridge, Walden Point Road, and the Juneau-Skagway Highway, as well as new road routes for which planning and environmental studies are anticipated to be completed by 2010. Other map features include the routes of ferry service and distinctions between mainline ferry routes, fast vehicle ferry links, feeder ferry service, and IFA ferry routes.

# Map 15 Anticipated Progress by 2010





## **XI. WHAT HAPPENS IF FUNDING IS NOT AVAILABLE?**

The improvements recommended for construction during the next 20 years are estimated to cost approximately \$1.8 billion. Although the 2004 SATP shifts the emphasis of the previous SATP from improving ferry service to reducing reliance on the ferry system by constructing key road segments, the key goal remains one of improving mobility and the overall efficiency of the Southeast Alaska transportation system. Both approaches are incorporated into the 2004 SATP. Replacing aged and obsolete ferries with more efficient ferries will improve overall system efficiency; however, much greater system efficiencies and mobility improvements can be achieved by construction of several key highway segments coupled with compatible fleet replacement.

Initial regional priorities are construction of the bridge from Ketchikan to Gravina Island, the road between Juneau and Skagway, Walden Point Road, and a number of new ferries, including several fast vehicle ferries. New ferries are already supplementing and replacing older ferries to improve system operations. Key to accomplishing a major reduction in system operations and maintenance expense will be construction of the road to Juneau, replacement of older ferries with more efficient vessels and reliance on Bellingham runs for most mainline sailings. The priorities of the other key road projects will be determined by the findings of the detailed environmental studies, which are yet to be accomplished.

On a timely basis, full funding of each component is required to realize the full range of anticipated benefits (in service) and cost savings (to both the traveler and the state). To the degree that adequate funding is delayed, the anticipated incremental benefits and cost savings will not be realized. Project deferments caused by funding delays will not mean that the region will operate without a viable transportation system. Instead, without the projects, the region will have to invest more funds in maintaining existing infrastructure and obsolete ferries and make do with a less efficient system.



The SATP is an ambitious plan with big goals. By adding new highway links to the system, the SATP aims to remove the fundamental impediment to making long-distance movements in Southeast Alaska. Premises of the plan include not accepting existing impediments as givens and rejecting the approach of lowered expectations. The SATP

emphasizes what is needed now – highway links serving the population of the region.

The 2004 SATP offers both change and continuity with respect to the previous plan. Change is achieved by recommending construction of key roads to reduce reliance on ferries by either shortening or eliminating ferry connections to increase mobility and reduce cost to the traveler and the state. Continuity is achieved by continuing a program of adding new ferries and retiring old ferries to provide a viable, more efficient, and more flexible ferry fleet.

Despite its capital funding requirements, the SATP directs the region toward implementation of a transportation system that emphasizes increased mobility at lower cost. In a rural setting, the primary factor limiting efficiency gains in transportation is the availability of funding for the construction of new facilities. The benefits from efficiency gains are substantial. In Southeast Alaska, inefficiency is obvious because there are major restrictions at the system level in terms of mobility and cost. The SATP calls for implementing the most efficient system that can be afforded at any point in time. A more efficient transportation system supports greater economic activity and a higher standard of living.



## XII. PUBLIC COMMENT AND RESPONSE SUMMARY

This chapter summarizes comments received from January 5 through February 23, 2004, and provides corresponding responses. In response to circulation of the *Southeast Alaska Transportation Plan, Draft Update for Public Review, January 2004*, comments were received on six major topics. Summaries are generally by subtopic, and do not indicate community origin. Comments were submitted through letters, e-mails, completed questionnaires, and the SATP website, as well as verbally and in writing during public meetings held in 18 communities throughout the region.

Comment	Response
<b>1. SATP — PROCESS AND CONTENT</b>	
<b>1.1 General Comments</b>	
<p>Concern was expressed that the current update is unnecessary, rushed, and arbitrary in its analysis and use of data. From this perspective, there have not been changes in the conditions or assumptions underlying the 1999 SATP that warrant its reconsideration.</p>	<p>The timing of the update effort is based both on changes in assumptions and conditions and the importance of currency for SATP recommendations. The plan text has been substantially revised so that changes in assumptions and conditions are clearly identified, and the presentation of data and accompanying analysis has been improved. State regulations require review and update of the Alaska Statewide Transportation Plan and its component area plans every five years. Because the previous SATP was dated March 1999, an update effort was due.</p>
<p>Concern was expressed that the draft was inherently biased toward roads, and that data and analysis are selectively presented so that the choice of land highways is a foregone conclusion.</p>	<p>The project team conducted an open and balanced technical process that assessed, without bias, different kinds of transportation solutions for specific corridors. There were problems with presentation in the draft, but these problems did not poison the process nor corrupt the technical analysis. Presentation problems are now corrected.</p>
<p>Concern was expressed that time for public input/debate was too short and public comment would not influence the final outcome. Other comments complemented and encouraged the SATP update work and process.</p>	<p>The comment period was 45 days in length, which is the standard period used by the department for public review of planning documents. There was adequate time during the review period to receive comments from those who wanted to provide them. In response to public comment, deployment recommendations for the <i>Kennicott</i> have changed and the plan text has been substantially revised.</p>
<p>Comments requested that the process include government-to-government meetings with Indian tribes, as called for in the Millennium Agreement.</p>	<p>The update process included active coordination with representatives designated by Indian tribes. Two meetings with tribal representatives were held in Juneau. The draft SATP update was presented to the Sitka Tribe of Alaska in response to the Tribe's request.</p>

Comment	Response
<b>1.2 Goals and Objectives</b>	
<p>Concern was expressed that the draft SATP placed too much emphasis on the goal of reducing costs to the state, to the exclusion of other goals related to an effective transportation system for people and freight in the region.</p>	<p>Boosting mobility and improving efficiency are the primary emphases of the SATP. Greater mobility is indicated by more trips being made, and more flexibility with respect to when those trips are completed. Efficiency improvements are frequently measured in economic terms, such as costs to the traveler and to the state. Although cost to the state is easier to measure than other indicators, it is only one of many indicators of what the SATP aims to accomplish.</p>
<p>Comments requested that meeting of freight needs be highlighted as a goal of the plan.</p>	<p>The SATP envisions an improved, integrated regional transportation system that accommodates all movements without the need for measures specific to freight haulers. Individual components would be designed so that standard highway loads could make the trip without restrictions. With respect to air movements, state facilities are already in place for the landing and loading of cargo aircraft.</p>
<b>1.3 Analysis</b>	
<p>Broaden the analysis: Comments requested that the SATP demonstrate that it is comprehensive. It was suggested that a more comprehensive plan would include a more detailed analysis of the relationship between transportation and the visitor industry, an analysis of air transportation, inclusion of programs (Trails and Recreational Access for Alaskans [TRAAK] and SEATrails) for trails, and more detailed consideration of bicyclists and pedestrians.</p>	<p>The elements of the SATP provide a surface transportation system for the region that is integrated with the aviation mode and accommodates future travel demand from the visitor industry, including bicyclists and pedestrians. The revised text does a better job of explaining the broad scope of the plan. Planners recognize the timeliness of a system-level study of the state role in Southeast Alaska aviation. A study on this topic is funded and will begin shortly.</p>
<p>Economic Impact on Communities: Comments requested that economic impacts on communities be analyzed and presented. (Examples include communities that may be affected by AMHS job loss or changes in ferry service and communities that may benefit from new transportation projects or approaches.)</p>	<p>A primary aim of regional transportation planning is to ensure that state involvement in transportation is synchronized with community growth and development. However, the state is not proposing to turn its transportation involvement into the primary economic engine for a community. Previously, impacts for one community were explored in detail as part of the Petersburg Transportation Impact Analysis. In general, specific identification and analysis of economic impacts on communities takes place during the environmental phase of project development.</p>
<p>Freight Analysis: Comments requested a much more detailed analysis of the impacts on freight, including effects on cost, capacity, reliability, time in transit, and frequency. Comments focused on shipments of seafood; some stated that mainline ferry service is more suitable than a road system or fast vehicle ferry for shipping seafood, with others favoring new shipping alternatives.</p>	<p>The planning team gave thorough consideration to freight concerns, and recognizes that the transportation of seafood products to market is critical to the regional economy. SATP elements provide adequate capacity for current and future freight movements on all state highway and ferry links.</p>
<p>Travel Times: Comments requested more information about travel times (passenger and freight) under the proposed transportation scenarios.</p>	<p>Comparisons of travel time have been included in Appendix B.</p>

Comment	Response
<p>Project Costs: Comments requested more detailed and accurate information on costs, including the costs to users of the proposed road/shuttle ferry system (especially for those traveling without vehicles), and capital and maintenance costs for roads and ferries. A clearer listing of the detailed costs for the proposed projects was requested.</p>	<p>The economic analysis in the SATP looks at the regional system as a whole. It uses general measures of costs, and does not attempt to achieve absolute precision in individual cost estimates. Planners are confident that the relative accuracy of the cost estimates is consistent across modes.</p> <p>The economic analysis does not record every discrete change in cost to the traveler. The changes proposed have different effects on different types of travelers, and direct costs for passengers (when traveling without a vehicle) could be higher on some segments. In the economic analysis, benefits to the majority of travelers outweigh the increased costs that some travelers (passengers) would experience.</p> <p>Development of more detailed cost data takes place during the environmental phase of project development, frequently in the form of an EA or EIS. Public concerns about cost impacts are identified, quantified, and analyzed prior to final selection of an alternative.</p>
<p>Ferry versus Road Cost Comparison: Concern focused on the text that indicated that ferries cost \$2.00 per vehicle mile while roads cost one cent per vehicle mile. Criticisms included that costs could not be compared meaningfully between the two systems, the appropriate test was passenger miles instead of vehicle miles, the full costs of roads were not considered (planning, permitting, construction, maintenance, reconstruction, and indirect costs of managing use and ensuring safety), and road use counts used in the analysis were unrealistically high for a road system in Southeast Alaska.</p>	<p>This comparison has been removed. It was considered to be too general and simplistic to speak to the many choices available and the likely variation between solutions in different corridors. Planners continue to seek a good way to summarize differences between ferries and land highways in terms of maintenance and operations costs, revenues, and other considerations. A breakout of the relevant cost and revenue data necessary to make an accurate comparison is not readily available; however, available traffic and cost data do support this general comparison.</p> <p>On the other hand, it is clear to planners that the choice of land highways is more cost-effective from the perspective of the user and annual operations and maintenance cost as traffic volumes increase from an overall cost perspective, including capital cost. Variables such as feasibility, traffic levels, construction costs, and environmental impacts require detailed analysis during project development in the context of the environmental process. The environmental process is the appropriate forum for reaching a firm conclusion for a specific transportation project.</p>

Comment	Response
<b>1.4 Implementation</b>	
<p>Schedule: Comments requested a detailed schedule for plan implementation, including a more detailed schedule for when projects would be completed and when ferries would be retired and new ferries would come on-line.</p>	<p>Because the timing of project completion and changes in ferry operations are subject to numerous factors, it is inappropriate for the SATP to provide a more detailed schedule. Clearly, elements of the plan cannot proceed until they are funded. The SATP is a direction-setting document, but it does not commit funding to projects, nor account for scheduling changes as projects are advanced. This role is played by the Statewide Transportation Improvement Program (STIP). Those interested in a more detailed schedule would want to participate in formulation of and modifications to the STIP, which is circulated to the public prior to adoption.</p>
<p>Financing: Comments questioned whether the SATP is supported by a sound economic analysis and realistic funding scenarios for construction and for maintenance and operation costs. Reliance on federal earmarks for major projects was noted with concern by some, who suggested that alternative funding mechanisms be explored. The SATP must be able to respond to changing economic realities if original economic assumptions are not met.</p>	<p>The program of transportation improvements in the SATP is ambitious, and consequently funding requirements are substantial. The primary factor governing progress will be the availability of federal earmarks for major projects. Recent years have seen substantial increases in the amount and availability of federal earmarks. If this trend continues, enough funding will be available to complete major elements of the SATP. If there is a shortfall in federal earmarks, and other funding sources are not found, then the next update of the SATP will need to revise the program and identify an updated funding strategy.</p>
<p>Contingency Plans: Comments suggested that the SATP include alternative or contingency plans in the event that major elements of the program cannot be accomplished (for example, because of lack of capital funding or because of permitting constraints).</p>	<p>See previous response. Although delays would be unfortunate, elements can proceed on varying timelines without disrupting the integrity of the overall plan.</p>
<p>Public Forest Service Road Program: Comments requested that this program be identified as a legislative proposal and not relied upon, unless it has been authorized at the national level and adequately funded.</p>	<p>The SATP includes the Public Forest Service Road Program for coordination purposes, but critical elements of the plan do not rely upon it. This initiative of the Forest Service has the potential to substantially benefit Alaska. The text has been revised, and remaining references do not imply that the program has been authorized and funded.</p>
<p>NEPA Coordination: The Forest Service expressed concern that the presentation of some proposed roads did not provide an adequate basis for establishing Purpose and Need at the start of the environmental process.</p>	<p>The SATP includes a description of Purpose and Need (Chapter V), and there is a clear basis for commencing the environmental process for state-initiated plan elements. This comment refers to corridors (such as Kake to Petersburg) that are shown as proposed regional Public Forest Service Roads. The SATP has identified essential transportation and utility corridors and requests that the Forest Service preserve, improve, connect, and maintain forest roads within the corridors designated essential by the state. The state believes that sufficient need has been identified to commence the environmental process. The environmental process will expand and refine the purpose and need for each individual project.</p>

Comment	Response
<p>Pioneer Roads: The Forest Service suggested consideration of initial, interim construction of a much narrower road, followed by upgrades over time that bring the route up to modern highway standards.</p>	<p>This approach was considered and rejected by the planning team. With respect to state highways, public expectations are high. Once basic road access is in place, many members of the public drive as if the route can support higher travel speeds, even when it is obvious that this choice is inappropriate. The SATP calls for basic, “no frills” state highways, but not without key elements such as two travel lanes, a paved surface, and several feet of roadside width that can be used when needed for evasive maneuvers and emergency parking.</p>
<p><b>2. ALASKA MARINE HIGHWAY SYSTEM</b></p>	
<p><b>2.1 Fast Vehicle Ferries</b></p>	
<p>More than 120 comments were received about the use of fast vehicle ferries. Approximately 60 percent favored use of fast vehicle ferries, and about 40 percent opposed or expressed concerns.</p>	<p>The department is confident that fast vehicle ferries will perform acceptably, based on several factors, including research into the successful operation of similar ferries in other parts of the world. The <i>Fairweather</i> has begun service and is performing consistently and reliably.</p>
<p>Those who supported the fast vehicle ferry cited its shorter travel time between ports, which makes it easier to schedule frequent service. They generally saw greatest utility for the fast vehicle ferry in the Lynn Canal corridor and connecting Sitka to Juneau.</p>	<p>The shift to fast vehicle ferries means more frequent opportunities to make shorter trips via ferry. Although each sailing has less car deck space, through capacity increases because of the greater number of trips the fast vehicle ferry can make in a given time period. Because fast vehicle ferries are able to haul trucks, heavier loads are able to make the trip.</p>
<p>Those concerned about the use of fast vehicle ferries raised the following concerns: expense to operate (related to fuel consumption), safety questions, capacity limitations for vehicles and freight, loss of aesthetic and relaxing ferry travel experience, reductions in crew jobs, and the potential for collisions with marine mammals.</p>	<p>The fast vehicle ferry will consume more fuel than a comparable conventional ferry. However, decreases in crew costs will more than offset higher fuel costs. There are parallels here with jet aircraft – fuel consumption is high but the speed at which the trip is completed leads to lower costs overall.</p> <p>Fast vehicle ferries operate at higher speeds than do conventional ferries, and consequently are subjected to more stringent requirements to ensure safety. Higher speeds may have other effects, such as making it somewhat less likely that collisions with marine mammals will be completely avoided. Because they prefer slower travel speeds, some travelers may avoid the fast vehicle ferry and choose to travel by mainliner.</p>

Comment	Response
<p>There were concerns and objections with freight-hauling changes associated with fast vehicle ferries, specifically that a tractor and driver would need to accompany a freight trailer while it was in transit.</p> <p>Wrangell residents asked that fast vehicle ferry service between Ketchikan and South Mitkof be routed through Wrangell. Similar requests involving service between Juneau and Sitka were received from Hoonah and Angoon residents.</p>	<p>Unlike mainliners, fast vehicle ferries are intended for point-to-point service. Like the IFA's <i>Prince of Wales</i>, the ferries rely on the use of the stern door at one end of the sailing. This approach shortens the loading and unloading cycles and simplifies the loading process for larger vehicles (such as recreational vehicles), but it does have consequences. In response, AMHS loading and scheduling practices for fast vehicle ferries are different than for mainliners.</p> <p>The first consequence is specific to trucks. It has been suggested that after driving onto the vehicle deck, the tractor should not be detached from the trailer and instead be transported with the trailer to the unloading point. This practice would speed up the loading and unloading cycles; however, carriers have pointed out that this practice may make use of the ferry uneconomic for them. AMHS is exploring the feasibility of loading only the vans.</p> <p>The second consequence is that the scheduling of intermediate stops on a point-to-point sailing is ruled out. For example, fast vehicle ferries will not stop at Wrangell when traveling between Ketchikan and South Mitkof. Instead, IFA will be the initial operator to provide connecting service between the fast vehicle ferry and Wrangell.</p>
<p>Concern was expressed that the fast vehicle ferry is not the right choice for service between Ketchikan and Juneau because fast vehicle ferries will require consistently high revenue to offset operating costs.</p>	<p>When compared to mainliners, it will not be difficult for fast vehicle ferry service to meet or exceed the ratio of revenue recovery achieved by existing service out of Prince Rupert. For example, the <i>Taku</i> spent 44.1 weeks sailing out of Prince Rupert, according to the most recent 2003 AMHS Annual Financial Report. Revenues totaled \$4.8 million, whereas operating costs were \$9.5 million. The precise cost parameters of the first fast vehicle ferry will not be known until labor negotiations are complete and operating experiences are gained. In particular, these parameters are needed to identify the breakeven point for this vessel (the average load that covers costs for a sailing). However, operating costs per hour will clearly be lower. Because there are fewer operating hours to cover, a comparable revenue stream will go farther toward funding operating costs.</p>
<p>Several people suggested that ADOT&amp;PF provide a longer, all-season evaluation period for the first fast vehicle ferry, <i>Fairweather</i>, before a decision is made to purchase the third and fourth fast vehicle ferries.</p>	<p>The decision to purchase the third and fourth fast vehicle ferries has not been made, and the Marine Transportation Advisory Board will participate in the decision process. AMHS has already demonstrated the sailing capabilities of the <i>Fairweather</i> in a variety of sea conditions. Some level of operational experience will be gained before it is decided to acquire additional fast vehicle ferries. The state will determine when the information is sufficient to provide reasonable confidence that the fast vehicle ferries will perform as intended.</p>

Comment	Response
<p><b>2.2 General Comments About AMHS Service</b></p>	
<p>More than 60 comments were received about stabilizing and improving traditional AMHS (non-fast vehicle ferry) service. Frequent suggestions are noted below.</p>	
<p>Find ways to improve mainline service, thus ensuring sustainability and availability for freight shipments.</p>	<p>Mainline service will continue with two mainliners operating from Bellingham during the summer schedule and one throughout the year. This service is expected to generate revenues that exceed vessel operating costs, and thus is sustainable. In addition, the <i>Kennicott</i> is partially available for mainline service. A change from the draft SATP update is to maintain <i>Kennicott</i> as a 24/7 vessel and operate a weekly service between Prince Rupert, British Columbia, and Whittier (including intermediate stops). Marketing efforts are under way to increase traffic on sailings, and thus enhance sustainability.</p>
<p>Improve ferry scheduling.</p>	<p>Too many constraints govern current schedules for the results to ever be satisfactory to all constituents. In response, new ways of providing service have been put in place by IFA and AMHS. These new services offer schedules that are much more attractive and acceptable to the traveling public. Reliable and predictable departure and arrival schedules are very important to businesses and the public. Further progress in this direction is recommended, with the ultimate outcome that highway links, including various shuttle ferry connections, are in place for primary travel corridors. Thus, most restrictions related to ferry schedules would be eliminated for travelers.</p>
<p>Retain the <i>Taku</i>.</p>	<p>The <i>Taku</i> cannot be retained if there is no opportunity to deploy her in a breakeven capacity. According to the 2003 AMHS Annual Financial Report, the <i>Taku</i> spent 44.1 weeks sailing out of Prince Rupert in fiscal year 2003. Revenues totaled \$4.8 million, whereas operating costs were \$9.5 million. Several million in deferred maintenance would have to be made just to maintain her over the next couple of years, and more than \$40 million would have to be invested to operate her over the next 15 years.</p>
<p>Ensure equitability of service (particularly for small communities such as Hoonah, Angoon, and Kake).</p>	<p>The current balance in AMHS–provided service between communities is appropriate, given funding limits, revenue generation, and other constraints. In response to public concerns, new ways of providing service are actively being investigated. The next step along these lines is the Northern Panhandle Transportation Study, which will be started during 2004 in conjunction with the Sitka Access EIS.</p>



Comment	Response
Upgrade small vessels (such as <i>LeConte</i> ) for safety and comfort.	The <i>LeConte</i> is safe, but the limited passenger capacity (250) is not sufficient for travel to special events. On most trips, passenger loads are well below capacity. On those trips for which passenger counts approach capacity, some travelers find that not all of their fellow passengers are considerate when it comes to the sharing of the limited public space. There is no obvious solution to inconsiderate behaviors, beyond encouraging all passengers to respect the needs of others.
Locate ferry terminals close to communities or ensure convenient ground transportation.	Proposed terminal locations are based on optimizing system efficiency. Although overall efficiency increases, the effects on individual travelers vary. Direct costs for passengers (when traveling without a vehicle) could be higher to complete some trips, for reasons such as having to pay a shuttle bus or taxi fare for transportation to or from the terminal. In Southeast, three mainline terminals are already outside the communities. At these terminals, the current practice is to rely on the private sector to provide ground transportation to the community center.
Take steps to increase ridership.	<p>AMHS is increasing its marketing efforts; however, its marketing budget is limited. In terms of system finances, an increase in ridership is useful only to the degree that it increases the ratio of revenue recovery above current levels. The amount of traffic with high revenue-generating capabilities that is not already using AMHS is unclear.</p> <p>The SATP prescribes more frequent regular scheduled service on convenient daylight schedules. Frequent, regular, convenient service should increase ridership.</p>
Increase the capacity of the transfer bridge in Prince Rupert so that it does not restrict truckers in hauling legal loads.	The weight limit on the transfer bridge in Prince Rupert is 70,000 pounds. This limit is well below Alaska's maximum for a five-axle truck, which if properly configured (in terms of tires and axle spacing) can weigh 88,000 pounds. The Port of Prince Rupert owns this transfer bridge. The magnitude of this payload restriction was identified from public comments, and the appropriate response has yet to be determined.

