

KETCHIKAN to SHELTER COVE ROAD

State Project Number: 68405

DRAFT Reconnaissance Report



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NOTICE TO USERS

Changes frequently occur during the planning and design of projects like this, so anyone relying on information from this document should check with the Alaska Department of Transportation & Public Facilities (DOT&PF) for the most current design information. You can contact the Project Manager, Dan Garner, P.E., at (907) 465-1851 or Carolyn Morehouse, P.E., at (907) 465-4234 for current information.

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RECOMMENDATION AND APPROVAL SIGNATURE PAGE

This document was prepared in accordance with Department procedures and currently accepted standards. This document and the preliminary studies and investigations were state funded. State funding exists for construction of the proposed project, but the amount is likely not enough to complete it.

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EXECUTIVE SUMMARY

In the spring of 2007, the Department of Transportation and Public Facilities (DOT&PF) used state funds from the Roads to Resources Program to begin a preliminary reconnaissance study that could expand road access in the Ketchikan area. In November 2008, Alaska voters approved a Transportation General Obligation (GO) Bond that included 10 million dollars for construction of a road to Shelter Cove. Subsequently the Department proceeded with a detailed reconnaissance effort.

This study evaluates the proposal to extend the Ketchikan Road system from the end of Revilla Road near Lake Harriet Hunt to Shelter Cove on Carroll Inlet. The project could follow the Section 4407 recorded reciprocal easement granted to the State of Alaska from the United States Forest Service between these areas, or it could use portions of this easement in combination with new road construction and connect to or upgrade existing logging road systems as feasible.

The project's immediate proposed purpose would provide public access to the existing logging road system, thereby expanding access for Ketchikan's recreational and subsistence activities. In the long term, the project would be an identified road segment supporting implementation of the *2004 Southeast Alaska Transportation Plan*¹ by providing Ketchikan with access from the northern end of Revillagigedo Island to connect with future links to the North American Highway system via the Bradfield Canal and Cassiar Highway in Canada.

The objective of this reconnaissance study is to: (1) Formulate the project's Purpose and Need; (2) Obtain internal DOT&PF support group input and data needs; (3) Identify preliminary alternatives that would provide a single lane 20 mph road with pullouts constructed within an alignment that can be upgraded to a 35-mph road accessing Shelter Cove; (4) Determine the current condition of existing roads within the different alternatives; and (5) Begin mapping and preliminary environmental studies of the alternatives.

A number of alternatives falling into four broad general corridors were considered plus the no-build option. Each alternative is discussed as well as how each fulfills the project's purpose and need.

¹ http://dot.alaska.gov/stwdplng/projectinfo/ser/newwave/SATP_FINAL/documents.shtml

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Ketchikan to Shelter Cove Road Project Reconnaissance Report

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ABBREVIATIONS AND SHORT NAMES LIST

AASHTO	American Association of State Highway and Transportation Officials
ADF&G	Alaska Department of Fish and Game
ADT	Average Daily Traffic
AHRS	Alaska Heritage Resource Survey
BOP	Beginning of Project
Cape Fox	Cape Fox Corporation
CMT	Culturally Modified Tree
DEPARTMENT	Department of Transportation and Public Facilities
DNR	Department of Natural Resources
DOT&PF	Department of Transportation & Public Facilities
EA	Environmental Assessment
EIS	Environmental Impact Statement
EOP	End of Project
FEIS	Final Environmental Impact Statement
GO	General Obligation
FHWA	Federal Highway Administration
KGB	Ketchikan Gateway Borough
LOS	Level of Service
LUD II	Land Use Designation II
MOU	Memorandum of Understanding
NEPA	National Environmental Protection Act
NPOG	Non-Productive Old Growth
NWI	National Wetland Inventory
OHA	Office of History and Archeology
ROW	Right of Way
POG	Productive Old Growth
SATP	Southeast Alaska Transportation Plan
SHPO	State Historic Preservation Officer
TLMP	Tongass Land Resource Management Plan
TONGASS	Tongass National Forest
USACE	United States Army Corps of Engineers
USFS	United States Forest Service