Comment	Response
<b>3. INTER-ISLAND FERRY AUTHORITY</b>	
<p>More than ten comments addressed IFA, and expressed the following:</p> <p>Some who commented expressed support for IFA and its expansion to a second corridor (Coffman Cove, Wrangell, South Mitkof). They noted its importance in tying small communities together and providing an alternative connection to mainline ferry service.</p>	<p>The addition of service (initially during the summer months) in the northern corridor (Coffman Cove, Wrangell, and South Mitkof) is a basic element of the SATP. Funding for the required improvements (including ferry acquisition) is identified and is close to being fully committed.</p>
<p>Others who commented raised concerns about IFA's long-term financial stability and the possible need for a state subsidy.</p>	<p>IFA has demonstrated that it can cover its operating costs from revenues. The premise that traffic levels in the Hollis to Ketchikan corridor are adequate to support the costs of daily service has been confirmed.</p> <p>Unlike the AMHS budget, the IFA budget is not part of the state's operating budget. There is no annual appropriation of state operating funds to IFA. Although IFA is financially independent, there are financial exchanges between IFA and the state. For example, the ferry terminal in Ketchikan is state-owned. A second example would be the AMHS link to Metlakatla, for which IFA has provided service when it was not cost-effective for AMHS to do so. Because these arrangements are new, both IFA and the state are determining the appropriate financial exchanges. The state is seeking arrangements that emphasize the greatest amount of service to the traveling public, while ensuring that IFA compensates the state for those costs that are directly related to IFA use of state facilities.</p>

Comment	Response
<b>4. FERRIES VERSUS ROADS</b>	
<p>The topic that received the most response was the basic question of whether Southeast Alaska would be better served by continuing to rely on AMHS (and substantially improving the network of marine connections between communities) or by constructing a network of new highways, including shuttle ferry connections. More than 300 comments were directed at this question. Comments on ferries were usually general in nature, while comments on roads were often directed to specific roads and specific issues (See Comment Section 6 below.)</p> <p>Approximately 90 percent of the commentary on this topic urged that the SATP focus on AMHS improvements, not on construction of new roads in Southeast Alaska. Concerns related to potential impacts of an expanded road system included potential changes in community and regional quality of life; environmental and aesthetic impacts of roads; impacts to wilderness areas; the high costs and uncertain feasibility of road construction, maintenance, remote ferry terminals, and emergency services on road corridors; inconvenience for travelers, especially those without vehicles; opening up areas to additional hunting pressure; loss of ferry jobs; and the prospect that road travel would be less safe and dependable than ferry travel in inclement weather and in avalanche conditions.</p> <p>About 10 percent of the commentary specifically favored the road/shuttle ferry model as more efficient and cost-effective than a system reliant on ferries. These comments acknowledged the long-term affordability and sustainability of a transportation system based on roads, particularly as pressure increases to reduce the AMHS subsidy. Other comments supporting the model reflected belief that it would stimulate the Southeast Alaska economy, support tourism, reduce freight costs, and expand access to resources. Those who commented noted that benefits to road users would include more frequent travel unfettered by ferry schedules, a less expensive travel alternative, and improvements to emergency access for communities dependent on less frequent scheduled travel by ferry or air.</p>	<p>Over the long term, roads do far more for the traveling public in terms of lower costs, increased capacity, and greater choice. The ongoing cost to crew and operate large ferries on a 24/7 basis are substantial, and have no counterpart in comparison to the costs of keeping a rural highway open, even if avalanche control or tunnel operation is required. It is a necessary function of the planning process to identify these cost differentials, and to seek the best means of providing transportation at the lowest overall cost to travelers and the state.</p> <p>There is no question that the substitution of a land highway on a link currently served by ferry will bring change. If costs to travel are reduced, this change will bring substantial benefit to the traveling public and the state. The estimated size of these benefits needs to be quantified and compared to the impacts associated with road construction. The environmental process during project development is the ideal forum for these comparisons and impact assessments. In preparing the SATP update, the state recognized specific legal barriers or obstacles to road-building, such as designated wilderness areas.</p> <p>Many of those who commented prefer that the state should simply accept the existing situation (ferry access only) for Southeast communities and not try to change it. This approach ignores the rising cost of operations and opportunities to seek capital funding with which to construct roads that would end the need for ferry access. The department cannot pursue its mission of improving transportation if it precludes consideration of all reasonable alternatives. It is incumbent on department planners to seek the best ways of improving access, boosting mobility, and increasing efficiency in the transportation system.</p>

Comment	Response
<b>5. COMMUNITIES</b>	
The following comments address specific transportation improvements desired by Southeast Alaska communities.	
<b>5.1 Angoon</b>	
Increased ferry service (frequency), possibly through including Angoon in the Sitka to Juneau fast vehicle ferry run. Support for better ferry connections between Angoon, Kake, and Hoonah.	The current balance in AMHS–provided service between communities is appropriate, given funding limits, revenue generation, and other constraints. In response to public concerns, new ways of providing service are actively being investigated. Community participation in the Northern Panhandle Transportation Study, which will be under way in 2004 (in conjunction with the Sitka Access EIS), is essential.
Larger, cleaner ferry to serve the community.	Concerns with cleanliness have been forwarded to AMHS. For most trips, passenger loads on the <i>LeConte</i> are well below capacity. It is not cost-effective to routinely use a larger ferry for light loads. Instead, it makes sense to schedule more frequent service in response to spikes in demand. This approach is not currently available, but will be explored in the Northern Panhandle Transportation Study.
Upgrade the ferry terminal.	The terminal in Angoon is less versatile than other AMHS terminals, a characteristic that limits service to <i>LeConte</i> class vessels. The recommendations of the Northern Panhandle Transportation Study will identify a specific course of action for this terminal. A high community priority is construction of a new terminal building with public facilities.
The community does not have an airport.	Angoon is the largest community in the region without an airport. An airport master planning study will begin in 2004. A project to construct a new airport will be presented to the project evaluation board following completion of the airport plan in 2005.
<b>5.2 Gustavus</b>	
<p>Support for adding ferry service to Gustavus.</p> <p>Need to raise the priority of construction of a ferry dock and use regular program funds (similar to upgrades to ferry facilities in other places) rather than relying on a federal “earmark.”</p>	<p>It makes sense to add ferry service to Gustavus. For many years the community did not support this course of action, but the recent loss of regular freight service has made the scheduling of AMHS service acceptable. The next step is community participation in completing the Northern Panhandle Transportation Study. This study is the appropriate forum for establishing the priority and funding mechanisms for construction of a ferry terminal. New construction at the current location of the Gustavus dock will be expensive, and users would continue to be exposed to severe weather.</p> <p>Because it is more sheltered, Bartlett Cove would be a much better location for a ferry terminal. Replacement of the dock at the current site will be difficult to fund because it is relatively high in cost in relation to the population served.</p>

Comment	Response
<b>5.3 Haines</b>	
<p>Support for frequent and reliable ferry service, including fast vehicle ferry, connecting Haines to Skagway and Juneau.</p>	<p>Since 1998, Haines (along with Skagway and Juneau) has benefited from dayboat service during the summer in the Lynn Canal corridor. For five years, this new service featured a daily sailing on a standard schedule.</p> <p>This year, the <i>Fairweather</i> is replacing dayboat service. There is direct service from Juneau to Haines five days a week and from Juneau to Skagway four days per week. This service is supplemented by mainline sailings. On the <i>Fairweather</i>, onboard travel time to Haines is cut in half and onboard travel time to Skagway drops by 63 percent.</p>
<p>Requests that the previous AMHS summer connection between Haines and Skagway be retained, because it is a critical link in the "Golden Circle" route that features the Haines Highway, Alaska Highway, and Klondike Highway.</p>	<p>This interruption in service is not permanent, and may be restored as early as 2005 with a new shuttle ferry service. Unlike in previous years, <i>Fairweather</i> service does not carry traffic to and from Skagway through Haines. Consequently, during the summer, service frequency between Haines and Skagway is reduced, and there is no longer a daily sailing on a standard schedule. Vehicle travel is not precluded, because both a highway connection and mainline sailings are available between the two communities. In addition, the private sector provides ferry service for passengers.</p>
<p>Concern about construction of the preferred alternative (East Lynn Canal Highway to Skagway) for Juneau Access, focusing on social and economic impacts to Haines, which is on the west side of Lynn Canal (see Comment Section 6.7).</p>	<p>These concerns have been recorded, and made available to those preparing the Supplemental Draft EIS for Juneau Access.</p>
<p>Concern that the draft SATP update did not show all alternatives being evaluated as part of the Juneau Access EIS.</p>	<p>The draft SATP update included a note indicating that the EIS process was not complete. The final SATP presents the preferred alternative as the road between Juneau and Skagway with a short shuttle ferry crossing connecting Haines to a new shuttle ferry terminal in the Katzehin River Delta. Map 11 (page 85) depicts the preferred route and alternative routes under consideration in the supplemental draft EIS.</p>
<b>5.4 Hoonah</b>	
<p>Need more frequent (daily) ferry service between Hoonah and Juneau. Can Hoonah receive fast vehicle ferry service? Would like to be able to travel to Juneau and back without having to spend the night in Juneau.</p> <p>Hoonah to serve as the hub for shuttle ferry service (one to two times per week) to Gustavus, Pelican, Elfin Cove, and Tenakee Springs.</p>	<p>The current balance in AMHS-provided service between communities is appropriate, given funding limits, revenue generation, and other constraints. In response to public concerns, new ways of providing service are actively being investigated. Community participation in the Northern Panhandle Transportation Study, which will be under way in 2004 in conjunction with the Sitka Access EIS, is essential.</p>

Comment	Response
<b>5.5 Hydaburg</b>	
Hydaburg Road is unsafe and lacks guardrails.	The safety of Hydaburg Road is evaluated annually in terms of reported crashes, including their location. Not many crashes are reported, and reports often indicate that drivers are traveling too fast with respect to weather conditions and roadway alignment. The installation of additional guardrail was examined as part of the recent upgrade. It was rejected because benefits were outweighed by costs and risks associated with guardrail placement, including the prospect of vehicle collisions with the guardrail.
Need for widening and realignment of Hydaburg Road, as has been done for other state highways on Prince of Wales Island.	Widening and realignment of Hydaburg Road has not been identified as a priority in the Statewide Transportation Improvement Program (STIP). This plan recommends that Hydaburg Road be added to the Alaska Highway System so that it can compete for funding within this STIP component.
Improve access between Hydaburg and Masset, British Columbia, to support tourism and cultural exchanges.	The surface transportation system links Hydaburg and Masset, and plan elements such as the daily Southern Gateway Shuttle from Ketchikan to Prince Rupert, will improve this connection. BC Ferries operates a vessel from Prince Rupert to Graham Island, on which Masset is located. The trip takes seven hours, one way. There are three round-trips per week in winter months and six round-trips per week in summer. A Hydaburg resident could take IFA to Ketchikan on one day, travel via the Southern Gateway Shuttle to Prince Rupert, and arrive in time to take the BC ferry to Graham Island, probably on the same day.
<b>5.6 Hyder</b>	
Need to significantly update section of SATP describing "Service to Hyder" (page 55) to accurately reflect current situation and interest of community.	Document organization has changed, and this material has been revised.
More than 50,000 visitors reach Hyder per year from the Cassiar Highway, but otherwise bypass Southeast Alaska. Adding a ferry link to Ketchikan would tap this market and add a route for freight.	AMHS does not provide a ferry link between Hyder and Ketchikan because the trip from Ketchikan to Hyder is 50 percent longer than the trip from Ketchikan to Prince Rupert. Travelers can still reach Ketchikan by driving from Hyder to Prince Rupert, where there is AMHS service to Ketchikan.  Hyder has been evaluated as a continental highway connection alternative to Prince Rupert. The results continue to favor Prince Rupert as the more efficient highway connection for AMHS. Other operators of ferry service could serve this route.

Comment	Response
<b>5.7 Juneau</b>	
<p>Comments centered on Juneau Access and its impacts, benefits, and implications for AMHS.</p> <p>There were also numerous comments on other aspects of the SATP.</p>	<p>See the comment summary and response under Comment Section 6.7 (Juneau Access).</p> <p>Summaries of these comments and responses are provided by topic and subtopic.</p>
<b>5.8 Kake</b>	
<p>Strong community interest in improving ferry service, especially frequency, itineraries, and the passenger waiting shelter (which is open on two sides because of fire damage). The Organized Village of Kake conducted its own survey, in which 64 of 67 respondents urged improved ferry service.</p>	<p>Scheduling AMHS service to Kake poses special challenges because of the community's location in relation to other ports. In response to public concerns, new ways of providing service are actively being investigated. Community participation in the Northern Panhandle Transportation Study, which will be under way in 2004 (in conjunction with the Sitka Access EIS), is essential.</p>
<b>5.9 Ketchikan</b>	
<p>Support from many, including the City of Ketchikan, for daily ferry service from Ketchikan to northern communities and to Prince Rupert.</p>	<p>Support noted.</p>
<p>Concern that the SATP update could lead to a loss of jobs in Ketchikan because mainliners would be retired.</p>	<p>Reduction in AMHS costs means, to a large extent, reductions in labor. There will be jobs lost, and in some communities, there may be no obvious way to substitute for the loss. For the region as a whole, the losses are not devastating. They will be phased in over time during a period when AMHS is having difficulty finding qualified staff for all positions. In addition, new jobs will be created, both for new transportation services and in response to efficiency gains for the economy as a whole.</p>
<p>Previously, the third fast vehicle ferry was to run between Ketchikan and South Mitkof and the fourth ferry was to connect Petersburg and Juneau. Why the change?</p>	<p>The order of deployment was reversed because it made more sense to deploy the third fast vehicle ferry between Juneau and Petersburg pending the arrival of the fourth fast vehicle ferry. This deployment is logical because there would be no shuttle ferry capacity north of Petersburg. In comparison, the third fast vehicle ferry could be coordinated with the IFA ferry between South Mitkof, Wrangell, and Coffman Cove. It would also enable the third fast vehicle ferry to cover for the <i>Fairweather</i> during overhaul.</p>
<p>Requests that transfers to and from Prince of Wales Island be considered when planning regional transportation connections in Ketchikan because the population of Prince of Wales Island is more than 4,000, or almost a third of the population of the Ketchikan Gateway Borough (14,070).</p>	<p>Ease of transfer is one of many considerations that go into locating transportation facilities and coordinating schedules. The facilities in place and those that are planned enhance transfer opportunities. The state pushed for a consolidated ferry terminal in Ketchikan served by both AMHS and IFA. There is a seaplane float outside the airport terminal building.</p>



Comment	Response
<b>5.10 Pelican</b>	
Requests for more ferry service to Pelican.	Scheduling AMHS service to Pelican poses special challenges because of the community's location and traffic levels. In response to public concerns, new ways of providing service are actively being investigated. Community participation in the Northern Panhandle Transportation Study, which will be under way in 2004 (in conjunction with the Sitka Access EIS), is essential.
<b>5.11 Petersburg</b>	
Skepticism was expressed about many features of the plan. A specific focus was that the economy depends on shipping seafood via AMHS. Many comments emphasized the importance of mainline ferry service, especially southbound, for continued reliability and affordability in the shipment of freight, particularly seafood. Concern was expressed about the capacity, reliability, and potential added costs of using fast vehicle ferries to provide freight service.	Concerns about freight, specifically the shipment of seafood, were prevalent in Petersburg, Wrangell, and a number of other communities. Currently, most freight, including seafood shipments, is carried by the private sector, with AMHS available as scheduled. During peak periods, it is important to the regional economy that adequate capacity be in place. The SATP provides capacity for this purpose through a combination of highway links, shuttle ferries, fast vehicle ferries, and mainliners, providing shipping options for those shipments that can take advantage of a scheduled sailing. AMHS will always work with shippers to the degree that schedules and fleet availability permits.
Concerns that the shift to relying on highway transportation to reach a distant ferry terminal was problematic. These concerns include maintenance costs, vehicle operation in difficult winter conditions, provisions for passengers traveling without a vehicle, and construction expense. The proposed location of South Mitkof Ferry Terminal has been questioned because of environmental impacts and separation from the settled area.	There are already several existing terminals that are not in a settled area. For those traveling with vehicles, there is little or no effect. Those traveling without vehicles need to make additional arrangements to reach their destinations. Because ferry terminals provide inter-city transportation, the level of state road maintenance is a higher priority in the vicinities of these terminals. With respect to future terminal locations, the biggest changes involve increasing the road distance that needs to be traveled to reach the terminal and the likelihood that some terminals will be located at sites in the region where there currently is no community. Foot passengers will require some sort of for hire public transportation from remote terminals.
<b>5.12 Port Alexander</b>	
Need to include Port Alexander in the SATP.	Port Alexander is included in the Northern Panhandle Transportation Study, which will be under way in 2004 (in conjunction with the Sitka Access EIS).
<b>5.13 Prince of Wales Island</b>	
General agreement, including a letter from the Prince of Wales Community Advisory Committee (POWCAC), about the importance of specific projects on Prince of Wales Island. Projects are listed in Comment Section 6.4.	Support noted.

Comment	Response
<b>5.14 Sitka</b>	
Extensive comment against the cross-Baranof road options and many comments against the choice of the road option anywhere in Southeast Alaska.	A road across Baranof Island will benefit the traveling public in important ways because it makes it easier to schedule AMHS sailings that serve Sitka. The current location of the Sitka terminal cannot be reached without extensive out-of-direction travel for those not stopping there. Any option for the cross-Baranof road would move the terminal location closer to the through route, thus reducing the need for out-of-direction travel.
Many comments from Sitka urged that a fast vehicle ferry be based in that community, which would lead to more frequent service.	The results of the Juneau Access EIS are important to Sitka because the <i>Fairweather</i> can be redeployed if she is no longer needed in Lynn Canal. At this time, there is no available fast vehicle ferry to base in Sitka. Determined by current demand, the sequence of deployment of the next Southeast fast vehicle ferries is between Petersburg and Juneau, and then between Ketchikan and South Mitkof.
Comments about the importance of connectivity with outlying villages (Kake, Angoon, and Hoonah) for health care, cultural ties, and commercial relationships.	For more than 25 years AMHS has scheduled service that connects these villages with each other, Sitka, and Juneau. The state recognizes the importance of this service, and through the Northern Panhandle Transportation Study is seeking the best means of ensuring that these surface transportation links are in place in the future.
<b>5.15 Skagway</b>	
Comments from Skagway residents focused on the proposed construction of a road from Echo Cove to Skagway and other Juneau Access alternatives (For specific concerns, see Comment Section 6.7).	Public participation in preparation for the Juneau Access EIS is the appropriate forum for identifying impacts and assessing concerns with the preferred alternative and other means of accomplishing the proposed action. Juneau Access EIS managers were present at the Skagway meeting.
<b>5.16 Tenakee Springs</b>	
Once-a-week AMHS service (in each direction) works well, but not if service is interrupted when the <i>LeConte</i> is unavailable.	The Northern Panhandle Transportation Study will examine alternatives that are more versatile and flexible in terms of vessel substitutions when the primary vessel is unavailable.

Comment	Response
<b>5.17 Wrangell</b>	
Concern that the draft SATP does not include AMHS service to the community.	The primary factors governing future AMHS service to Wrangell will be traffic demand and the location of Mid-Region Access. Overall, there will continue to be room in mainline schedules to include Wrangell, and the IFA link to Prince of Wales is likely to increase AMHS traffic at Wrangell. The plan maps are revised accordingly, and show that mainline routes include Wrangell.
Wrangell needs to be served by both mainliners and the fast vehicle ferry.	The SATP recommends fast vehicle ferry service between Ketchikan and South Mitkof (Petersburg) with the schedule coordinated with the IFA ferry to connect with Wrangell. Only by transporting traffic directly to South Mitkof can the majority of passengers make the trip within ten hours or a single day between the region's two largest cities. This trip length is not possible if the fast vehicle ferry unloads and turns around at Wrangell. The fast vehicle ferry's service speed does not permit stops at Wrangell for both directions en route to Petersburg. The fast vehicle ferry is designed for point-to-point service.
Support for the Bradfield Road, including requests that its priority is increased and funding accelerated.	The EIS for Mid-Region Access will include Bradfield Road. Current work involving Bradfield Road is funded as pre-NEPA scoping. Before the project advances to EIS preparation, questions concerning Canadian involvement and support need to be resolved.
Concern that seafood shipments would no longer travel directly to Prince Rupert, British Columbia, because mainline service is not shown and other links are indirect.	The SATP provides adequate capacity for freight movements through a combination of highway links, shuttle ferries, fast vehicle ferries, and mainline service. For Wrangell, the availability of the highway and shuttle ferry options will depend on the outcome of the Mid-Region Access EIS. However, mainline service and IFA service through Wrangell will be available on an ongoing basis. Before Mid-Region Access would be complete, fast vehicle ferry service will be available via South Mitkof.
<b>5.18 Yakutat</b>	
Support for increasing cross-Gulf of Alaska sailings that include Yakutat. Need schedule and other information (about service to Yakutat) to be easily available and user-friendly.	Support noted. Concerns about information availability have been forwarded to AMHS.
Interest in special ferry runs to Yakutat for events like Celebration.	Yakutat's location rules out the scheduling of special runs. Event organizers need to contact AMHS well in advance so that, to the extent possible, the AMHS schedule can be coordinated with the event.

Comment	Response
<b>6. SPECIFIC TRANSPORTATION PROJECTS</b>	
<b>6.1 Mid-Region Access (includes Bradfield Road)</b>	
<p>More than 60 comments were received concerning the Bradfield Road. About one-third of the comments expressed support, and almost two-thirds indicated opposition.</p> <p>Supporters pointed to economic benefits for communities and the region, especially with respect to seafood transport, tourism, and mining. The proposed link was seen as an efficient and cost-effective connection to the Lower 48. Many urged that the timeline for construction be advanced.</p> <p>Opponents pointed to safety concerns, doubts there would be substantial use of the road for either private travel or seafood shipping, impacts to quality of life in communities, costs of construction and maintenance, uncertain financial feasibility, environmental impacts, and impacts to commercial fishing and wildlife hunting.</p>	<p>The proposed Mid-Region Access deserves further study because it will establish a regional highway connection to the continental highway system. Such work is ongoing. Currently, a study is under way to assess economic benefits of the project, and informal consultation is taking place between local, state, and provincial government officials.</p> <p>An EIS would evaluate all reasonable alternatives and address the anticipated social, economic, and environmental impacts. When funding becomes available, an EIS will be initiated following formal consultation through appropriate channels (assuming Canadian involvement). Principal alternatives to be considered are the Bradfield Road route, the route via the Stikine River Valley (which would connect both Petersburg and Wrangell), and road and shuttle ferry connections between Petersburg, Wrangell, Ketchikan, and the Bradfield Road route. The EIS process is the appropriate forum for presenting the proposed action, establishing the range of alternatives, identifying impacts, and assessing concerns with the various alternatives.</p> <p>See also the discussion above under Comment Section 3, Ferries versus Roads.</p>
<b>6.2 Wrangell Access (to Fools Inlet)</b>	
<p>Several comments were received in support of providing road access to Wrangell, through upgrade and extension of an existing forest road, construction of a terminal on Fools Inlet, and a shuttle ferry to the Bradfield Road.</p>	<p>Support noted.</p> <p>The Fools Inlet road and ferry terminal will likely be developed in conjunction with the Mid-Region Access.</p>
<b>6.3 Ketchikan Access (including roads across Cleveland Peninsula)</b>	
<p>More than 20 comments addressed Ketchikan Access. Most concerned a specific element – the need to cross Cleveland Peninsula with a highway. Some support was expressed; however, more than 85 percent were in opposition. Opponents pointed to environmental impacts.</p>	<p>Ketchikan Access connects to Mid-Region Access, and once Mid-Region Access is in place, would link the region's second most populous community to Wrangell, Petersburg, and the continental highway system to the east. If completed before Mid-Region Access, the highway across Revillagigedo Island offers benefits that include expanding where residents and visitors can drive while in Ketchikan, connecting several existing outlying settlements, and enhancing further settlement of outlying areas and the likelihood that currently inaccessible resources would be linked to the marketplace. To provide the connection to Mid-Region Access, however, it is necessary to cross the upper Cleveland Peninsula with a road. In addition, beyond 2025, there may be a need for a highway across the lower Cleveland Peninsula. The corridor for this route is shown on Map 7, Essential State Land and Marine Transportation &amp; Utility Corridors on page 19.</p>

Comment	Response
<b>6.4 Roads on Prince of Wales Island</b>	
<p>More than 25 comments supported road projects that would improve surface transportation on Prince of Wales Island. Some of these projects would be administered by the Forest Service, and others would require state administration. Forest Service projects include road upgrades from the end of state maintenance at Coffman Cove Junction to Naukati Junction, and from this point to El Capitan, upgrade of Sandy Beach Road (the "Coast" road) between Coffman Cove and Thorne Bay, and the construction of part of the "Coast" road on a new alignment between Ratz Harbor and Eagle Creek.</p> <p>Those projects that could involve state administration are identified below.</p>	<p>Upgrade of the primary regional transportation system, which includes highways on Prince of Wales Island, is a priority of the state. Routes on this system carry traffic through the region and provide primary access to communities. Upgrade of Coffman Cove Road, followed by the upgrade of North Prince of Wales Island Road, are high state priorities. Although improving basic access to all communities is a state goal, the priority has to go to the roads and transportation connections with higher traffic volumes.</p> <p>The Forest Service plays an important role in providing surface transportation to the northern part of Prince of Wales Island. Forest roads provide the only surface connections to Coffman Cove, Naukati, and Whale Pass. The SATP supports the efforts of the Forest Service, such as the Public Forest Service Roads initiative, that improve and maintain these links.</p>
<p>Add Naukati Road to the state highway system.</p>	<p>The three-mile spur road into Naukati has not been identified as part of the primary regional transportation system. Thus, it is not a priority for state maintenance and operation (addition to the state highway system).</p>
<p>Make upgrade of Kasaan Road a high priority.</p>	<p>The road to Kasaan has not been identified as part of the primary regional transportation system; therefore, its upgrade is not a high priority of the state.</p>
<p>Connect the Port St. Nicholas Road to the Hydaburg Road through new road construction along the north side of Trocadero Bay.</p>	<p>This proposed route would not be part of the primary regional transportation system. The role of Port St. Nicholas Road is to provide local access, not carry through traffic.</p>
<p>Construction of new road south from Whale Pass that provides a more direct connection to the IFA ferry terminal at Coffman Cove.</p>	<p>The state does not view construction on a new alignment as a priority for this link. Instead, it is more cost-effective to upgrade the existing surface link (via Neck Lake) that connects Whale Pass to the rest of the island, including Coffman Cove.</p>
<b>6.5 Gravina Access (Ketchikan)</b>	
<p>More than ten comments stated specific positions about access to Gravina Island. Most favored construction of a bridge.</p>	<p>Comments noted. The EIS process for Gravina Access is close to completion; the Record of Decision is expected to be signed in 2004.</p>

Comment	Response
<p><b>6.6 Sitka Access (Cross-Baranof Road)</b></p>	
<p>More than 100 comments stated specific positions on a road across Baranof Island to a new ferry terminal at either Rodman Bay or Warm Springs Bay. Some support was expressed; more than 85 percent of comments stated opposition.</p> <p>Supporters noted that it would speed up the ferry system generally, reduce freight costs, and improve access in many ways.</p> <p>Opponents noted the potential for socioeconomic and quality of life changes; the high cost of road construction and maintenance; safety, maintenance and winter access concerns (winter conditions, avalanche, landslides); aesthetic impacts; wilderness and wild and scenic river impacts; environmental impacts (water quality, wetlands, fisheries, wildlife, marine mammals); inconvenience to non-vehicle travelers; loss of AMHS revenue from Lynn Canal service; and diversion of financial resources from other transportation needs.</p>	<p>New road construction (following completion of the Sitka Access EIS) would offer many benefits. The most important benefit is improved AMHS service because the Sitka terminal would be relocated. With less distance to cover, the round-trip by fast vehicle ferry to Petersburg would easily fit within a 12-hour period. Similarly, the round-trip by fast vehicle ferry to Juneau would require less time and fuel. With the terminal either on or near Chatham Strait, less time, fuel, and out-of-direction travel would be required for mainliners, and tidal currents would no longer constrain schedules. Passengers would spend less time aboard, and those traveling with a vehicle could choose their own pacing for the highway portion of the trip. These changes would result in cost savings to travelers, freight shippers, and the state.</p> <p>Other benefits would include expanding where residents and visitors can drive while in Sitka, the possibility of settlement in outlying areas, and the likelihood that currently inaccessible resources would be linked to the marketplace.</p> <p>Many concerns need to be examined through preparation of an EIS. These concerns involve both the need for the proposed action and possible impacts from road construction. Initiation of the EIS process is expected shortly, and provides the appropriate forum for presenting the proposed action, establishing the range of alternatives, and identifying potential impacts.</p> <p>See also the discussion above under Comment Section 3, Ferries versus Roads.</p>

Comment	Response
<p><b>6.7 Juneau Access</b></p>	
<p>More than 140 comments stated positions on a road alternative for Juneau Access. About one-quarter of the comments expressed support, and three-quarters indicated opposition.</p> <p>Supporters noted the increase in access for communities, improved user convenience, lower user cost, access to state capital, stimulation of regional economy, road travel being more fuel efficient than ferry travel, lower freight cost, and enhanced access for recreation.</p> <p>Opponents noted the potential for socioeconomic and quality of life changes; high cost of road construction and maintenance; safety, maintenance and winter access issues (winter conditions, avalanche, landslides); aesthetic impacts; wilderness and wild and scenic river impacts; environmental impacts (water quality, wetlands, fisheries, wildlife, marine mammals); inconvenience to non-vehicle travelers; loss of AMHS revenue from Lynn Canal service; and diversion of financial resources from other transportation needs.</p>	<p>The preferred alternative for Juneau Access would place most surface travel to and from Juneau and northern destinations on a land highway. Those traveling by vehicle would enjoy full flexibility in scheduling the trip at their convenience, and would not have to pay a large toll to complete it. Vehicle travel levels are forecasted to increase tenfold if a land highway is completed. Travel demand is concentrated in the daylight hours during the summer months. Most of winter, the same travel flexibility would be in place, but occasionally weather conditions may delay trip completion for up to a day or two.</p> <p>Shifting from ferries to a land highway would bring transportation changes. Besides a dramatic increase in vehicle travel, AMHS mainliners would have more time in their schedules to serve Sitka and the <i>Fairweather</i> would serve surface travel demand between Sitka and Juneau. Extending the continental highway system to Juneau would place all of the communities in Southeast Alaska with more readily available and lower-cost access to Interior Alaska and the Yukon and for communities in the Northern Panhandle and the Lower 48.</p> <p>Because the preferred alternative adds a human-made feature along the rugged east shore of Lynn Canal and Taiya Inlet, there clearly would be impacts during and following construction. A supplemental draft EIS (followed by a final EIS) will describe and assess ten alternatives, including the no action alternative, and examine impacts from each alternative on the environment.</p> <p>See also the discussion above under Comment Section 3, Ferries versus Roads.</p>
<p>Opponents pointed out that selection of a road alternative would be contrary to a public vote in Juneau and resolutions from the Haines Borough and City of Skagway.</p>	<p>The decision to select an alternative (following EIS preparation) is not an action of local government. For Juneau Access, the department is preparing an EIS that ultimately will lead to a Record of Decision, which requires approval of the Federal Highway Administration. Voting results and the actions of local governments are two of numerous factors that will be considered, evaluated, and weighed during the decision-making process.</p>
<p>Other points included:</p> <p>If an East Lynn Canal road is built, then it is essential to have shuttle ferry service (or a road) between Haines and Skagway.</p> <p>Objections to the draft SATP update showing only one alternative, because it predetermines the outcome of the Juneau Access EIS.</p>	<p>The preferred alternative includes a short shuttle ferry connection across Lynn Canal that connects Haines to the highway at the Katzeihin River delta. The parameters of shuttle ferry service will be identified as part of EIS preparation.</p> <p>Planning documents (such as the SATP) do not predetermine EIS outcomes. The presentation in the draft indicated that the Juneau Access EIS was under way and that several alternatives were under consideration. Map 11 (page 85) depicts the plan's preferred route and the alternative routes under consideration in the supplemental draft EIS.</p>



<b>Comment</b>	<b>Response</b>
<b>6.8 Cross-Gulf Mainline Service (including Yakutat)</b>	
Several comments objected to cross-Gulf of Alaska service, because it diverts mainline ferries from Southeast Alaska when there is the alternative of traveling by road to Railbelt Alaska, including Whittier.	Although this marine route parallels the Alaska Highway, it serves travelers who cannot pass through Canadian customs or do not want to drive the highway or fly. This route also includes “whistle” stops in Yakutat, which otherwise would not be served by AMHS. Because the route duplicates an existing transportation system, the SATP recommends provision of this service to the extent that it recovers its costs.

## **Appendix A**

# **Essential State Transportation and Utility Corridors**



## **APPENDIX A. ESSENTIAL STATE TRANSPORTATION AND UTILITY CORRIDORS**

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### **Essential Transportation and Utility Corridors**

The Southeast Alaska Transportation Plan (SATP) identifies 34 essential highway and utility corridors to be reserved and protected to meet future transportation needs. These corridors are required to connect communities to the regional transportation system and to establish a regional power grid. The state requests that the Forest Service incorporate all of these highway and utility corridors into the Tongass Land Management Plan and reserve and protect these corridors for these purposes. Adoption of this plan is an official expression of state policy that no other action by any other party should be taken (such as designations of wilderness areas) that would interfere with public use of any of the mapped corridors. In addition, the state requests that the Forest Service contribute to state efforts by improving and connecting forest roads that are located within essential road corridors identified by the state. Corridors of particular interest are Kake - Petersburg, Kake - Totem Bay, and North Prince of Wales Island Road - Red Bay.

In a region as rugged as Southeast Alaska, valleys and mountain passes represent invaluable corridors for highway routes and utility transmission lines. Maps 16 to 23 identify the transportation and utility corridors considered essential to the state. These corridors are identified below.

### **Corridor Descriptions**

#### ***Lynn Canal Corridors — Juneau to Haines and Skagway***

1. From Echo Cove northerly along the shore of Berners Bay and Lynn Canal to Skagway with a ferry terminal near the mouth of the Katzhin River.
2. From Skagway southerly along Taiya Inlet to Taiya Point, then northwesterly along Lutak Inlet to Haines.
3. From Haines across the Chilkat River/Inlet at or above Pyramid Island, then southerly along the west shore of Lynn Canal to a suitable ferry terminal site on William Henry Bay.

***Taku River Corridors***

4. From Thane Road southeasterly along Gastineau Channel to Bishop Point, then northeasterly along Taku Inlet to a suitable bridge crossing at Grizzly Bar.
5. From Jaw Point northeasterly along the southeast shore of Taku Inlet and River to the Canada border to provide ferry crossing options.

***Mansfield Peninsula Crossing, Admiralty Island, Corridor***

6. From Young Bay to Greens Creek, Hawk Inlet.

***Chichagof Island Corridors***

7. From a suitable ferry terminal site on Whitestone Harbor to Hoonah.
8. From Hoonah to a suitable ferry terminal site on Tenakee Inlet.
9. Pelican cut-off road from Tenakee Inlet Road to Pelican.
10. Kadashan Road from a suitable ferry terminal site on Tenakee Inlet southeasterly along the Kadashan River to a suitable ferry terminal site on the north shore of Peril Strait across from Rodman Bay.

***Baranof Island Corridors***

11. From the end of Halibut Point Road to a suitable ferry terminal site on Rodman Bay.
12. From the end of Sawmill Creek Road to a suitable ferry terminal site on Warm Springs Bay.

***Kuiu Island Corridor***

13. From a suitable ferry terminal site on Security Bay to a suitable ferry terminal site on Reid Bay for crossing Sumner Strait to Labouchere Bay on Prince of Wales Island.

***Kupreanof Island Corridors***

14. From Kake to a suitable ferry terminal site in Kupreanof for crossing the Wrangell Narrows.
15. From Kake to a suitable ferry terminal site in Totem Bay for crossing Sumner Strait to Red Bay on Prince of Wales Island.

***Prince of Wales Island Corridors***

16. North Prince of Wales Island Road from the intersection with Coffman Cove Road to a suitable ferry terminal site in the vicinity of Red Bay on Sumner Strait.

17. Neck Lake Road from North Prince of Wales Island Road easterly along Neck Lake to Wale Pass.
18. Cavern Lake Road from Wale Pass westerly to North Prince of Wales Island Road.
19. Caulder Road from North Prince of Wales Island Road near El Capitan northwesterly to a suitable ferry terminal site on Labouchere Bay.
20. North Prince of Wales Island Road north, then west from Cavern Lake Road to a suitable ferry terminal location on Labouchere Bay.
21. Sandy Beach Road from Thorne Bay north to Ratz Harbor, then along the east shore of Prince of Wales Island to Coffman Cove.

***Mid-Region Access Corridors***

22. Stikine Delta Causeway to South Mitkof Island to Rynda Island to Kadin Island to mainland, near Green Point, then along the eastern side of Eastern Passage to a bridge crossing point at “the Narrows.”
23. Stikine River Corridor (according to the Alaska National Interest Lands Conservation Act [ANILCA], Section 1113).
24. A bridge crossing Eastern Passage at the Narrows between Wrangell Island and the mainland.
25. East side of Eastern Passage from the Narrows south to Bradfield Canal, then east along the north side of Bradfield Canal to the Bradfield River at the head of the Bradfield Canal.
26. Bradfield Road from the head of the Bradfield Canal along the North Fork of the Bradfield River to the Canada border at the Craig River.
27. From the head of Bradfield Canal along the south side of the Bradfield Canal west to Duck Point (or other suitable ferry terminal site on the Bradfield Canal).