1.0 – PROJECT DESCRIPTION

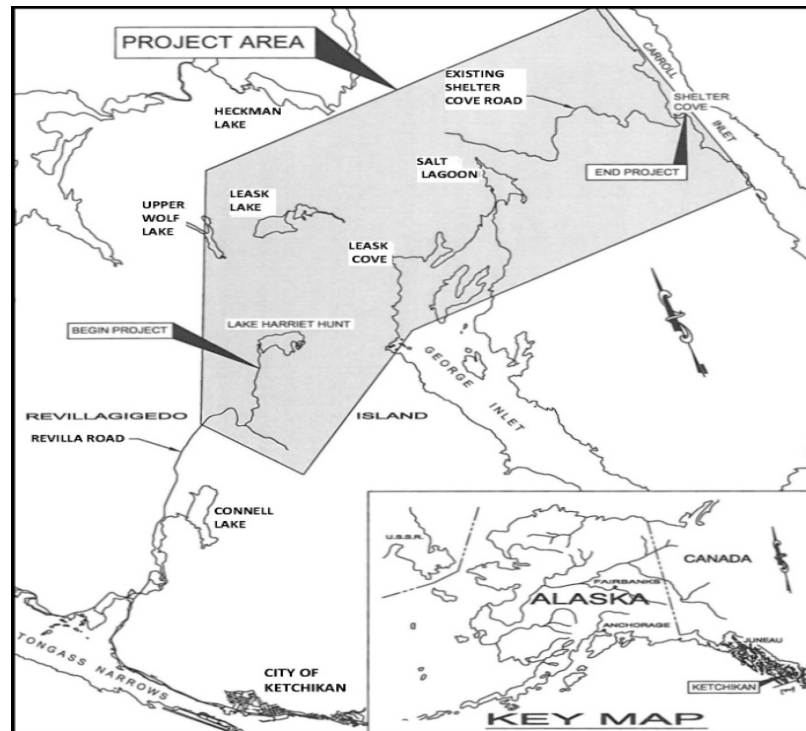


Figure 1. Key & Vicinity Map

1.1 – Project Location

The project is located in the Ketchikan Gateway Borough near the City of Ketchikan, Alaska. Ketchikan is located on the southwestern coast of Revillagigedo Island, opposite Gravina Island, near the southern boundary of Alaska. It is about 680 miles north of Seattle and 235 miles south of Juneau. The 2.2 million acre Misty Fiords National Monument lies 22 air miles east of Ketchikan. Ketchikan is the first Alaska port of call for northbound cruise ships and the Alaska Marine Highway System. The area lies in a maritime climate zone noted for its relatively warm winters, cool summers, and heavy precipitation. Ketchikan averages 162 inches (13.5 feet) of precipitation annually, including 32 inches of snowfall. The Ketchikan Borough along with the City of Ketchikan has a combined population of approximately 13,000 people.²

Four alternative road alignments have been evaluated within the project area shown in Figure 1. These alternative alignments are shown in Figure 2 and discussed in detail beginning in Section 5.

² http://www.commerce.state.ak.us/dca/commdb/CF_CIS.htm for Ketchikan Gateway Borough which includes the City of Ketchikan and the City of Saxman.

1.2 – Background

In November 2008, Alaska voters approved a General Obligation (GO) bond that included 10 million dollars for the construction of a road to Shelter Cove.³ The language for this bond describes the scope of the project as: “10 million dollars would fund the construction on a new 14’ single-lane rock and gravel road between Lake Harriett Hunt and Shelter Cove Road. The new road would connect with two road systems on Revilla Island in Ketchikan.”

Federal Public Law 109-59, Section 4407, provided the impetus for the US Forest Service (USFS) and the State of Alaska to enter into a Memorandum of Understanding (MOU) to transfer easements between the two parties. The MOU establishes a process for granting reciprocal rights-of-way and easements throughout the Tongass National Forest (Tongass) to facilitate planning future transportation and utility corridors. The terms of this MOU allowed the USFS to provide the State with transportation/utility corridors easements in return for State of Alaska tidewater leases for log transfer sites throughout Southeast Alaska. An easement was recorded that gave the State rights for planning and an implied future construction easement from the end of the Revilla Road near Lake Harriet Hunt to Shelter Cove. Alternative I, within this easement, is one of the alternatives DOT&PF evaluated for this study. See Figure 2.

The proposed project would link Ketchikan to Shelter Cove from a point near Lake Harriet Hunt, either with new road construction or a combination of new construction and upgrade of existing roads. For this study the Beginning of Project (BOP) is the junction of Lake Harriet Hunt and the Revilla Road on the Ketchikan side, and the End of Project (EOP) is the log transfer facility at Shelter Cove on Carroll Inlet.

The total project length could vary from 19.4 to 23.4 miles, with potential new road construction varying from 4.3 to 10.3 miles, depending upon the exact route. Use of existing roads would require reconstructing them to meet minimum DOT&PF single lane, low volume standards. It is assumed that the portion of Revilla Road from the BOP to Lake Harriet Hunt, as well as the USFS road to the gate at the Cape Fox property on the White River Road will not need reconstruction. The existing USFS Shelter Cove Road is also not expected to require upgrades. Roads traversing USFS land will also need to meet USFS road standards.

All existing roads are owned and maintained by either DOT&PF (to Lake Harriet Hunt), USFS, Cape Fox Corporation (Cape Fox), or the State of Alaska Mental Health Trust.