***Wrangell Island Corridors***

28. From Zimovia Highway easterly along McCormack Creek, to Eastern Passage, then southerly to a suitable ferry terminal site on Fools Inlet.
29. From Zimovia Highway easterly along McCormack Creek to Eastern Passage, then to the Narrows bridge crossing site.

***Cleveland Peninsula Corridors***

30. Upper Cleveland Peninsula crossing from Bradfield Canal southeasterly along Eagle River to Point Lees to a suitable ferry terminal on the Behm Canal.

**Lower Cleveland Peninsula crossings:**

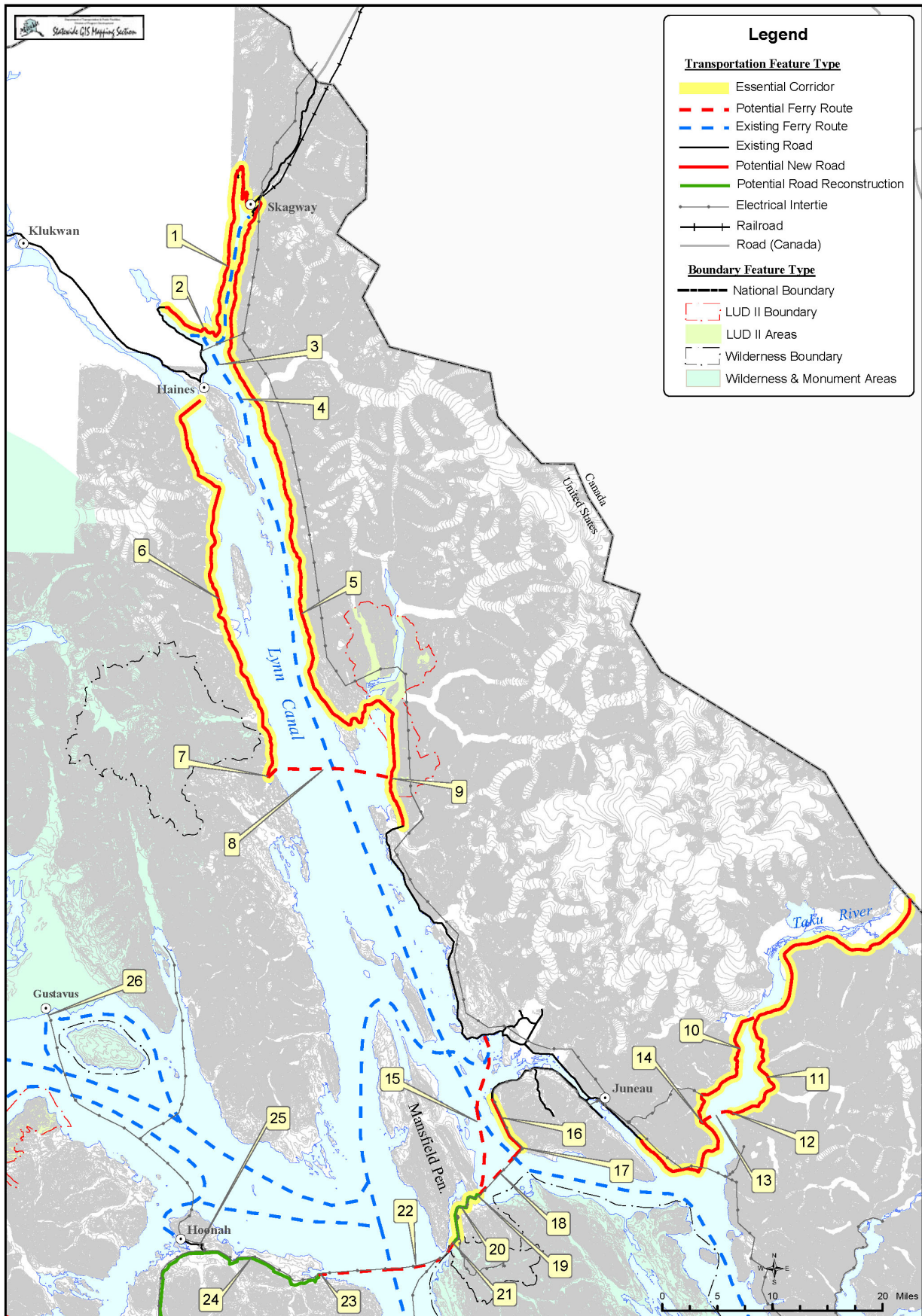
31. From a suitable ferry terminal site on Santa Anna Bay southeasterly to a suitable ferry terminal site on Spacious Bay.
32. From a suitable ferry terminal site on Frosty Bay south to Santa Anna Bay, then southeasterly to Spacious Bay, then south to Port Stewart and along the southwest shore of Port Stewart to a suitable ferry terminal site on Helm Bay.

***Revillagigedo Island Corridors***

33. From a suitable ferry terminal site at or near Claude Point, then southwesterly via Benrer and Klam creeks to Shrimp Bay, then easterly to Cedar Lake and Orchard Creek, then southeasterly along Orchard Creek to a south branch extending toward Carroll Creek, then south to Carroll Inlet, then south along the west shore of Carroll Inlet to Shelter Cove, then westerly to the head of George Inlet to Ward Lake Road.
34. From the head of George Inlet south along the west shore of George Inlet to the end of South Tongass Highway.