³ http://www.elections.alaska.gov/doc/mp/2008/2008_General_Media.pdf

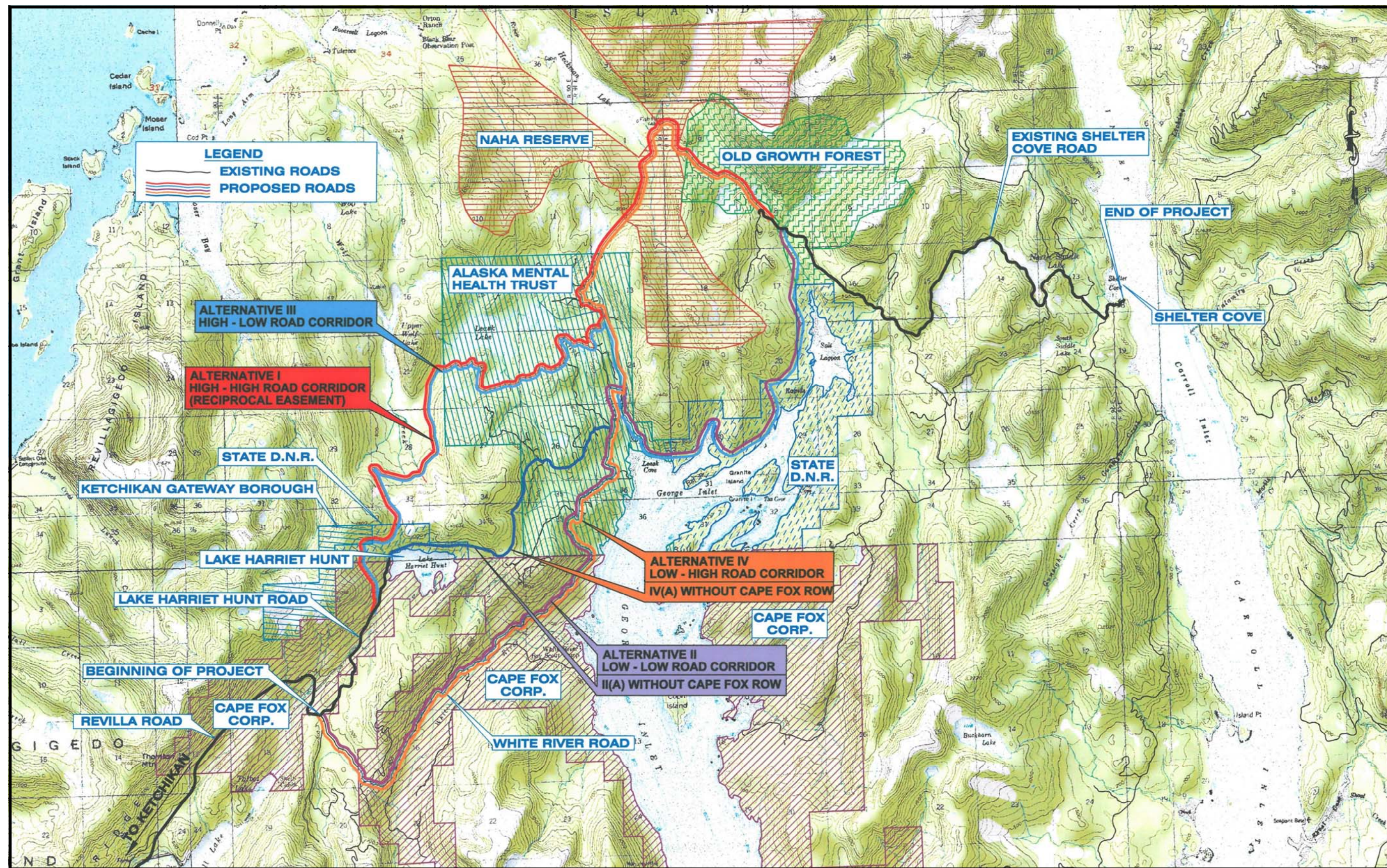


Figure 3. Alternative Location Map

All alternatives require Right of Way acquisition from the USFS, Cape Fox Corporation, Mental Health Trust Authority and the State of Alaska Department of Natural Resources (DNR) or combinations thereof. Some of the alternatives would require a relatively minor ROW acquisition from the Ketchikan Gateway Borough (KGB).

2.0 – PURPOSE AND NEED

The preliminary Purpose and Need was developed to demonstrate the project's need and to guide the selection of alternatives. This preliminary Purpose and Need is subject to revision as the project is reviewed by local governments, regulatory agencies, and the public during the environmental documentation process under the National Environmental Policy Act (NEPA) as required.

The types of Federal actions that would trigger NEPA include:

- United States Army Corps of Engineers (USACE) wetlands permit.
- United States Forest Service (USFS), if DOT&PF requests formal consideration of certain alternatives or routes through USFS property outside of the Section 4407 reciprocal easement.

2.1 – Purpose

The purpose of this project is to provide vehicle access to Shelter Cove allowing access to public lands from Lake Harriet Hunt to Shelter Cove. This would increase the public's opportunities for recreation, subsistence hunting and gathering, tourism, and economic development consistent with existing public land use plans and policies.

2.2 – Need

Road access to public lands is limited in the Ketchikan area. The results of a household survey (see Appendix A) conducted in Ketchikan identified an unmet need for access to recreational and subsistence-related activities in this area.

In the 2004 Southeast Alaska Transportation Plan (SATP), DOT&PF identified a possible link between Southeast Alaska and the Canadian highway system at the Cassiar Highway. That proposed link included a Revillagigedo Highway; a portion of that highway is between Harriet Hunt Lake and Shelter Cove. That plan is being updated but the 2004 version is still the approved transportation plan for Southeast Alaska.

Federal Public Law 109-59, Section 4407, provided the impetus for the United State Forest Service (USFS) and the State of Alaska to enter into a Memorandum of Understanding (MOU) to establish a process for granting reciprocal rights-of-way and easements throughout the Tongass for future transportation and utility corridors.

2.3 – Logical Termini

This project is presently funded with State GO bonds. The bond issue allocates 10 million dollars toward construction of a low volume road connection between the Ketchikan public road system at Lake Harriet Hunt and Shelter Cove on Carroll Inlet. The intent of the bond issue is to provide public road access from Ketchikan to Shelter Cove.

3.0 – EXISTING CONDITIONS

3.1 – Facilities History

The road system on Revillagigedo Island is made up of many isolated road systems. Most public roads are under the jurisdiction of the State or City of Ketchikan. The roads under the jurisdiction of the USFS consist of smaller isolated systems such as the Shelter Cove Road and have primarily been used for timber harvest activities. The USFS maintains the Shelter Cove Road and the road is currently in good condition.

The White River Road was constructed in 1980 for Cape Fox Corporation as a timber access road and has been used intermittently for both timber and tourism related activities. Presently, Cape Fox is allowing the Mental Health Trust and its logging contractors to access their lands via the White River Road. Recreational tour groups also use the White River Road during the summer.

3.2 – Traffic

Traffic on Revilla Road is 186 ADT (Average Daily Traffic) based on 2008 traffic data⁴. Cape Fox utilizes the Lake Harriet Hunt and White River areas for tourist related activities. No current traffic data is available for the White River Road, but estimates based on Cape Fox projections are less than 40 vehicles per day during the summer with less in the winter⁵. The vehicles are mainly passenger vans and buses. The Mental Health Trust lands are currently accessed by White River Road for logging operations. Current traffic on the existing roads in the Mental Health Trust lands includes logging trucks, heavy equipment, and various crew vehicles. According to Mental Health Trust, logging traffic is anticipated to greatly diminish in 2012, when timber harvest curtails.

3.3 – Climate and Topography

The area is in a maritime climate zone noted for its relatively warm winters, cool summers, and heavy precipitation. Summer temperatures range from 46 to 59 °F; winter temperatures range from 29 to 39° F. Ketchikan averages 162 inches (13.5 feet) of precipitation annually, including 32 inches of snowfall. Topography in the project area ranges from mountainous terrain to extensive areas of rolling muskeg.

⁴ http://dot.alaska.gov/stwdplng/mapping/trafficmaps/2008/Southeast/2008_ADT_Ketch_Areawide.pdf

⁵ Phone conversation with Cape Fox Saxman Group Manager, January, 2012.

The study area attains elevations between 100 and 1300 feet.

3.4 – Drainage

All of the alternatives cross major watersheds and cross major drainage features that would require substantial culverts or bridges. Some alternatives skirt the shore of lakes. A preliminary hydrology and hydraulics report prepared by DOT&PF's regional hydraulics engineer is included in Appendix B.

3.5 – Soils

A Preliminary Geotechnical Reconnaissance Report was completed in August 2008 and includes the results of an earlier investigation conducted by FHWA's Western Federal Lands Division on portions of the USFS Shelter Cove Road system. Further geotechnical field work was conducted in the Fall of 2007, the Summer of 2008 and the Fall of 2011. The information gathered was used to produce a Preliminary Geotechnical Reconnaissance Report which is in Appendix C. This report includes the results of FHWA's Western Federal Land Division's investigation.

This report investigates important geotechnical aspects of the alternatives considered. The primary geological hazard identified was localized slope instability. The investigation also confirmed that the existing logging roads in the area, with the exception of the White River Road, were constructed over muskeg and/or incorporated overburden in the roadway embankment.

3.6. – Existing Roads

DOT&PF maintains public road access from downtown Ketchikan ~6.9 miles north on the North Tongass Highway to the junction with Revilla Road and then 6.5 miles up Revilla Road to the junction with the Lake Harriet Hunt Road and White River Road. This junction is the Beginning of Project (BOP) for route comparison purposes.

From the BOP there are two publically owned routes that go from either the BOP 2.5 miles up to Lake Harriet Hunt, or 0.9 miles from the BOP across to the gate at the beginning of the White River Road (see Figure 2).

Beyond Cape Fox Corporation's White River Road gate, this private road continues approximately five miles through Cape Fox land to Mental Health Trust land. The road then continues for 4-1/2 miles to the vicinity of Leask Cove.

These roads are privately owned by Cape Fox or the Mental Health Trust and are not open to the general public.

The reconnaissance staff has been able to drive these roads multiple times. The Revilla road from the White River Road to Lake Harriet Hunt is generally a well graded gravel road. From the BOP, the White River Road can be comfortably driven at around 25 miles per hour for approximately the first 3 miles.