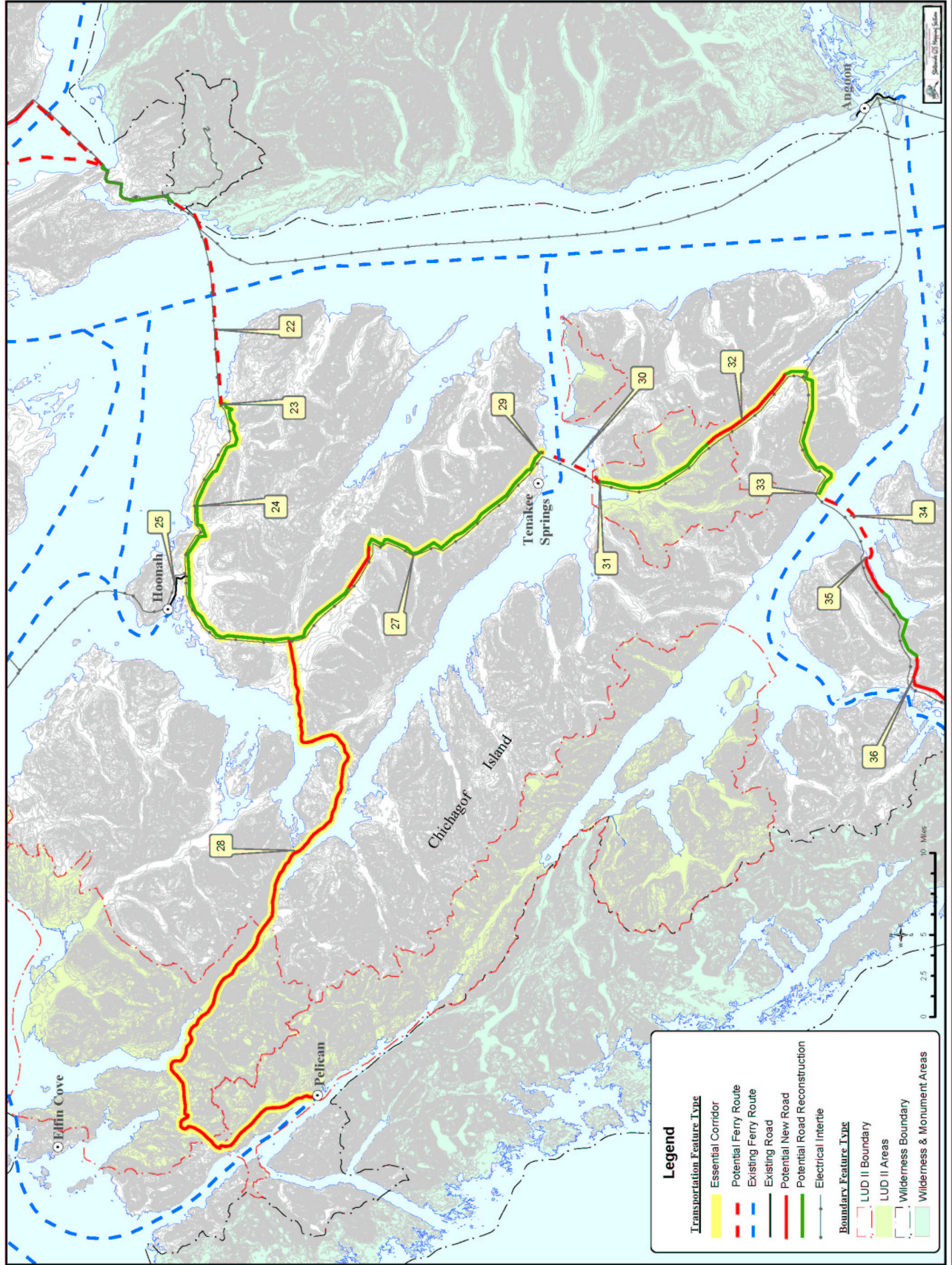


# Map 16 : Lynn Canal, Taku River & Mansfield Peninsula Crossing Corridors



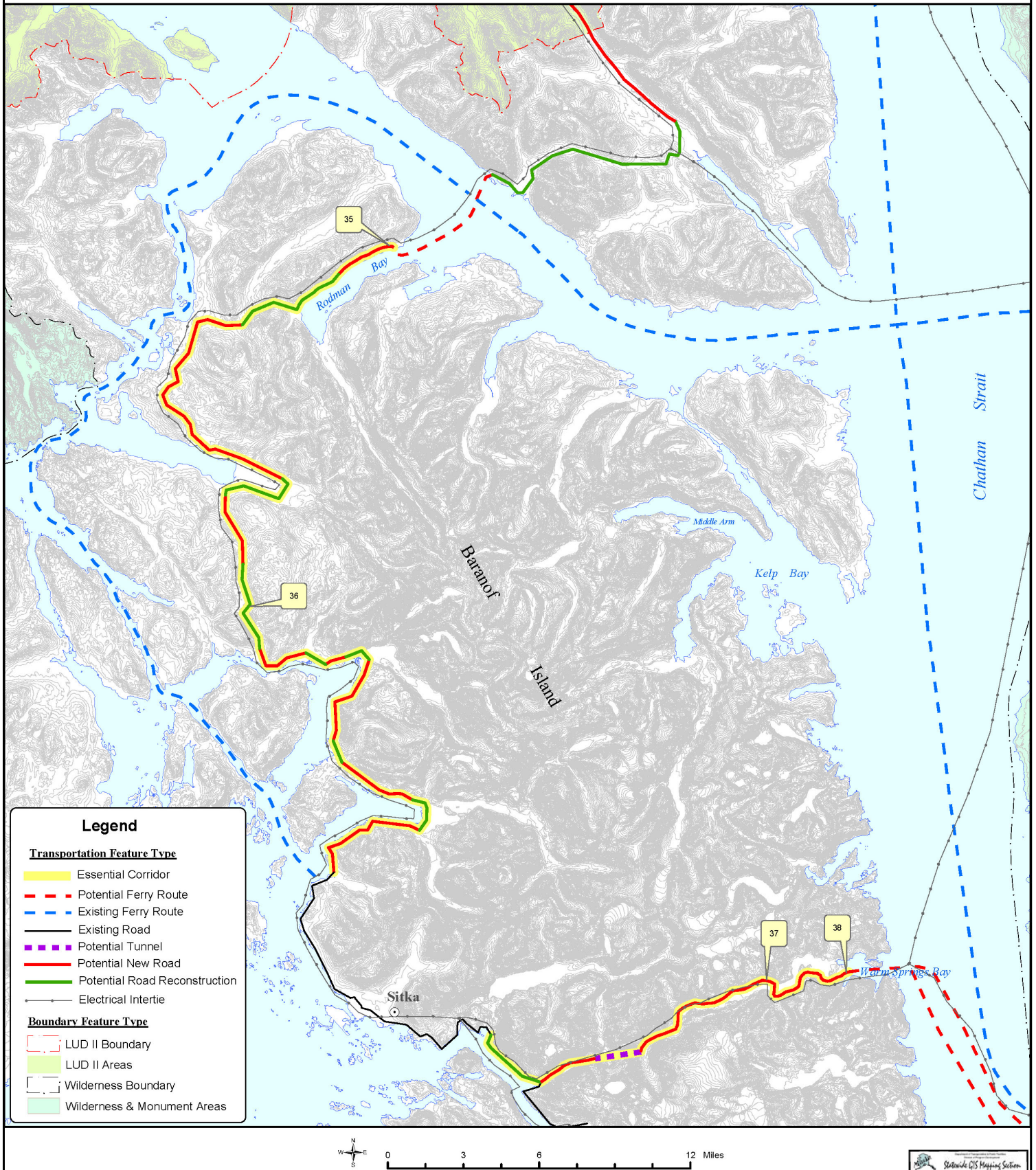


Map 17 : Chichagof Island Corridors



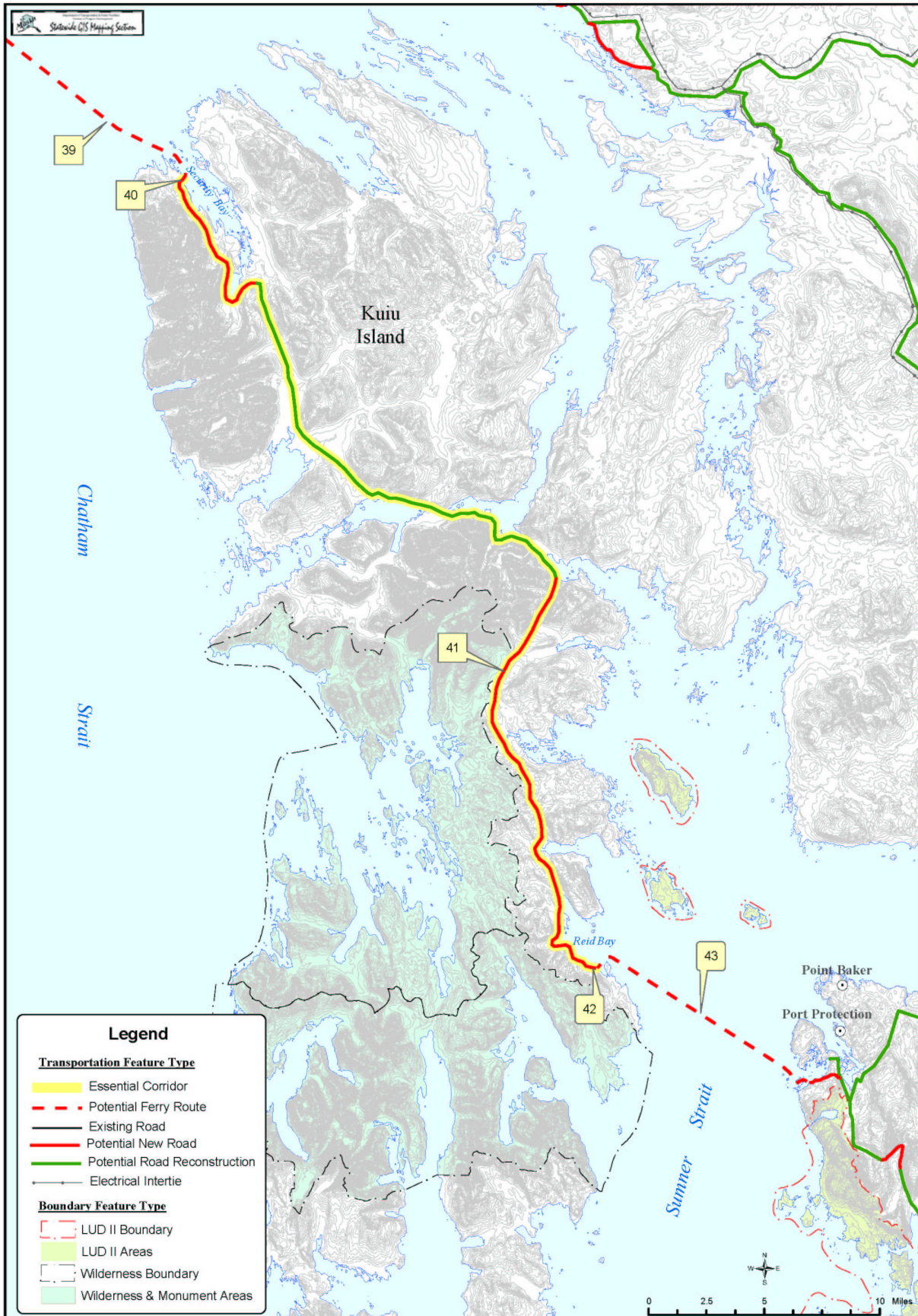


## Map 18 : Baranof Island Corridors



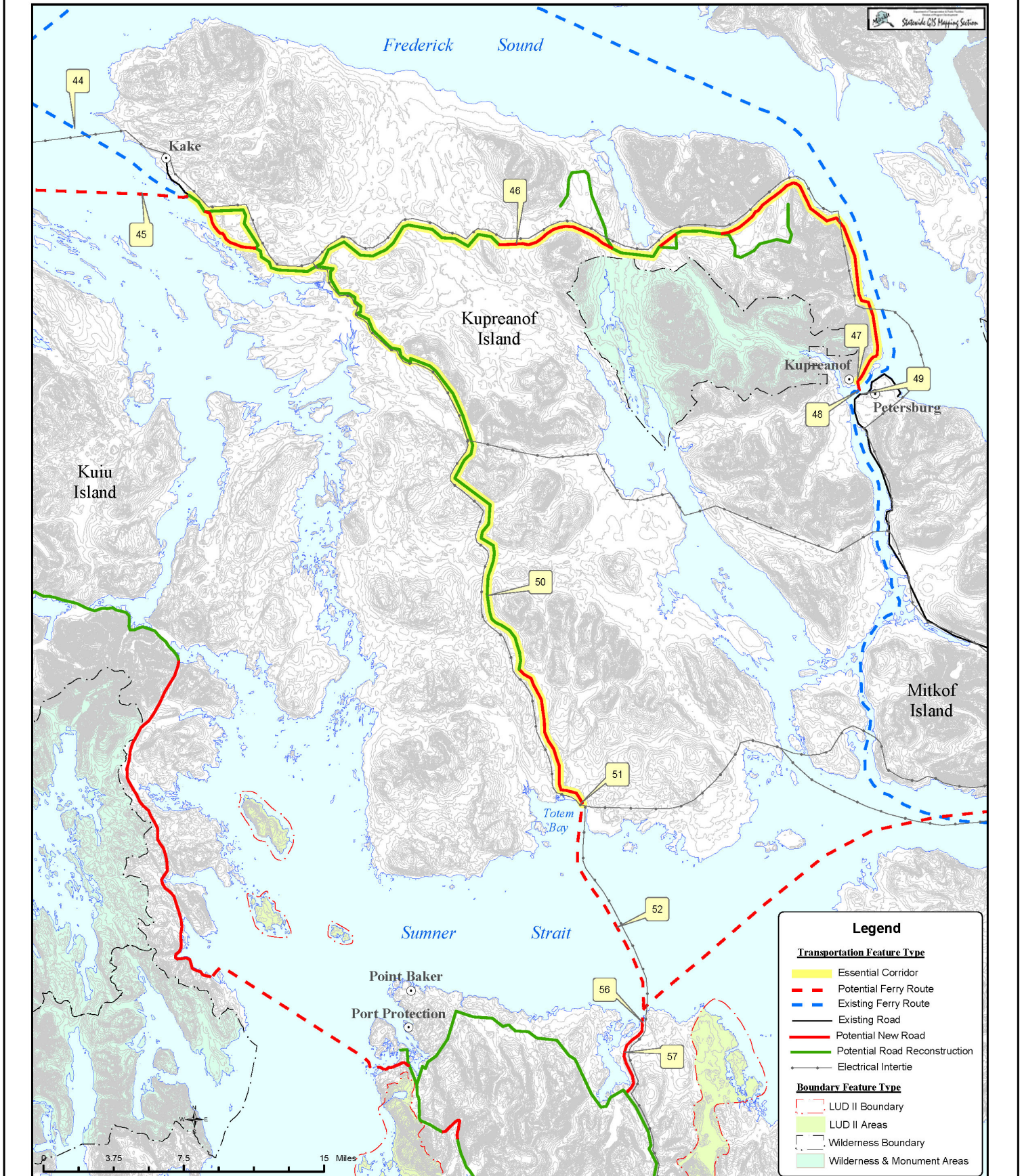


## Map 19 : Kuiu Island Corridor



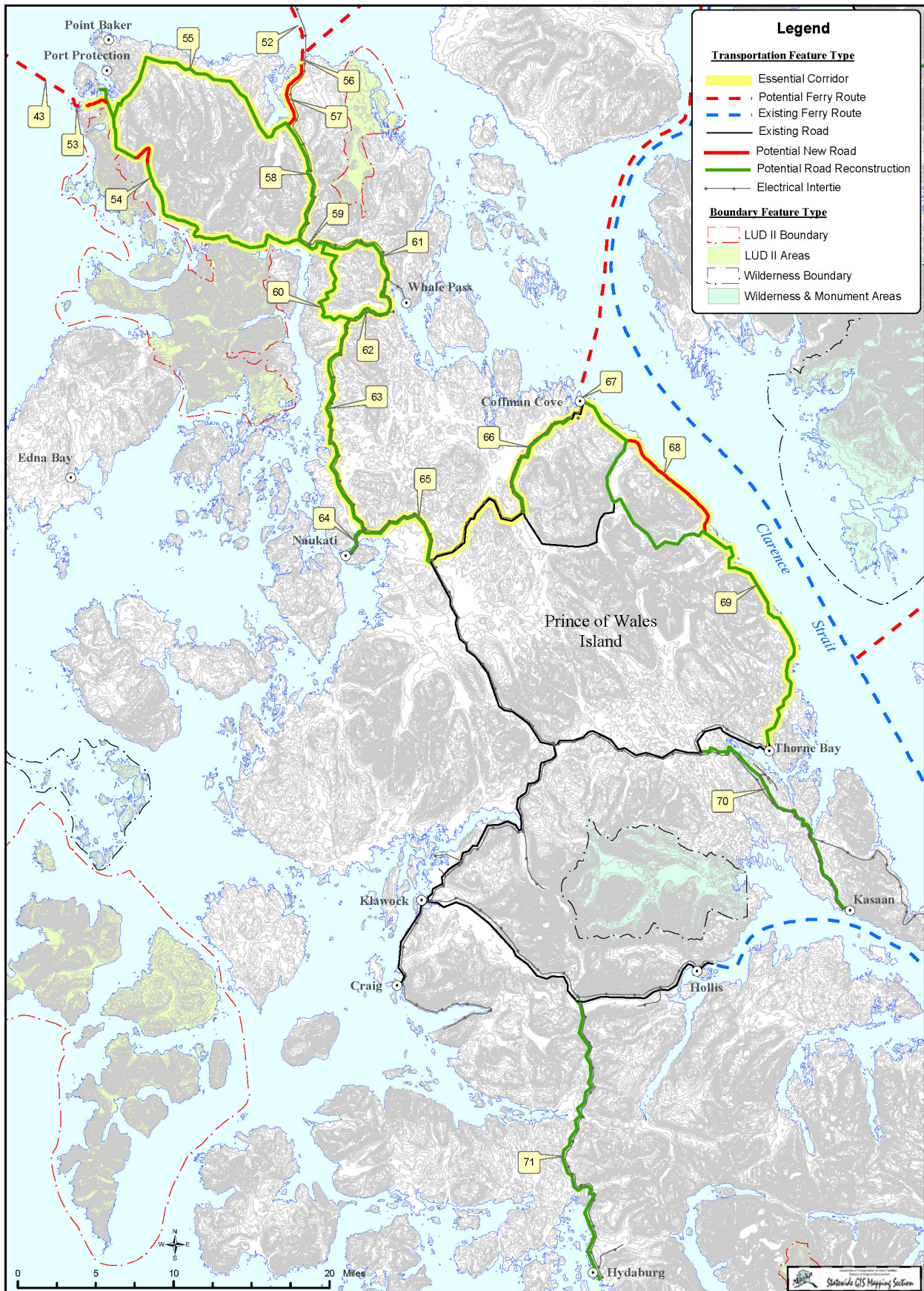


## Map 20 : Kupreanof Island Corridors



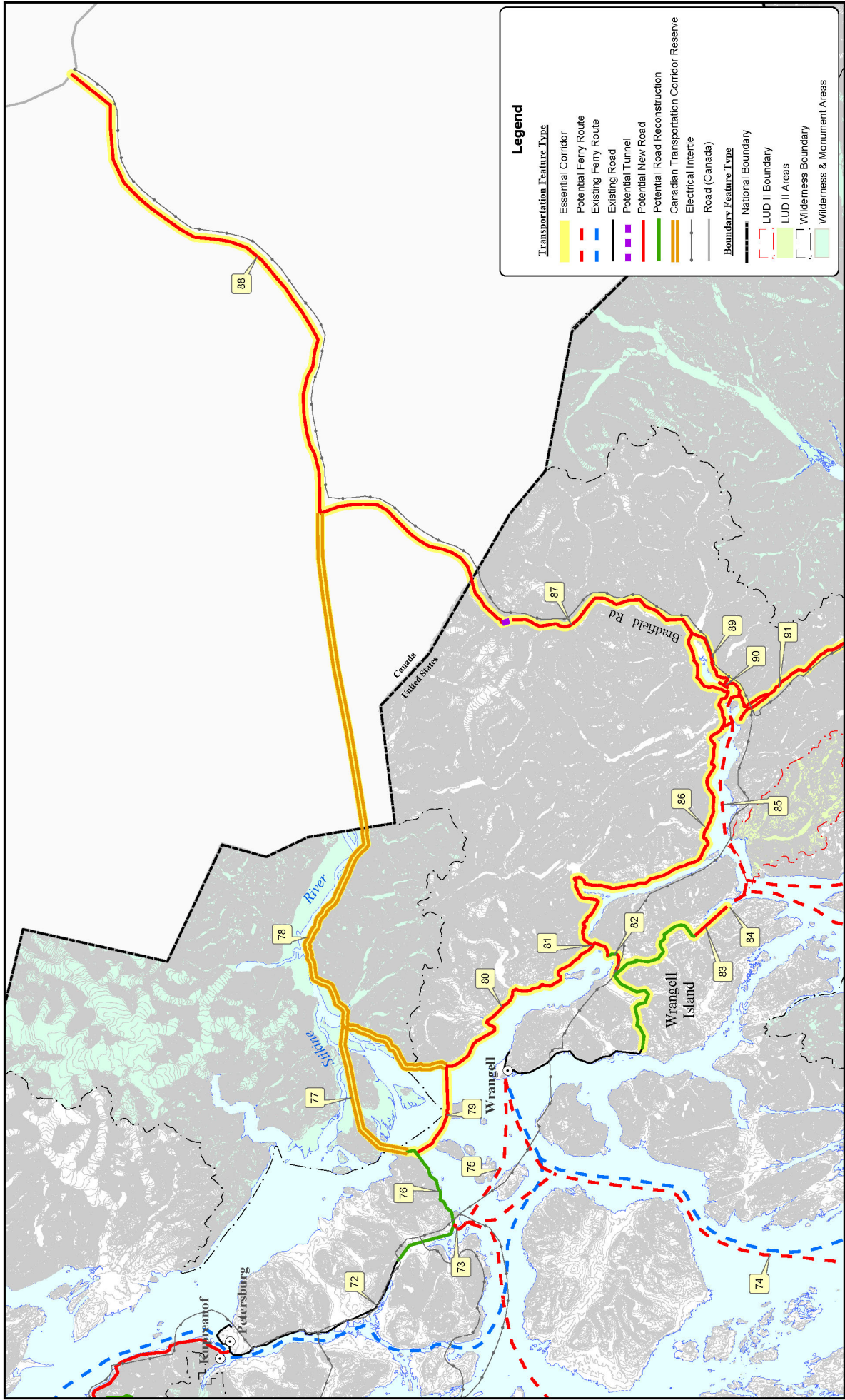


## Map 21 : Prince of Wales Island Corridors



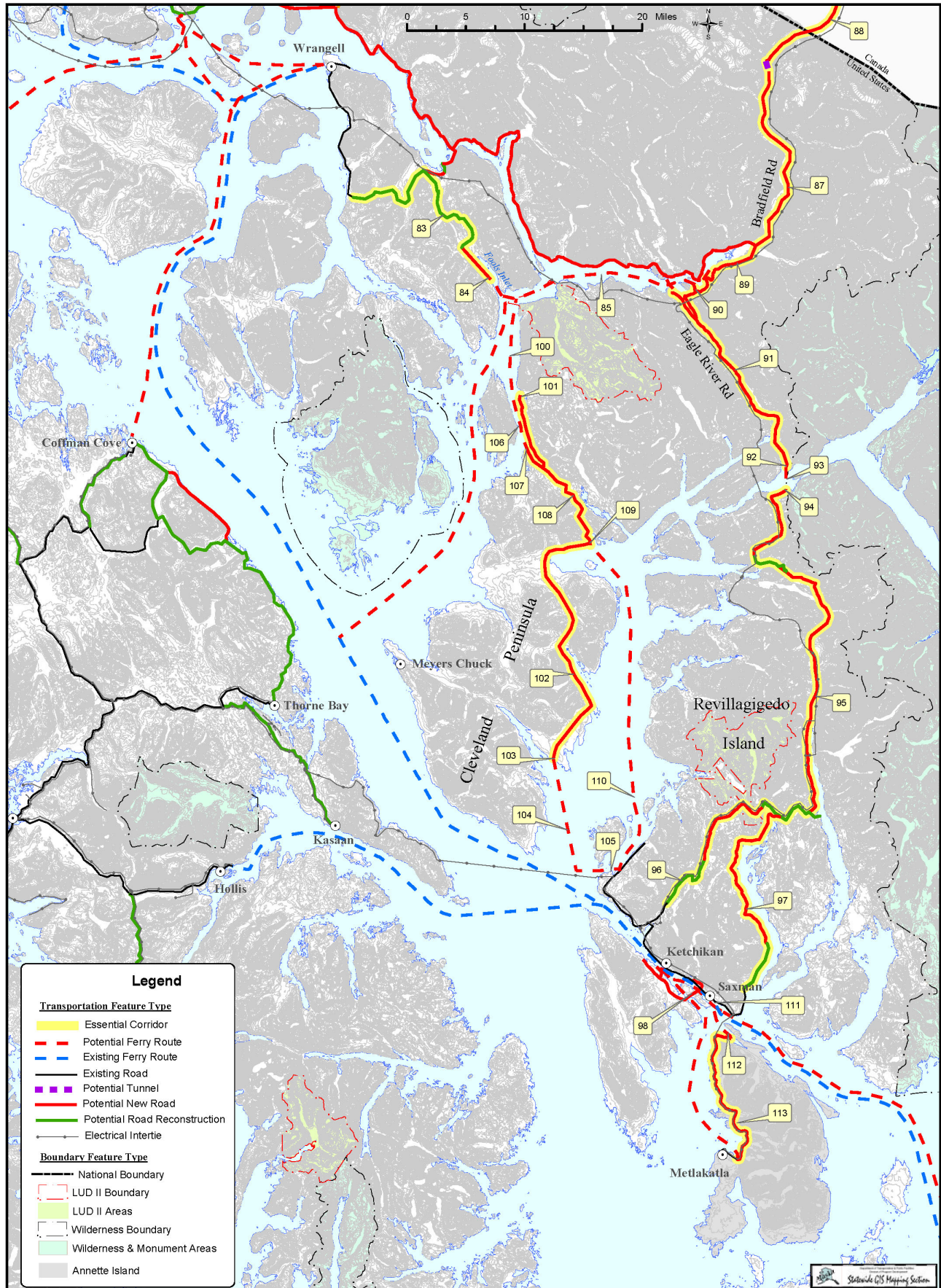


Map 22 : Mid-Region Access Corridors





## Map 23 : Revillagigedo Island & Cleveland Peninsula Corridors



## **Transportation Component Cost Estimates**

Table A-1 provides descriptive information and estimates of construction and annual operation and maintenance costs for the principal transportation components considered for each corridor. The cost estimates are based on the assumptions described below.

### ***Marine Components***

Cost estimates are based on six classes of vessels as follows:

1. The fast vehicle ferry with 36.8-mile-per-hour- (mph) service speed and a capacity of 35 cars. The *Fairweather* will be the lead ship in the Fairweather class of fast vehicle ferries.
2. The Inter-Island Ferry Authority's design with 17.3-mph speed and a capacity of 30 cars.
3. A modified 235-foot LeConte class with 17.3-mph speed and a capacity of 35 cars.
4. A small "double ender" design like the Ketchikan Airport ferry with 13.8-mph speed and a capacity of 20 cars.
5. The Lituya class with 13.8-mph service speed, a capacity of 18 cars, and an open car deck. The *Lituya* began service between Metlakatla and Ketchikan in spring 2004.
6. A new "mainliner" ferry with 19.0-mph speed and a capacity of at least 100 vessels.

### ***Highway Components***

This study assumes the Alaska Department of Transportation and Public Facilities (department or ADOT&PF) would first build lower-speed roads – interim typical sections – that could be upgraded later. These interim typical sections are shown in Figure A-1.

As can be seen, these roads would be narrow. They would be paved and posted for moderate speed. The average total cost of the roads would range from \$2.3 million per mile for design and construction of roads that would travel over gentle country to more than \$4 million per mile for roads that would cross rugged country.

Table A-1 also includes the 113 components shown on Maps 16 to 23. In addition to cost estimates for each component, basic features are provided.

**Table A-1. Descriptions of and Cost Estimates for SATP Components**

Segment Map Ref. Number	Description	Recommended Interim Typical Section or Vessel (capacity)	Estimated Interim Average Speed (mph)	Segment Length Statute (miles)	Ferry Service Frequency (trips per day)	Total Estimated Capital Cost (\$ 000)	Total Annual Estimated M&O Cost (\$ 000)
<b>Lynn Canal Corridor (See Map 16)</b>							
1	Haines - Skagway Road	Arterial	40	35		130,000	400
2	Haines Ferry Terminal Improvements					7,000	10
3	Haines - Katzeihin Shuttle Ferry ( <i>Aurora</i> )	Aurora	16.7	6.5	9	5,000	2,900
4	Katzeihin Ferry Terminal					15,700	25
5	Lynn Canal Road (Echo Cove to Skagway)	Arterial	45	68		265,000	1,500
6	West Lynn Canal Road (Haines to William Henry Bay)	Arterial	45	39		179,000	1,200
7	William Henry Bay Ferry Terminal					14,300	25
8	Shuttle Ferry Link: William Henry Bay - Berners Bay	2 Car Ferries (42)	17.3	13	12	59,000	4,900
9	Berners Bay Ferry Terminal					16,700	25
<b>Taku River Corridor (See Map 16)</b>							
10	Taku Highway Route (Bridge crossing of Taku River)	Arterial	45	49		290,000	442
11	Taku Highway Route (Ferry crossing of Taku Inlet - see 12-14)	Arterial	45	49		160,000	428
12	West Taku Ferry Terminal (Lag Point)					7,000	10
13	Taku Inlet Shuttle Ferry	Mod- <i>LeConte</i> (35)	17.3	3.1	6	25,000	1,692
14	East Taku Ferry Terminal (South side of Jaw Point)					7,000	10
<b>Mansfield Peninsula Crossing (See Map 16)</b>							
15	Ferry Link: Auke Bay/Young Bay Ferry	Mod- <i>Lituya</i> (20)	13.8	15.3	3	12,000	1,263
16	Douglas Highway Extension to Middle Point	Island Arterial	35	5.29		14,630	47
17	Middle Point Ferry Terminal					7,000	10
18	Ferry Link: Middle Point/Young Bay Ferry	Mod- <i>Lituya</i> (20)	13.8	6.4	6	12,000	1,263
19	Young Bay Ferry Terminal					7,000	10
20	Hawk Inlet Road	Island Collector	30	6.31		14,490	52
21	Hawk Inlet Ferry Terminal					7,000	10

**Table A-1. Descriptions of and Cost Estimates for SATP Components**

Segment Map Ref. Number	Description	Recommended Interim Typical Section or Vessel (capacity)	Estimated Interim Average Speed (mph)	Segment Length Statute (miles)	Ferry Service Frequency (trips per day)	Total Estimated Capital Cost (\$ 000)	Total Annual Estimated M&O Cost (\$ 000)
<b>Chichagof Island Corridors (See Map 17)</b>							
22	Ferry Link: Hawk Inlet/Whitestone Harbor	Mod-Lituya (20)	13.8	15.0	3	12,000	1,263
23	Whitestone Harbor Ferry Terminal					7,000	10
24	Whitestone Harbor Road to Hoonah Cutoff Road	Island Collector	30	12.96		29,900	106
25	Hoonah Cutoff Road	Island Collector	30	2.88		4,310	15
26	Gustavus Ferry Terminal					11,000	50
27	Hoonah - Tenakee Inlet Road: Hoonah Cutoff to Tenakee Inlet	Island Collector	30	30.64		70,470	251
28	Pelican Cutoff Road	Island Collector	30	47.64		138,230	391
29	Tenakee Inlet Ferry Terminal					7,000	10
30	Ferry Link: Tenakee Inlet Ferry	Double end (20)	13.8	2.7	10	8,000	864
31	Kadashan Ferry Terminal					7,000	10
32	Kadashan Road	Island Collector	30	24.15		64,010	198
33	Peril Strait Ferry Terminal					7,000	10
34	Ferry Link: Peril Strait Ferry	Double end (20)	13.8	6.2	5	8,000	864
<b>Baranof Island Corridors (See Map 18)</b>							
35	Rodman Bay Ferry Terminal					12,000	135
36	Rodman Bay Road	Island Arterial	35	48.83		148,950	869
37	Warm Springs Bay Road (Sawmill Creek Road to Warm Springs Bay)	Island Arterial	35	18.01		234,410	950
38	Warm Springs Bay Terminal					15,000	135
<b>Kuiu Island Corridor (See Map 19)</b>							
39	Ferry Link: Warm Springs Bay - Kuiu Island Ferry	Mod-LeConte (35)	17.3	25.3	2	25,000	1,692
40	Security Bay Ferry Terminal					7,000	10
41	Kuiu Road: Security Bay to Reid Bay	Island Collector	30	48.7		115,920	399
42	Reid Bay Ferry Terminal					7,000	10
43	Ferry Link: Sumner Strait Ferry (Reid Bay to Labouchere Bay)	Mod-Lituya (20)	13.8	11.5	5	12,000	1,263
<b>Kupreanof Island Corridors (See Map 20)</b>							
44	Ferry Link: Rodman Bay - Kake Ferry	Mod-LeConte (35)	17.3	82	2	25,000	1,692
45	Ferry Link: Warm Spring Bay - Kake Ferry	Mod-LeConte (35)	17.3	37.4	2	25,000	1,692
46	Kake - Petersburg Road	Island Collector	30	50.61		131,560	415
47	Kupreanof Ferry Terminal					4,000	10