Then the road takes on the character of a logging road where driving speeds of less than 20 miles per hour are more typical.

Another road network exists on Carroll Inlet at Shelter Cove connecting the USFS log transfer facility at Shelter Cove to USFS roads and other logging roads. One leg of this network, consisting of the main Shelter Cove logging road, which is maintained by the USFS, extends into and crosses the valley draining into the Salt Lagoon at the head of George Inlet and is a component of all of the alternatives being considered.

3.7 – Land Ownership & Use

All of the alternatives would cross land owned by either the Cape Fox Corporation, USFS, State of Alaska Department of Natural Resources (DNR) or the Alaska Mental Health Trust Authority (Mental Health Trust). The Mental Health Trust currently uses the White River Road for access to their lands currently being logged. During the 1970's and 1980's the USFS conducted timber sales in the Shelter Cove area. Currently, there is no USFS timber harvesting activities ongoing

3.7.1 – Forest Service Lands

In 2006's federal transportation bill⁶, Congress established a number of transportation and utility corridors through the Tongass National Forest for the benefit of the State of Alaska.⁷ In exchange for the federal transportation and utility easements, the State of Alaska granted easements to the USFS over the State's tidal and submerged lands that border the Tongass National Forest. Because of the reciprocal nature of the exchange, codified in SAFETEA-LU, the exchanged easements are commonly referred to as "reciprocal easements." One of the congressionally established reciprocal easements crosses USFS land creating a transportation and utility corridor that connects the Ketchikan road system to Shelter Cove.

Following the establishment of the reciprocal easements (a/k/a Section 4407 easements) in federal law, the USFS, DNR and DOT&PF entered into a memorandum of understanding that outlined how the individual easements would be transferred and recorded. The Memorandum of Understanding (MOU) recognizes that easements provide for the "development and maintenance of access and the adjunct rights of construction, operation and maintenance of facilities and improvements which will provide substantial benefits to the public." The MOU further recognizes that "such rights will be granted consistent with their respective obligations to protect scenic, archaeological, recreation, and fish and wildlife values, resources and habitats on national Forest System lands and State of Alaska lands."⁸

⁶ Public Law 109-59, commonly known as SAFETEA-LU.

⁷ Section 4407 of Public Law 109-59.

⁸ Section 4407 MOU, at page 1.

Pursuant to the terms of the MOU, the USFS has transferred and the DOT&PF has recorded the legal instrument recognizing the established reciprocal easement for this project corridor.⁹

The recorded easement allows the State to conduct surveys and investigations as necessary or incident to highway and utility planning, design, and environmental review processes. Pursuant to the terms of the MOU, DOT&PF must submit a survey diagram of its proposed transportation and utility corridor for USFS review prior to construction. The USFS will continue to own and maintain the existing Shelter Cove Road until DOT&PF upgrades the road or decides to allow year-round access.¹⁰

3.7.2 – Cape Fox Lands

All alternatives considered, except for Alternatives II (A) and IV (A) that traverse above Lake Harriet Hunt, would require the acquisition of surface property rights from the Cape Fox Corporation. In order to obtain a developable property interest in any Cape Fox property, DOTPF would also have to reach an agreement with the Sealaska Corporation, the owner of subsurface interests in Cape Fox Corporation lands. DOTPF initiated negotiations with Cape Fox in 2008 to acquire Right of Way along the White River Road. However, these negotiations were suspended by DOT&PF for a number of reasons, one of which was that any alternative passing through Cape Fox lands would provide limited opportunity for public access to public lands, which is one of the stated purposes of the project.

3.7.3 – State of Alaska Department of Natural Resources Land

All of the alternatives pass through some portion of DNR land and interagency land transfer agreements would need to be obtained. The process for seeking an interagency land transfer agreement is a relatively straightforward process wherein a number of competing public uses and values are weighed. .