**Table A-1. Descriptions of and Cost Estimates for SATP Components**

Segment Map Ref. Number	Description	Recommended Interim Typical Section or Vessel (capacity)	Estimated Interim Average Speed (mph)	Segment Length Statute (miles)	Ferry Service Frequency (trips per day)	Total Estimated Capital Cost (\$ 000)	Total Annual Estimated M&O Cost (\$ 000)
48	Ferry Link: Kupreanof Ferry (Wrangell Narrows)	Double end (20)	13.8	1.2	10	4,000	738
49	Petersburg Ferry Shuttle Terminal					4,000	10
50	Kake - Totem Bay Road	Island Collector	30	45.65		105,000	374
51	Totem Bay Ferry Terminal					7,000	10
52	Ferry Link: Sumner Strait Ferry to Red Bay	Mod-Lituya (20)	13.8	12.3	3	12,000	1,263
<b>Prince of Wales Island Corridors (See Map 21)</b>							
53	Labouchere Bay Ferry Terminal					7,000	10
54	Calder Road: Labouchere Bay to NPOWI Road near El Capitan	Island Collector	30	22.03		59,870	181
55	NPOWI Road: Labouchere Bay to Red Bay Cutoff	Island Collector	30	16.75		38,520	137
56	Red Bay Terminal					7,000	10
57	Red Bay Cutoff	Island Collector	30	4.51		10,370	37
58	NPOWI Road: Red Bay Cutoff to Calder Road Intersection	Island Collector	30	8.07		18,560	66
59	NPOWI Road: Calder Road Intersection to Cavern Lake Rd.	Island Collector	30	2.14		6,460	18
60	NPOWI Road: Cavern Lake Road to Neck Lake Road Inters.	Island Collector	30	7.83		18,010	64
61	Cavern Lake Road: NPOWI Road to Whale Pass	Island Collector	30	5.87		19,320	48
62	Neck Lake Road: Whale Pass to NPOWI Road	Island Collector	30	5.7		13,800	47
63	NPOWI Road: Neck Lake Road to Naukati Cutoff	Island Collector	30	15.11		34,750	124
64	Naukati Cutoff	Island Collector	30	2.25		5,180	18
65	NPOWI Road: Naukati Cutoff to Coffman Cove Road	Island Collector	30	7.48		17,200	61
66	Coffman Cove Road: NPOWI Rd. Intersection to Coffman Cove	Island Collector	30	17.52		18,400	144
67	Coffman Cove Terminal					9,400	25
68	Sandy Beach Road: Ratz Harbor to Thorne Bay	Island Collector	30	17.63		40,550	145
69	Sandy Beach Road: Coastal Corridor Coffman C. to Ratz Harbor	Island Collector	30	12.25		28,180	100
70	Kasaan Road (Thorne Bay Rd. to Kasaan)	Island Collector	30				
71	Hydaburg Road	Island Collector	30	21		36,220	0
72	South Mitkof Hwy. Reconstruction: Crystal Lake to Blind Slough	Island Collector	35	6.99		10,920	57
73	South Mitkof Ferry Terminal					14,500	10

**Table A-1. Descriptions of and Cost Estimates for SATP Components**

Segment Map Ref. Number	Description	Recommended Interim Typical Section or Vessel (capacity)	Estimated Interim Average Speed (mph)	Segment Length Statute (miles)	Ferry Service Frequency (trips per day)	Total Estimated Capital Cost (\$ 000)	Total Annual Estimated M&O Cost (\$ 000)
74	Ferry Link: IFA Ferry, South Mitkof/Wrangell/Coffman Cove	IFA (30)	17.3	49.5	1	17,000	1,276
75	Ferry Link: South Mitkof to Wrangell Shuttle Ferry	IFA (30)	17.3	13.8	1	17,000	1,276
76a	South Mitkof Hwy. Reconstruction: Blind Slough to Causeway	Island Collector	30	5.9		9,300	50
76b	South Mitkof Hwy. Reconstruction: Blind Slough to Dry Straits Crossing	Island Arterial	35	8		13,600	67
77	Stikine Highway: Dry Straits & Stikine River Crossing	Island Arterial	35	12.25		187,000	150
78	Stikine Highway: Eastern Passage Narrows Bridge to Border	Island Arterial	35	47.64		110,000	391
79	Stikine Causeway	Island Collector	30	8.26		460,000	83
80	Eastern Passage Highway to Narrows Bridge	Island Collector	30	18.45		42,320	151
81	Narrows Bridge	Island Collector	30	0.8		75,000	40
82	Wrangell Cutoff: Narrows Bridge to Fools Inlet Road	Island Collector	30	4.81		11,060	39
83	Fools Inlet Road: Zimovia Highway to Fools Inlet	Island Collector	30	22.08		50,830	181
84	Fools Inlet Ferry Terminal					7,000	10
85	Bradfield Ferry: Fools Inlet to Bradfield Canal Duck Point Terminal	Mod- <i>LeConte</i> (35)	17.3	17.3	5	25,000	1,692
86	Eastern Passage Hwy: Narrows Bridge to Bradfield Road Junction	Island Collector	30	41.54		123,140	341
87	Bradfield Road: Bradfield Road Junction to Canada Border	Rural Collector	30	24.13		220,000	240
88	Bradfield Road: Canada Border to Iskut & Cassiar Hwy. #37	N/A	N/A	48		N/A	N/A
89	Bradfield Road: Bradfield Road Junction to Duck Point Term.	Rural Collector	30	8.02		30,000	66
90	Duck Point Ferry Terminal					7,000	10




**Table A-1. Descriptions of and Cost Estimates for SATP Components**


Segment Map Ref. Number	Description	Recommended Interim Typical Section or Vessel (capacity)	Estimated Interim Average Speed (mph)	Segment Length Statute (miles)	Ferry Service Frequency (trips per day)	Total Estimated Capital Cost (\$ 000)	Total Annual Estimated M&O Cost (\$ 000)
<b>Revillagigedo Island and Upper Cleveland Peninsula Corridors (See Maps 22 &amp; 23)</b>							
91	Eagle River Road: Bradfield Canal Duck Point to Behm Canal	Island Collector	30	19.53		50,400	160
92	Point Lees Ferry Terminal					7,000	10
93	Ferry Link: Behm Canal Ferry	Double end (20)	13.8	2.3	9	8,000	864
94	Claude Point Ferry Terminal					7,000	10
95	Revillagigedo Highway: Behm Canal to George Inlet	Island Arterial	35	43.5		130,180	387
96a	Harriet Hunt Lake Road: George Inlet to Harriet Hunt Lake	Island Arterial	35	10.98		30,300	98
96b	Harriet Hunt Lake/Ward Lake Road Upgrade	Island Arterial	35	6		10,350	53
97a	George Inlet Road: Head of George Inlet to South Tongass Hwy.	Island Arterial	35	14.3		42,690	127
97b	South Tongass Highway Reconstruction & Paving	Island Arterial	35	4.55		7,940	40
98	Bridge to Gravina Island	Arterial	35			230,000	100
99	<b>Lower Cleveland Peninsula Corridors</b>						
100	Ferry Link: Fools Inlet/Frosty Bay Ferry	Mod-Lituya (20)	13.8	10.4	5	12,000	1,263
101	Frosty Bay Ferry Terminal					7,000	10
102	Cleveland Peninsula Road: Frosty Bay to Helm Bay	Island Collector	30	39.57		10,670	324
103	Helm Bay Ferry Terminal					7,000	10
104	Ferry Link: Helm Bay Ferry to North Tongass Hwy. Terminal	Mod-Lituya (20)	13.8	13.0	4	12,000	1,263
105	North Tongass Hwy. Ferry Terminal					7,000	135
106	Ferry Link: Fools Inlet/Santa Anna Inlet Ferry	Mod-Lituya (20)	13.8	15.4	3	12,000	1,263
107	Santa Anna Ferry Terminal					7,000	10
108	Cleveland Peninsula Cutoff: Santa Anna to Spacious Bay	Island Collector	30	10.62		24,380	87
109	Spacious Bay Ferry Terminal					7,000	10
110	Ferry Link: Spacious Bay Ferry to North Tongass Hwy. Terminal	Mod-LeConte (35)	17.3	33.4	2	25,000	1,692

**Table A-1. Descriptions of and Cost Estimates for SATP Components**

Segment Map Ref. Number	Description	Recommended Interim Typical Section or Vessel (capacity)	Estimated Interim Average Speed (mph)	Segment Length Statute (miles)	Ferry Service Frequency (trips per day)	Total Estimated Capital Cost (\$ 000)	Total Annual Estimated M&O Cost (\$ 000)
<b>Metlakatla Access Corridor (See Map 23)</b>							
111	Saxman Ferry Terminal					7,500	10
112	Annette Bay Ferry Terminal					7,000	10
113	Walden Point Road	Rural Arterial	45	14.29		55,000 <sup>1</sup>	N/A

 = Road

 = Ferry terminal

 = Ferry links

 = Total

IFA = Inter-Island Ferry Authority

N/A = Not available

M&O = Maintenance and operations

NPOWI = North Prince of Wales Island

Mod- = Modified vessel type

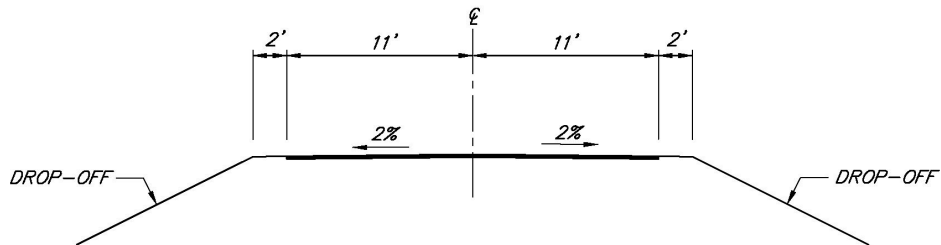
<sup>1</sup> Walden Point Road capital dollar estimate represents funding needed to complete the road in addition to the military training program.

Notes:

All costs are preliminary and include design costs. Values are expressed in current (2003) dollars.

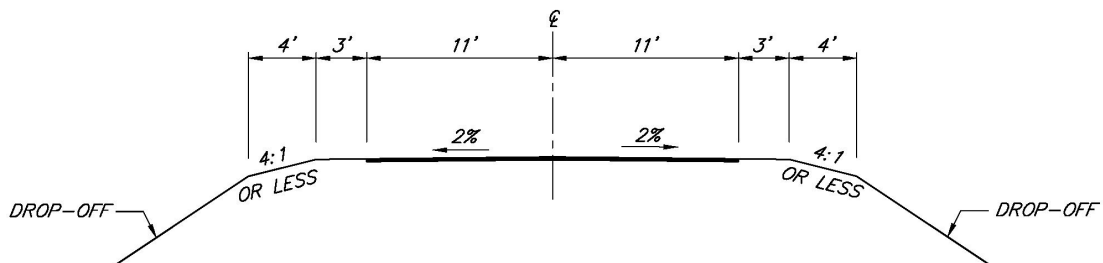
Island collector indicates a rural road expected to have lower traffic volumes.

Island arterial indicates a road reachable from a large community that is expected to have higher traffic volumes.



***ISLAND COLLECTOR***

POSTED SPEED: 30 MPH  
SPECIAL MEASURES FOR CURVE & GRADE SECTIONS (ONLY)  
VOLUMES BELOW 400 ADT



***ISLAND ARTERIAL***

POSTED SPEED: 35 MPH  
SPECIAL MEASURES FOR CURVE & GRADE SECTIONS (ONLY)  
VOLUMES BELOW 400 ADT

**Figure A-1. Interim Typical Sections**

## **Proposed Highway System Designations**

This part of Appendix A identifies how the changes in the SATP will require revisions and additions to the National Highway System (NHS), the Alaska Highway System (AHS), and Forest Highway (FH) designations. In summary, a number of routes already identified as AHS would be added to the NHS, other routes would be added to the AHS, and several routes would be designated as FH routes.

Map 24 depicts proposed highway system designations for SATP highway corridors. Ferry terminals at the end of NHS routes are designated NHS terminals, and those at the end of AHS routes are designated AHS terminals. Ferry routes connecting NHS terminals are designated NHS routes, and those connecting AHS terminals are designated AHS routes. Marine shuttle-ferry routes and ferry terminals connecting FH routes to the regional transportation system are included in FH route designations.

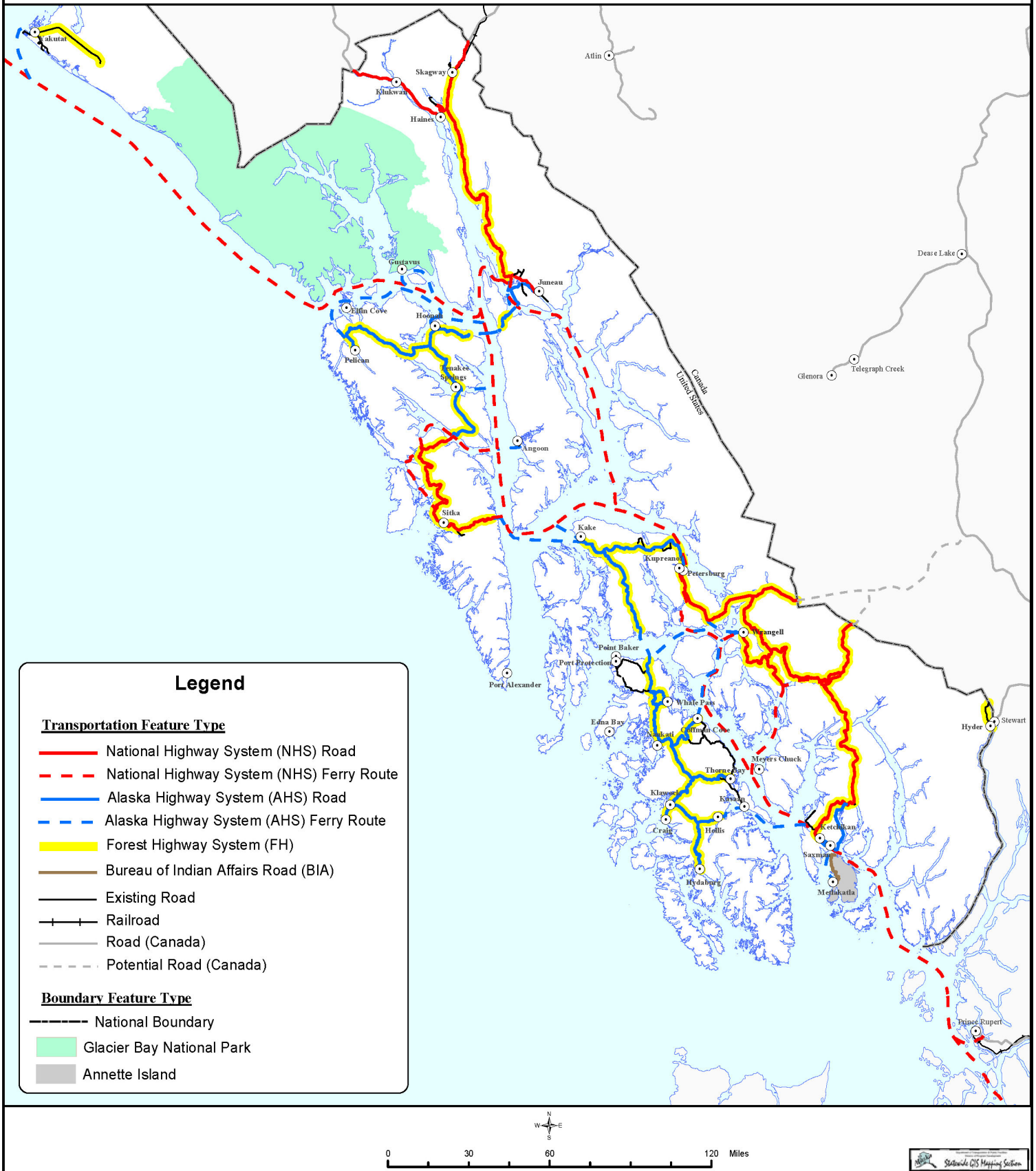
One aspect of bringing a comprehensive transportation network to Southeast Alaska is that the region can be more fully integrated into the NHS. Currently, two segments of the NHS end at tidewater on Lynn Canal, but there is no through highway link to Juneau or other principal destinations south of Skagway and Haines. Because the NHS consists of routes important to interstate travel, national defense, and the nation's commerce, it makes sense to extend these types of highway links into Southeast Alaska and to the state capital.

The SATP preferred alternative for Juneau Access would construct 68 miles of new NHS route that would connect the Klondike Highway, an NHS route, with the end of the Glacier Highway at Echo Cove. The 26-mile segment of Glacier Highway from Echo Cove to Auke Bay Terminal would become an NHS route, and would connect to the existing 14-mile NHS route that extends from the Auke Bay Terminal past the airport to downtown Juneau.

In southern Southeast Alaska, Mid-Region Access would construct a new highway west from the continental highway system in Canada. This NHS route would connect to the road system in Ketchikan, the region's second most populous community. In combination with Gravina Access, Mid-Region Access would provide a through highway link to the Ketchikan International Airport. There would also be a connection from Mid-Region Access to Wrangell and Petersburg. This connection would be part of the NHS route that connects Ketchikan to Sitka and Juneau.

As part of the through highway connection between Ketchikan, Sitka, and Juneau, a segment of the Mitkof Highway would be an NHS route because it connects ferry terminals on both sides of Wrangell Narrows. For funding

# Map 24 Proposed Highway Designations



purposes, this 26-mile segment is already treated as NHS in the Statewide Transportation Improvement Program (STIP).

The construction of the two new NHS routes would connect the two largest population centers in Southeast Alaska with the continental highway system.

On Baranof Island, an eight-mile NHS route runs from the airport through town to the existing site for the ferry terminal. A new highway would be constructed to a new location for the ferry terminal on or near Chatham Strait. Depending on the selected alignment, the NHS route would be either an extension of the existing route or would tie to the existing route in the downtown vicinity.

The AHS complements the NHS, and includes those routes of statewide significance that are not part of the NHS. Several routes discussed above are already part of the AHS, including the Glacier Highway beyond the Auke Bay Terminal, part of the Mitkof Highway and the two trunk highways of the Ketchikan road system. In Ketchikan, the future NHS link would include the connection to Gravina Island, and would extend along either the North Tongass Highway or South Tongass Highway from the existing NHS segment (three miles in length), which serves the Ketchikan core.

On Prince of Wales Island, 81 miles of AHS routes link the island's three most populous communities with each other and transportation gateways (ferry and airport) for travel to and from the island. This network needs to be expanded. The road south to Hydaburg, which requires a major upgrade to current standards, needs to be added to the AHS. North from Control Lake junction, the AHS includes 15 miles of state highway. It is recommended that this designation be extended (along with state maintenance) to a ferry terminal in Coffman Cove. In addition the existing FH 43 on Prince of Wales Island, which reaches El Capitan Junction, needs to be extended north to a ferry terminal site near Red Bay, across Sumner Strait from Totem Bay. The connecting routes to Whale Pass via Cavern Lake and Neck Lake roads are recommended for inclusion in the AHS with the route to Red Bay.

On Kupreanof Island, the proposed road east from Kake to Petersburg is partially constructed, and already designated as FH. This route, part of which is not built, needs to be added to the AHS. Addition of this route to the AHS would recognize that this route is of statewide significance because it connects two communities and extends the regional highway system, along with providing access to recreational sites and areas of resource development. South from the constructed portion of the proposed road from Kake to Petersburg, an existing road extends toward Totem Bay at the south end of Kupreanof Island. The constructed and unconstructed portions of this route need to be added to the AHS. This route is of statewide significance because it provides a direct connection between Kake and Prince of Wales



Island and offers an alternative regional route between Ketchikan and the communities in the Northern Panhandle.

The roads and corridors identified as essential by the SATP on Chichagof Island between Hoonah, Whitestone Harbor, Pelican, and Tenakee Inlet, including the road up Kadashan to Peril Strait, are recommended for addition to the AHS. Other routes recommended for inclusion in the AHS are North Douglas Highway and its extension to Middle Point and the road between Young Bay and Hawk Inlet. All of these roads, with the exception of the North Douglas Highway, are recommended additions to the FH system.

FH designations are established and administered by the Federal Highway Administration (FHWA), Western Federal Lands Highway Division, through a tri-agency process that coordinates efforts of representatives from FHWA, the Forest Service, and ADOT&PF. Representatives of the three agencies meet annually (at a minimum) to report progress, reach decisions on the FH program, and discuss project development issues. FH designations are primarily for funding purposes, and overlay other highway designations.

South from the constructed portion of the proposed road from Kake to Petersburg, an existing road extends toward Totem Bay at the south end of Kupreanof Island. The constructed and unconstructed portions of this route need to be designated as FH. Similarly, existing FH 43 on Prince of Wales Island, which reaches El Capitan Junction, needs to be extended north to a ferry terminal site near Red Bay, which is across Sumner Strait from Totem Bay. In addition, the connecting routes to Whale Pass via Cavern Lake and Neck Lake roads are recommended FH routes.