3.7.4 – Mental Health Trust Land

The Mental Health Trust owns an extensive tract in the Leask Cove area that currently supports logging operations. This activity is expected to continue through 2012. This area includes several miles of logging roads which could be used for some of the alternatives. Depending on the alternative selected, DOT&PF will need to obtain up to 4.5 miles of right-of-way from the Mental Health Trust. Obtaining property interests from the Mental Health Trust, an independent authority, is similar to the property acquisition process used to acquire interests from other third-parties.

⁹ Document No: 2009-000545-0 (Ketchikan Recording District; 02/26/2009).

¹⁰ From 2008 meeting with Lynn Kolund, USFS Ketchikan District Ranger lkolund@fs.fed.us

3.7.5 Ketchikan Gateway Borough Land

Alternatives I and III pass through a short portion of KGB land which would require obtaining property interests from the Borough. The Department initiated preliminary discussions with Borough staff regarding property needs for the Project.

3.8 – Adjacent Land Use

The area adjacent to the proposed alternatives is generally undeveloped. Land uses include commercial tours, logging, recreational and subsistence activities. Much of the forest in the area has been logged and consists of second-growth forest. Lake Harriet Hunt is an important recreational location. The White River area supports tourist activities operated by the Cape Fox Corporation. The Mental Health Trust lands are currently being logged through 2012. The USFS lands along the existing Shelter Cove Road supported logging into the 1990's but logging activities are no longer underway.

A subdivision is located near Bat Point along the northeast side of George Inlet where several private lots with cabins or homes are located. This subdivision is not connected to the road but is accessible by boat. The proposed road is not intended to connect with this subdivision; however those property owners may find relatively easy access to alternatives that pass nearby. From comments received from the Open House meeting held in Ketchikan September 7th, 2011, it was clear that some people wanted to retain the remote qualities of their current rural setting, while others expressed an interest for road access. Please refer to the socioeconomic study by Northern Economic in Appendix A, Section 4, Land Use Impacts.

3.8.1a – Old-growth Forest

One portion of the congressionally designated Section 4407 corridor passes through an old-growth reserve, near the west end of the USFS Shelter Cove Road. The Tongass National Forest is managed to produce desired resource values and also sustain diversity and productivity of the ecosystems. Old-growth forests are the predominant vegetative structure on the Tongass. Old-growth forests are important in supporting wildlife and vegetative biodiversity. The goals of the USFS in the management of old-growth habitat include maintaining areas of old-growth forest and associated ecological system to provide habitat for associated resources including brown bear, wolf, marten, goshawk, deer, river otter, and mountain goats.

¹¹

In addition, a Tongass National Forest Land and Resource Management Plan (TLMP) goal for old-growth forest is to support younger conifer forests so they can achieve old growth characteristics.

¹¹ US Forest Service, Tongass National Forest Land and Resource Management Plan, 2008.

The outcome is to ensure that the Tongass continues to have old-growth forests and support their associated species and subspecies. DOT&PF will continue to coordinate with USFS if it selects a route that passes through old-growth forest.

3.8.1b – Naha-LUD II Area

The congressionally designated Section 4407 easement also crosses the Naha Reserve. The 31,350 acre Naha Reserve was established in 1990 by the Tongass Timber Reserve Act as a Land Use Designation II (LUD II).¹² It is also a Special Interest Area - an overlapping Land Use designation.¹³

LUD II, by definition, is an area of land which specific management direction is applied. According to the TLMP (2008), LUD II goal is for the USFS to “Manage these areas in a roadless state to retain their wildland character.” However, TLMP allows USFS to authorize road construction through the LUD II area “for access to authorized uses, transportation needs identified by the state, or vital linkages.”¹⁴ USFS may permit activities such as primitive recreational facilities and habitat improvements for fish and wildlife. Commercial Timber harvest is prohibited but the USFS can allow salvage operations to protect other resources. If DOT&PF selects a route that utilizes its reciprocal easement, it will coordinate with USFS on means to manage the transportation and utility corridor compatibly with the LUD II area.