In conjunction with major access improvements to and between Juneau, Ketchikan, and Sitka, four extensions of existing FH routes are needed. North of Juneau, FH 2 (Glacier Highway) extends from Auke Bay Terminal north for 31 miles, including an unconstructed portion to Sawmill Creek. This designation needs to be extended to the junction with the Klondike Highway in Skagway. In Ketchikan, FH 39 (Ward Lake Road) traverses 24 miles to Shelter Cove, and needs to be extended to the Canadian border. South from Wrangell, FH 16 (Zimovia Highway) reaches the national forest boundary, and needs to be extended to Fools Inlet. Finally, FH 11 crosses Starrigavan Creek near the Sitka Terminal, and needs to be extended to Rodman Bay. East from Sitka, the proposed road to Warm Spring Bays is already designated FH 47.

# **Appendix B**

## **Benefit-Cost Analyses**



## **APPENDIX B. BENEFIT-COST ANALYSES**

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This appendix summarizes the methodologies, the benefit-cost analyses, and models applied during the evaluation of transportation systems as part of the 2004 update to the Southeast Alaska Transportation Plan (SATP). The benefit-cost model employed is integrated with a regional intercommunity travel demand model that is based on a comparative evaluation of alternative modal choices, trip frequency, fare, and travel time. These models were originally developed as part of the 1997 SATP. The benefit-cost evaluation tool provides revenue generation and other user benefit analyses that were employed in comparisons of new systems to those previously explored as part of the 1997 SATP.

### **Preliminary Screening Process**

An initial set of more than 120 individual roadway, ferry, terminal, and vessel improvements were identified as possible transportation system improvements within the Southeast region at the onset of the SATP update in fall 2003. These individual projects were combined into logical combinations of corridor segments, subregional improvements, and regional systems to evaluate alternative systems and trade-offs in roadway and ferry options. Evaluation criteria were developed for each of these combinations on a number of area and regional routes, which either currently exist or would be new connections. These preliminary screening criteria included very basic elements that considered:

- Capacity
- Travel time
- Convenience to user (which also include predictability and regularity of service)
- Cost to state
- Cost to user

Attachment 1 contains a summary of individual and systems of components evaluated as part of a preliminary screening process that was used to identify those elements that underperformed on individual routes, corridors, or a systemwide basis. Specific elements of the 2004 SATP transportation system used in the detailed evaluation of travel demand and benefit-cost analyses included changes in travel time and service frequency that would be

provided under each scenario, and updated capital, maintenance, and operating costs necessary to support each scenario.

Intercommunity travel demand forecasts were prepared for the 2004 SATP schedules as well as for those of SATP Addendum 1 for the 2025 horizon year. Roadway travel demand forecasts for the Juneau Access road are referenced from the ongoing environmental and economic analyses. Roadway travel demand estimates for the Bradfield Road were prepared based on previous estimates prepared as part of the 1999 SATP. They include resource extraction trips and increased latent demand to the nearby communities of Wrangell, Petersburg, Prince of Wales Island, and Ketchikan. These forecasts were added to travel via Alaska Marine Highway System (AMHS) ferry services in the region, but are also summarized separately and converted into daily traffic forecasts on an average annual basis and during peak summer months.

## **Benefit-Cost Analysis**

The benefit-cost model was derived by using the principles of least-cost planning (LCP) that employed a process for choosing the lowest-cost method for providing a given level of service (benefit). Key outputs from this process involve the relationship of marginal user benefits to marginal costs. Conceptually, it is possible to configure alternative transportation systems that combine air, automobile, and ferry modes that generate roughly equivalent levels of benefits in a region such as Southeast Alaska. The system alternative that generates this base level of benefits at the least cost would then represent the optimal system. Within the models, the system alternatives were designed to optimize different ferry technologies while maintaining constant air service levels.

Although it is important to keep limitations in mind, the framework and tools of the LCP provide the best approach for systematically addressing the relative benefits and costs of transportation alternatives. In practice, estimating with precision all benefits and costs of a proposed transportation system is impossible. In particular, a wide range of spillover costs and benefits of transportation facilities and programs have yet to be estimated reliably. Moreover, it is difficult to foresee long-range changes in transportation, land use, and energy markets that could have profound effects on the performance of different components of the transportation system. The appropriate use of key outputs from this process permitted ADOT&PF to directly evaluate the inherent uncertainties in estimating long-term benefits and costs and determine whether consideration of these uncertainties alters the relative rankings of the system alternatives.

The following explanation provides a more detailed description of the technical steps that were taken in estimating the value of costs and benefits of a transportation system alternative.

### **Benefit-Cost Methodologies Employed**

Estimating net present values of capital investments and annual operating costs began with annualized cost streams for each alternative, including the base case in each year of the planning period. The total capital and operating costs were then summarized for the entire planning period and the present value was determined by using an appropriate discount rate. The relative change in net present value of costs of a variant system alternative was then made to base conditions.

The mathematics of discounting is typically straightforward and is described in any text on benefit-cost analysis. What is typically more difficult is determining the appropriate discount rate to apply. Extensive literature is available on the appropriate discount rate to use for different types of social decision-making. For evaluating public investments, ADOT&PF specified use of the real interest rate published in Circular A-94 issued by the White House Office of Management and Budget for discounting costs in cost-effectiveness analysis of federally funded projects. This figure is an accepted estimate of the opportunity cost of capital. The rate is currently 3.5 percent for 30-year cost-effectiveness analysis (as revised February 13, 2004). Assuming a discount rate higher than this figure tends to lower the value today of benefits and costs that are incurred in the future.

For each potential origin-destination pair, the user benefit for each mode and trip is determined by using the following formula:

$$\text{User benefits} = (U_0 - U_1) (V_0 + V_1)/2$$

where:

$U_0$  = the user cost per trip for the base case

$U_1$  = the user cost per trip for the system alternative

$V_0$  = the volume of trips for the base case

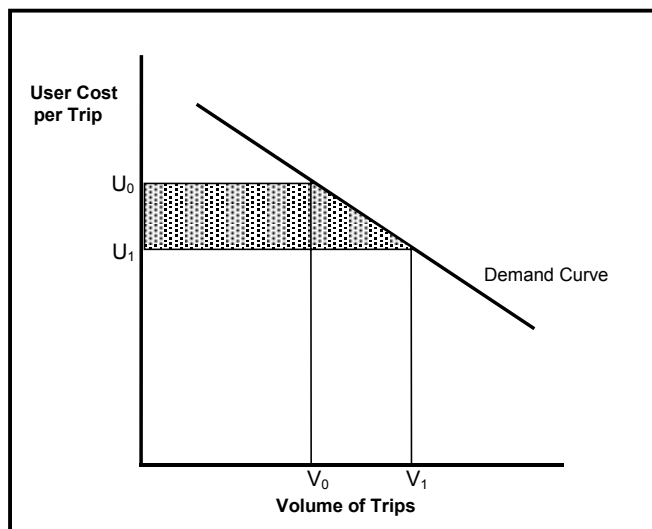
$V_1$  = the volume of traffic for the system alternative

A transportation improvement lowers the user costs for a trip from  $U_0$  to  $U_1$ , which results in an increase in the volume of trips taken from  $V_0$  to  $V_1$  (the essence of “latent demand”).

The benefit to users of the new facility is the increase in consumer surplus shown by the shaded area in Figure B-1.



**Figure B-1. User Benefits from Transportation Improvements**



The volume of future trips is input directly from the travel demand module. This module transfers annual person trips by trip purpose for each origin and destination pair within Southeast Alaska, including links to external zones.

The following user benefits represent the majority of user benefits of any system alternative and are the focus of the quantitative analysis within the benefit-cost module:

- Changes in travel and waiting time
- Changes in trip frequency
- Changes in out of pocket costs
- Changes in total number of trips made

The benefits associated with changes in accessibility and economic development are not measured, but are closely correlated with these user benefits and can be indexed to the changes in user benefits. For the SATP update, out-of-pocket costs are also estimated for additional driving that is introduced between certain origins and destinations where roadways replace all or a portion of ferry travel.

### **Value of Time**

The value of time is determined by interaction of each individual with the marketplace. Each individual has a unique set of skills, knowledge, and personal values that they hold and present to the labor market. It is the interaction of the individual's personal values and need for employment

with the labor market (versus individual preferences for spending time engaged in other activities) that determines each individual's value for time. Different individuals will perform a given task at a different price based on a large range of possible combinations of needs and values held by workers and employers.

Everyone views the value of their time differently. Although no two people value time the same, everyone agrees that time holds value to each individual and to each employer. The question is, what is the most appropriate value to place on time for purposes of comparing systems (in this case, transportation systems) that involve different time periods to use or complete?

Transportation systems move multiple people and goods with varying sensitivities to time differentials depending on their unique demographic and personal values. Although some broad user profile information is available on travelers who use the regional transportation system and their trip purposes, this information is quite limited, often dated, and varies among the different air, marine, and land transportation services. The user profiles vary by transportation mode, transportation route, and season. Southeast Alaska traffic contains a very high seasonal tourism component that exceeds in volume the entire annual resident traffic volume through the system. In addition to adults, the traffic data include infants and children whose time holds little immediate economic value.

Recognizing the variability discussed above, the following methodologies for value of time and range of user benefits were employed in the benefit-cost analyses for the SATP update:

- **Average Time Value.** Because current, consistent, and detailed user profile information is not available for air, marine, and land transportation across the various transportation routes, an average value for time to represent all users was recommended to compute and compare the economic benefit accruing to users from transportation system alternatives that affect travel time between two points. The average or median value selected should be based on the available information and values that best represent the individual users of the transportation systems under evaluation.
- **User Benefits Range.** Although the demographic and analytic information available to both accurately identify and represent the aggregate user value of the time of the group of users served by the transportation system is deficient, sufficient information is available to draw broad comparisons and conclusions. A reasonable value range should represent user benefits with respect to savings in travel time for system alternatives. The range should include a comparison presenting user benefits for an average or median value for time bounded by a

higher and lower value to provide a reasonable range and also to present user benefits without time as a factor.

Regarding the selection of an average time value, ADOT&PF decided that the U.S. Department of Labor's annual average hourly wage for all workers in the nation for 2003 be used as the base economic values for time evaluation. This data source best represents the mix of users on the Southeast Alaska transportation system. For 2003, this figure is calculated at \$15.35 per hour.

This figure was reduced to represent an average of all travelers on the Alaska Marine Highway System (AMHS), including children. AMHS traffic data for 2002 provide a breakout of the percentage of traffic by tariff codes, which indicates the percentage of several age groups traveling AMHS during 2002. The travel by age group was determined as follows:

Children under 12	10.6 percent
Seniors	3.2 percent
12 and over	86.2 percent

To represent adults 18 and older, the age 12 and over group was reduced to 80 percent of total travelers, which reduces the average U.S. average hourly wage of \$15.35 by roughly 20 percent to \$12.48 per hour. This value of time (\$12.48 per hour) was employed as the economic hourly time value to changes in transportation system characteristics for purposes of computing an average user benefit time differential between alternatives. As a sensitivity analysis, the following additional values of time were considered for comparison:

\$0.00	Null Time Value
\$5.38	Low Time Value 1
\$8.02	Low Time Value 2
\$10.47	Juneau Access Time Value
\$12.48	2004 SATP Time Value
\$13.50	High SATP Time Value

## Summary Findings (December 2003)

Table B-1 summarizes the results of the detailed evaluation. Intercommunity travel demand forecasts were prepared for the SATP update schedules as well as for the existing system<sup>1</sup> and SATP Addendum 1 for the 2010, 2015, 2020, and 2025 horizon years. Benefit-cost summaries were also prepared for the same time periods and horizon years as the travel demand forecasts. Capital costs are summarized by time period. Operating costs and revenue projections are shown for the horizon year in current dollars (2003). It should be noted that capital projects originally assumed as part of the SATP update from 2021 to 2025 (a shuttle-road system between Juneau and Sitka) were removed from the SATP update after the initial benefit-cost analyses were completed.

As shown in Table B-1, subsidies for the existing system would continue to increase over time. Addendum 1 is “revenue positive” in the later years of the system implementation, but this result is based on optimistic latent demand forecast adjustments for service to Bellingham and in the Lynn Canal.

The 2004 SATP is presented in Table B-1 with and without four implementation packages or components: Baranof Road, Bradfield Road, Fools Inlet Road, and Revillagigedo Road. Under the 2004 SATP scenario (with and without the implementation packages), AMHS revenue is lost north of Juneau with the assumed Juneau Access Road. However, reduction in mainline service level (by 2010), coupled with revenue-neutral return assumptions on new short ferry links (Haines-Skagway, Fools Inlet shuttle, and others), results in a substantial reduction in operating subsidy. Fares on new links to Bradfield Canal are based on \$20 one-way fare per trip segment. All fares on existing routes remain constant with current levels.

## SATP Update – Final Benefit-Cost Analyses and Results (July 2004)

Table B-2 summarizes scenario costs and user benefits in net present value from 2005 to 2025 for the same three scenarios examined in Table B-1. As shown, a significant increase in capital expenditures would result from the 2004 SATP, with an improvement in user system benefits over the planning horizon (net benefit minus costs of approximately \$209 million). Without consideration for capital expenditures, a positive net present value of

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<sup>1</sup> The existing system scenario is defined as those vessels and service characteristics operating in effect during calendar year 2003 by AMHS for ferry services. Regional air services are operated by local carriers and Alaska Airlines (regional jet service), according to a survey by Transportation Engineering Northwest, LLC, in October 2003.

approximately \$1.0 billion in benefits over operating and maintenance costs would result. If the four implementation packages identified after 2010 in Table B-1 are not assumed, the net gross user benefits for the 2004 SATP would be reduced by approximately \$500 million.

These results assume an average value of time in the user benefit-cost results. Attachment 2 contains a sensitivity analysis of “value of time” ranges in the benefit-cost analysis.

**Table B-1. Cost-Benefit Evaluation Summary**

Implementation Period	Capital Costs for Period (\$ millions)	Annual Operating Costs to ADOT&PF <sup>1</sup> (Horizon Year)	Annual AMHS Ridership (Horizon Year)	Annual Revenue <sup>2</sup> (Horizon Year)	Annual ADOT&PF Subsidy <sup>3</sup> (in Horizon Year) (\$ millions)	ADT Forecasts on Juneau – Skagway Road (AADT/Peak Summer ADT)	ADT Forecasts on Bradfield Road at Hwy. 37 (AADT/Peak Summer ADT)
<b>Existing System<sup>4</sup></b>							
2004-2010	92	75	299,500	38	(37)	-	-
2011-2015	124	75	320,300	40	(35)	-	-
2016-2020	172	75	341,400	41	(34)	-	-
2021-2025	146	75	362,900	43	(32)	-	-
<b>SATP Addendum 1<sup>5</sup></b>							
2004-2010	435	69	496,900	52	(17)	-	-
2011-2015	195	69	533,200	55	(14)	-	-
2016-2020	129	69	570,000	58	(11)	-	-
2021-2025	143	69	607,400	61	(8)	-	-
<b>2004 SATP<sup>6</sup></b>							
2004-2010	881	59	456,800	47	(12)	500/900	-
2011-2015	513	63	541,200	52	(11)	600/1,075	100/270
2016-2020	395	65	595,300	56	(9)	650/1,200	110/280
2021-2025	226	69	648,800	58	(11)	725/1,325	130/320

AADT = Annual average daily traffic ADT = Average daily traffic

Notes: Dollars reflect 2003 values.

Horizon year is the year at the end of the implementation period tested. The horizon years are 2010, 2015, 2020, and 2025, as shown in Column 1.

These benefit-cost summaries assumed a shuttle-road system between Juneau and Sitka in the 2021 to 2025 period. These plan components are no longer included in the SATP 2025 priorities, but could move up as funding become available.

<sup>1</sup> Operating costs include annual AMHS management, administration, marketing costs, and Southeast Region operating and maintenance costs. Included are the operating costs of all new roadways, terminal facilities, and vessels. Existing highway, airport and harbor facilities are not included.

<sup>2</sup> Fares are held constant. Ferry revenue is adjusted to account for IFA-generated revenue between POWI and other ports as well as loss in Lynn Canal ferry revenue north of Juneau.

<sup>3</sup> A negative subsidy figure represents continued expenditures that exceed revenues.

<sup>4</sup> Existing system scenario does not include fast vehicle ferry in the 2003 fleet; it only includes existing vessels operating consistent with current schedules/levels of service.

<sup>5</sup> The SATP Addendum 1 scenario assumes continued reliance on four mainline ferries — two from Prince Rupert and two from Bellingham, overlaid with fast vehicle Access EIS. It also assumes a ferry solution in Lynn Canal consistent with the previous SATP plan and updates with forecast adjustments consistent with Juneau Access EIS.

<sup>6</sup> The 2004 SATP update scenario assumes reduced mainline service down to only three mainline ferries, consisting of the *Columbia*, *Kennicott*, and either the *Malaspina* or *Matanuska*, in Southeast and latent demand estimates from AMHS marketing study; a road solution in Lynn Canal consistent with the most current EIS by 2010 with forecast adjustments consistent with the Juneau Access EIS; the Sitka Access Road by 2015; and the Bradfield Road by 2015 with forecast adjustments for Bradfield Road consistent with original SATP plan.



**Table B-2. Comparison of Regional Transportation Alternative Scenarios: Summary of Net Present Value Benefits and Costs, 2005-2025**

Net Present Value in Millions of Dollars (2003 \$)										
Scenario	Total Costs <sup>1</sup>	Revenues	Costs Less Revenues	Change in Net Costs from Adopted Plan	Change in Consumer Surplus <sup>2</sup>	User Benefits Eliminated in Lynn Canal	User Costs in Additional Driving on New Roadways	Change in Net User Benefits from Adopted Plan	Total Net Present Value: Benefits Minus Costs	
<b>Present Value of Total Costs and Benefits</b>										
2001 SATP Addendum 1	(1,608)	804	(804)							
2004 SATP	(2,398)	846	(1,552)	(748)	907	108	(58)	957	209	
2004 SATP (without implementation packages) <sup>3</sup>	(1,972)	697	(1,275)	(471)	615	108	(30)	693	222	
<b>Present Value of Operating and Maintenance Costs and Benefits<sup>4</sup></b>										
2001 SATP Addendum 1	(939)	804	(135)							
2004 SATP	(867)	846	(21)	114	907	108	(58)	957	1,071	
2004 SATP (without implementation packages) <sup>3</sup>	(986)	697	(289)	(154)	615	108	(30)	693	539	

<sup>1</sup> Includes all capital, operation, and maintenance costs of roadway and ferry systems. This benefit-cost analysis assumes that the Juneau Access Road is not part of the baseline system; therefore, all user benefits associated with the roadway are included in the 2004 SATP scenarios.

<sup>2</sup> Change in consumer surplus includes value of time in travel, waiting, and service frequency.

<sup>3</sup> The implementation packages are four major road components: Baranof Road, Bradfield Road, Fools Inlet Road, and Revillagigedo Road.

<sup>4</sup> The lower portion of this table excludes capital cost from the total costs column.

## 2025 Travel Demand Forecasts

Table B-3 summarizes annual person-trip forecasts on ferry and major roadway corridors by scenario in 2025. As shown, while changes in ferry ridership would not vary by more than 10 percent from the base scenario (SATP Addendum 1), varying degrees of increased travel opportunity are afforded by new roadway corridors included in the 2004 SATP.

**Table B-3. Comparison of 2025 General Travel Demand Forecasts by Scenario**

Scenario	AMHS Routes in Southeast Alaska (annual person-trips)	Juneau Access Road (APT/AADT)	Bradfield Road (APT/AADT)	Revillagigedo Highway (APT/AADT)	Sitka Access Road (APT/AADT)
2001 SATP Addendum 1	607,400	N/A	N/A	N/A	N/A
2004 SATP	665,700	583,000/725	118,150/130	54,750/60	73,000/80
2004 SATP (without implementation packages)	558,100	583,000/725	N/A	N/A	N/A

APT = Annual person-trips  
 AADT = Annual average daily vehicle trips  
 N/A = Not applicable

## Summary of Key Benefit-Cost Analytical Assumptions

Key assumptions for the final benefit-cost analysis included the following:

- Evaluation period: 20 years (from 2005 to 2025)
- Cost estimates: planning level only
- Value of time: \$12.48 per hour was applied where transportation scenarios change travel or wait time to the traveler from those previously calculated for SATP Addendum 1.
- Inflation: All cost and benefit amounts were estimated in 2003 dollars. A real discount rate of 3.5 percent was applied, according to the current *real* rate recommended for 30-year analysis in Office of Management and Budget Circular A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*, Appendix C, revised February 2004.
- Fares: All ferry and air fares were assumed to remain at existing 2003 levels. For new ferry shuttle links, a one-way \$20 adult fare was assumed.
- Vehicle operating costs: New vehicle miles of travel generated by a scenario were estimated at \$0.137 per mile, according to Department of

Energy estimates and AAA 2003 statistics of average fuel and oil, maintenance, and tire operating costs.

## **Attachment 1**

### **Preliminary Screening Evaluation – Component Selection by Corridor**



## **ATTACHMENT 1. PRELIMINARY SCREENING EVALUATION – COMPONENT SELECTION BY CORRIDOR**

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Table 1-1 contains the results of the preliminary evaluation for selection of components by corridor. Note that the figures identified in the first column, labeled “Figure Reference,” are conceptual route maps prepared for evaluation purposes. To obtain a copy of the maps, contact the Alaska Department of Transportation and Public Facilities (see the title page of this report for contact information).

Note that the phrase “currently adopted SATP” in the table notes refers to the 1999 Southeast Alaska Transportation Plan, as amended by Addendum 1 in 2001.



Table 1-1.

**SATP Update**  
**Preliminary Evaluation Matrix - Component Selection by Corridor**

Figure Reference	Route/Corridor by Alternative	Travel Time (one-way in hours)				Service Ferry (Trips/Day or Week)	Resulting Capacity Daily One-Way Vehicle Capacity (vehicles per day)	Ferry Annual M&O Cost		Road M&O Cost		Total Annual M&O Cost of Alternative	Daily Ferry Operating Cost Per Veh. Capacity Provided	One-Way Driving Costs <sup>5</sup>	Total User Costs (One-Way)
		Ferry(s)	Road <sup>3</sup>	Transfers & Dwell <sup>1</sup>	Total			Annual Service Hours	Total Annual Cost	Total Annual Cost	Total Annual M&O Cost of Alternative				
<b>Ketchikan-Metlakatla</b>															
Fig 1	Alt F1 - KET-MET Shuttle	2.00	0.00	2.25	4.25	2.0	40	3,520	\$1,267,200	-	\$0	\$1,267,200	\$43	\$0	\$43
Fig 2	Alt RF2 - Saxman-Walden Point Shuttle	0.25	0.50	0.50	1.25	12.0	240	2,920	\$1,051,200	14.5	\$118,900	\$1,170,100	\$6	\$2	\$8
<b>Ketchikan-Wrangell</b>															
Fig 3	Alt RF1 - KET-WRG Shuttle Road System via Cleveland Peninsula Santa Anna to North Tongass	2.25	3.00	2.75	8.00	4.0	80	7,040	\$2,534,400	63.25	\$518,650	\$3,053,050	\$43	\$12	\$56
Fig 3a	Road and Shuttle from Spacious Bay	2.75	0.75	2.25	5.75	2.0	40								
Fig 3b	Road and Shuttle From Helm Bay Fools Inlet to Cleveland Peninsula	1.25	1.50	1.50	4.25	4.0	80								
Fig 3c	Shuttle to Frosty Bay	1.00	0.25	1.25	2.50	4.0	80								
Fig 3d	Shuttle to Santa Anna	1.50	0.00	1.75	3.25	3.0	60								
Fig 4	Alt RF2 - KET-WRG Shuttle Road System via Revillagigedo Spacious Bay to Klu Bay	2.25	3.25	2.75	8.25	3.0	60	7,040	\$2,534,400	74.5	\$647,608	\$3,182,008	\$58	\$13	\$71
Fig 5	Alt RF3 - KET-WRG via Behm Canal to Bradfield Canal to Fools Inlet	1.75	4.00	2.25	8.00	4.0	120	7,040	\$2,147,200	103.25	\$889,868	\$3,037,068	\$25	\$16	\$41
Fig 6	Alt F4 - KET-PSG FVF Shuttle via IFA	4.00	0.00	4.50	8.50	1.0	35	3,520	\$4,576,000	0	\$0	\$4,576,000	\$179	\$0	\$179
Fig 7	Alt R5 - Eastern Passage Road WRG-KET	0.25	4.75	0.50	5.50	12.0	240	4,280	\$1,070,000	144.5	\$1,286,050	\$2,356,050	\$6	\$23	\$29
<b>Ketchikan Access to Continental Road System (Measured to Highway 16/37 Intersection in Canada)</b>															
Fig 5A	Alt RF1 - KET-WRG via Bradfield Road and Dedicated FVF Shuttle	5.25	8.50	2.25	16.00	1.0	35	4,380	\$5,694,000	67.5	\$596,718	\$6,290,718	\$223	\$39	\$262
Fig 5B	Alt RF2 - KET-WRG via Bradfield Road and Revillagigedo Island	0.25	11.25	0.50	12.00	12.0	240	3,520	\$880,000	163.25	\$1,381,868	\$2,261,868	\$5	\$58	\$63
Fig 8	Alt F3 - KET-YPR FVF Shuttle	2.75	5.00	2.25	10.00	2.0	70	3,520	\$4,576,000	0	\$0	\$4,576,000	\$90	\$27	\$117
Fig 8A	Alt F4 - KET-YPR Fast Monohull Shuttle	5.25	5.00	2.25	12.50	1.0	40	3,650	\$2,737,500	0	\$0	\$2,737,500	\$94	\$27	\$121
Fig 9	Alt F5 - KET-HYD IFA Shuttle	9.50	6.00	2.25	17.75	< 1/day	15	4,380	\$1,571,574	0	\$0	\$1,571,574	\$144	\$33	\$176
Fig 9a	Alt F6 - KET-HYD FVF Shuttle	4.50	6.00	2.25	12.75	1.0	35	4,380	\$5,694,000	0	\$0	\$5,694,000	\$223	\$33	\$256
<b>POWI to Ketchikan</b>															
Fig 10	Alt F1 - HOL-KET IFA Service	2.75	0.75	2.25	5.75	2.0	60	3,520	\$1,267,200	0	\$0	\$1,267,200	\$29	\$3	\$32
Fig 10A	Alt F2 - HOL-KET IFA Service with Two Vessels	2.75	0.75	2.25	5.75	4.0	120	5,280	\$1,900,800	0	\$0	\$1,900,800	\$22	\$3	\$25
Fig 10B	Alt F3 - HOL-North Tongass Terminal with Two Vessels	2.25	1.00	2.25	5.50	4.0	120	5,280	\$1,900,800	0	\$0	\$1,900,800	\$22	\$4	\$26
Fig 11	Alt RF4 - POWI-KET Shuttle Road System via Grindall and North Tongass Hwy	1.00	1.75	1.25	4.00	4.0	120	4,380	\$1,576,800	31.0	\$254,200	\$1,831,000	\$18	\$7	\$25
<b>Petersburg to Ketchikan</b>															
Fig 12	Alt F1 - IFA Shuttle Service via Mitkof and POWI (Alt F1)	4.50	6.50	4.50	15.50	1.0	30	3,650	\$1,314,000	67.5	\$553,500	\$1,867,500	\$60	\$36	\$96
Fig 13	Alt F2 - PSG-KET FVF Shuttle	2.75	0.75	2.25	5.75	1.0	35	3,520	\$4,576,000	0	\$0	\$4,576,000	\$179	\$4	\$183
Fig 5 ext.	Alt RF3 - Shuttle to Wrangell, Fools Inlet to Bradfield Canal via Revillagigedo Road (Fig 5)	2.75	4.75	3.25	10.75	3.0	90	10,560	\$3,801,600	103.25	\$889,868	\$4,691,468	\$58	\$20	\$77
<b>Southern Panhandle Regional Routes Beginning from Warm Springs Bay or Petersburg (selected alternative systems based upon local screening of corridors)</b>															
Fig 13	Alt F1 - KET-PSG FVF Shuttle	2.75	0.75	3.25	6.75	1.0	35	3,520	\$4,576,000	0	\$0	\$4,576,000	\$179	\$4	\$183
Fig 14	Alt RF2 - Kuiu Island-POWI using Hollis	5.00	4.25	5.25	14.50	2.0	60	11,420	\$4,111,200	109.00	\$893,800	\$5,005,000	\$94	\$23	\$117
Fig 15	Alt RF3 - Kake via POWI using Hollis	5.75	4.25	5.75	15.75	2.0	60	11,420	\$4,111,200	106.50	\$873,300	\$4,984,500	\$94	\$17	\$111
Fig 15a	Alt RF3 - Kake via POWI using Grindall Point to North Tongass	3.00	4.50	5.00	12.50	2.0	60	10,560	\$3,801,600	148.25	\$1,215,650	\$5,017,250	\$87	\$18	\$105
Fig 16	Alt RF4 - Kake via PSG and PSG-KET Alternative	5.00	2.50	5.75	13.25	1.0	35	17,600	\$5,948,800	51.75	\$424,350	\$6,373,150	\$233	\$10	\$243

- 1 - This estimate includes transfer penalties of 15 minutes per ferry trip and wait or dwell time at each terminal of 1/2 the headway (this dwell is capped at 2 hours for each ferry link).
- 2 - For cost purposes a maximum 12-hour crew day was assumed during summer seasons and an 8-hour crew day for winter/shoulder seasons.
- 3 - Driving travel time through Canada to Bellingham, WA, includes an 8-hour overnight penalty.
- 4 - Screened alternatives include 24-hour vessels which serve multiple ports. Hours of operation for 24-hour vessels between ports considered in the screening were included to provide as best direct comparatives as possible.
- 5 - Based upon estimated costs/mile of operating a vehicle in 2003 (\$0.137/mile) consistent with 2000 Department of Energy estimates and AAA 2003 statistics of average fuel/oil, maintenance, and tire operating costs.

Regional corridors that connect regional communities in the Southeast will be determined based upon subcorridor elements, combined, and then evaluated against transportation elements in the currently adopted SATP.

Table 1-1.

**SATP Update**  
**Preliminary Evaluation Matrix - Component Selection by Corridor**

Figure Reference	Route/Corridor by Alternative	Travel Time (one-way in hours)				Service Ferry (Trips/Day or Week)	Resulting Capacity Daily One-Way Vehicle Capacity (vehicles per day)	Ferry Annual M&O Cost		Road M&O Cost		Total Annual M&O Cost of Alternative	Daily Ferry Operating Cost Per Veh. Capacity Provided	One-Way Driving Costs <sup>5</sup>	Total User Costs (One-Way)
		Ferry(s)	Road <sup>3</sup>	Dwell <sup>1</sup>	Total			Annual Service Hours	Total Annual Cost	Total Annual Length	Total Annual Cost				
<b>Northern Panhandle Regional Routes JUN-SIT (selected alternative systems based upon local screening of corridors)</b>															
Fig 17	Alt RF1 - Shuttle-Ferry Road System from Juneau to Sitka Auke Bay to Young Bay	2.50	4.75	3.00	10.25	3.0	60	14,080	\$4,294,400	123.5	\$1,047,329	\$5,341,729	\$98	\$20	\$118
Fig 17a	Road to Middle Point on Douglas Island	0.50	0.75	0.75	2.00	6.0	120								
Fig 17b	Shuttle Ferry to Young Bay	1.50	0.15	1.75	3.40	3.0	60								
Fig 18	Alt RF2 - Partial Shuttle Road System with Ferry from Hawk Inlet to Rodman Bay	5.75	2.50	3.25	11.50	1.0	35	7,040	\$3,379,200	49.5	\$440,550	\$3,819,750	\$132	\$10	\$143
Fig 18A	Alt RF2 - Partial Shuttle Road System with FVF from Hawk Inlet to Rodman Bay	2.75	2.50	4.25	9.50	2.0	70	6,440	\$5,063,200	49.5	\$440,550	\$5,503,750	\$99	\$10	\$109
Fig 19	Alt RF3 - Partial Shuttle Road System with FVF from Hawk Inlet to Warm Springs Bay	4.00	1.50	3.25	8.75	2.0	70	7,040	\$5,843,200	24.75	\$970,275	\$6,813,475	\$114	\$6	\$121
Fig 19A	Alt RF3 - Partial Shuttle Road System with Monohull from Hawk Inlet to Warm Springs Bay	4.25	1.50	4.25	10.00	1.0	40	6,440	\$3,457,200	24.75	\$970,275	\$4,427,475	\$118	\$6	\$125
Fig 20	Alt RF4 - JUN-SIT FVF Shuttle	4.50	0.00	2.25	6.75	1.0	35	3,520	\$4,576,000	0	\$0	\$4,576,000	\$179	\$0	\$179
<b>Sitka Southern Access to Ketchikan</b>															
Fig 21	Alt RF1 - Rodman Bay to Hawk Inlet (Alt RF2) to PSG via FVF, via KET-PSG FVF Shuttle	9.50	3.25	16.50	29.25	1.0	35	13,480	\$14,215,200	49.50	\$440,550	\$14,655,750	\$556	\$18	\$574
Fig 22	Alt RF2 - Rodman Bay to Petersburg via FVF, via KET-PSG FVF Shuttle	7.25	2.00	4.50	13.75	1.0	35	7,040	\$9,152,000	48.75	\$433,875	\$9,585,875	\$358	\$11	\$369
Fig 23	Alt RF2 - Rodman Bay to Petersburg via FVF, via Wrangell/Fools Inlet/Revillagigedo (Fig 5)	7.25	2.00	5.25	14.50	1.0	35	11,320	\$10,222,000	152.0	\$1,323,743	\$11,545,743	\$400	\$11	\$411
Fig 24	Alt RF3 - Warm Springs Bay to Kuiu Island via POWI	5.00	5.00	5.25	15.25	4.0	80	10,560	\$3,801,600	140.25	\$1,900,050	\$5,701,650	\$65	\$27	\$92
Fig 25	Alt RF4 - Rodman Bay to Kake via POWI	6.00	5.50	5.75	17.25	2.0	70	11,320	\$10,222,000	155.25	\$1,307,175	\$11,529,175	\$200	\$26	\$226
Fig 26	Alt RF4 - Warm Springs Bay to Kake via POWI	5.75	5.00	5.75	16.50	4.0	80	10,560	\$3,801,600	148.25	\$1,965,650	\$5,767,250	\$65	\$21	\$86
<b>Ketchikan/Petersburg to Bellingham<sup>4</sup></b>															
Fig 27	Alt F1 - KET-BEL via Conventional Service	37.00	0.00	2.50	39.50	2/week	30	5,390	\$8,354,500	0	\$0	\$8,354,500	\$381	\$0	\$381
	Alt RF1 - KET-BEL via FVF to YPR and Road System to Bellingham	2.75	31.00	2.25	36.00	2.0	60	3,520	\$4,576,000	0	\$0	\$4,576,000	\$104	\$151	\$255
	Alt F3 - PET-BEL via Conventional Service	48.00	0.00	2.50	50.50	2/week	30	6,930	\$10,741,500	0	\$0	\$10,741,500	\$490	\$0	\$490
Fig 28	Alt RF4 - PET-BEL via Wrangell and Bradfield Road	2.75	35.25	2.25	40.25	4.0	120	7,040	\$2,534,400	89.6	\$797,262	\$3,331,662	\$29	\$162	\$191
<b>Northern Panhandle Smaller Communities</b>															
	Alt RF1 - 24-LeConte Class Composition Route	Will be tested further in November formal evaluation. No clear screening criteria available given alternative permutations of service.													
	Alt RF2 - Dayboat Hub and Spoke System on Chatham Strait	Simple answer is dayboat configuration of two shuttle ferries would cost less to operate than conventional 24-hour operation with hub on Chatham Strait.													
<b>Regional Access Connections to US/Canadian Continental Highway System (selected alternative systems based upon local screening of corridors)</b>															
	Alt R1 - Juneau Access Road	Will be tested further in November formal evaluation. No clear screening criteria available at preliminary stage given unknown criteria and regional nature of projects.													
	Alt R2 - Bradfield Road	Focus will be on benefit-cost analysis of travel demands, user benefits and system costs in detailed evaluation.													
	Alt F3 - Juneau Access Road with YPR Shuttle														

1 - This estimate includes transfer penalties of 15 minutes per ferry trip and wait or dwell time at each terminal of 1/2 the headway (this dwell is capped at 2 hours for each ferry link).

2 - For cost purposes a maximum 12-hour crew day was assumed during summer seasons and an 8-hour crew day for winter/shoulder seasons.

3 - Driving travel time through Canada to Bellingham, WA, includes an 8-hour overnight penalty.

4 - Screened alternatives include 24-hour vessels which serve multiple ports. Hours of operation for 24-hour vessels between ports considered in the screening were included to provide as best direct comparatives as possible.

5 - Based upon estimated costs/mile of operating a vehicle in 2003 (\$0.137/mile) consistent with 2000 Department of Energy estimates and AAA 2003 statistics of average fuel/oil, maintenance, and tire operating costs.

Regional corridors that connect regional communities in the Southeast will be determined based upon subcorridor elements, combined, and then evaluated against transportation elements in the currently adopted SATP.



## **Attachment 2**

### **Value of Time Sensitivity in Benefit-Cost Analyses**



## **ATTACHMENT 2. VALUE OF TIME SENSITIVITY IN BENEFIT-COST ANALYSES**

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Within the benefit-cost report, average values of travel time were used in the evaluation. Because the use of time values can be questioned, a sensitivity analysis was conducted on the value of time in the benefit-cost analysis. The following hourly time value ranges were tested. As shown, the resulting ranking of the system scenarios confirmed the conclusion that the SATP update with all implementation packages would result in the greatest net present value (benefit in relation to cost).

It should be noted that, as the value of time increases, the relative benefits afforded because of transportation improvements result in proportionally higher benefit totals, assuming that there are savings in travel times.

The range of values for time tested in this sensitivity analysis is shown in the list below. Table 2-1 shows consumer surplus benefits under differing value of time assumptions.

- a. \$0.00          Null Alternative
- b. \$5.38          Low Time Value 1
- c. \$8.02          Low Time Value 2
- b. \$10.47        Juneau Access Time Value
- c. \$12.48        SATP Time Value
- d. \$13.50        High Time Value

**Table 2-1. Consumer Surplus Benefits under Differing Value of Time Assumptions: Present Value of Operating and Maintenance Costs and Benefits, 2005-2025**

Scenario	Change in Consumer Surplus NPV (2003 \$ millions)	NPV of Other User Benefits & Costs (2003 \$ millions)	Total NPV (Benefits Minus Costs) (2003 \$ millions)
<b>Null Alternative — \$0 per Hour Value in Travel Time Changes</b>			
2001 SATP Addendum 1			
2004 SATP	0	50	164
2004 SATP (without implementation packages)	0	78	(76)
<b>Low Time Value 1 — \$5.38 per Hour Value in Travel Time Changes</b>			
2001 SATP Addendum 1			
2004 SATP	424	50	588
2004 SATP (without implementation packages)	298	78	222
<b>Low Time Value 2 — \$8.02 per Hour Value in Travel Time Changes</b>			
2001 SATP Addendum 1			
2004 SATP	604	50	768
2004 SATP (without implementation packages)	416	78	340
<b>Juneau Access Time Value — \$10.47 per Hour Value in Travel Time Changes</b>			
2001 SATP Addendum 1			
2004 SATP	770	50	934
2004 SATP (without implementation packages)	525	78	449
<b>2004 SATP Time Value — \$12.48 per Hour Value in Travel Time Changes</b>			
2001 SATP Addendum 1			
2004 SATP	907	50	1,071
2004 SATP (without implementation packages)	615	78	539
<b>High Time Value — \$13.50 per Hour Value in Travel Time Changes</b>			
2001 SATP Addendum 1			
2004 SATP	976	50	1,140
2004 SATP (without implementation packages)	660	78	584



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