Since the Naha Reserve is also considered a Special Interest Area, the following applies:

“Special Interest Areas are not available for timber harvest, and roads would be allowed only if they are compatible with the interpretive goals of a particular area¹⁵. Other restrictions may be imposed on a case-by-case basis to protect an area’s unique values. These could include closures to off-highway (or off-road) vehicle (OHV) use and withdrawals from mineral entry. Currently, the Mendenhall Glacier, Ward Lake, and Naha Recreation Areas are withdrawn from mineral entry.¹⁶

In keeping with the LUD II goals, off-road vehicles and mining are restricted in the Naha Wilderness. The Naha River has been nominated as a National Wild and Scenic River but is not so designated at this time. It is reported to have 17 miles of wild river conditions and 2 miles of scenic river conditions.

¹² Public Law 101-626 November 28, 1990. Section 201(11)

¹³ US Forest Service, Tongass National Forest Land and Resource Management Plan, 2008. Page 3-69

¹⁴ US Forest Service, Tongass National Forest Land and Resource Management Plan, 2008. Page 3-69

¹⁵ Naha is LUD II where road building is permissible for transportation needs identified by the State.

¹⁶ US Forest Service, Tongass National Forest Land and Resource Management Plan, 2008.pg. 3-474

If DOT&PF selects a route that utilizes its reciprocal easement, it will coordinate with USFS on means to manage the transportation and utility corridor compatibly with the Naha Reserve.

3.9 – Environment

Environmental documentation, approvals, and permits will be needed for any of the selected alternatives. Even if this project is funded entirely with State funds as proposed, there are still federal actions required and a federal environmental decision document will be necessary.

The size and scope of the project and the lead federal agency will determine the appropriate class of action for an environmental document. All alternatives would require a USACE permit to fill jurisdictional wetlands. Therefore the USACE would likely prepare a NEPA decision document in order to issue their permit. The USFS may require a NEPA decision document if the selected alternative crosses USFS land not in the reciprocal easement.

NEPA documentation evaluates impacts to both the human and natural environment. Below are those resource categories that will be the most important in characterizing the existing environment.

3.9.1 – Right of Way Impacts

Before DOT&PF can construct a road, they must have the right-of-way to do so. The lands within the corridors of the project area are owned by the USFS, Mental Health Trust, Cape Fox Corporation, DNR, and Ketchikan Gateway Borough. DOT&PF already has transportation and utility rights-of-way within the US Congressionally established reciprocal easement.

3.9.2 – Social & Cultural Impacts

The social and cultural setting around the perimeter of the project vicinity has a primary focus of wilderness. As discussed previously, the Old-Growth Forest and Naha LUD II Wilderness are important aspects of the national, state and local social environment. The public outreach done in 2009 in the Ketchikan area resulted in a positive response to increasing access to these areas. The general public was most interested in recreational, hunting, and other subsistence activities such as berry picking. These activities are compatible with the wilderness aspects of the project area and are allowed by the Section 4407 easement.

Several areas within the project vicinity are considered developable and some tracks of land have been surveyed and parcels sold.

These areas exist at Leask Cove, north of the mouth of White River in Upper George Inlet, and Moser Bay north of Ketchikan. Additional road access could encourage this development and increase recreational opportunities inland from Ketchikan.¹⁷

3.9.3 – Economic Impacts & Subsistence

During the summer and fall of 2009 DOT&PF conducted a study to help clarify the purpose and need statement for the project, analyze land use impacts, economic impacts to Ketchikan and secondary and cumulative effects to the human environment. The process included a household telephone survey, interviews with public officials and private individuals and literature research.

Areas of investigation included:

- Small-scale timber harvests, private woodcutting, tourism, recreational use, private land access to existing dwellings and public lands access in the Ketchikan area.
- Tourism development
- Timber and land sales
- Potential land sales.

In general, the study shows that there is strong community support for the proposed project primarily for recreational needs. Please refer to Appendix A which includes the full report for details.

Mental Health Trust has expressed interest in access to their land for future development and sales. Local USFS staff have expressed support for this project since it will enhance future activities on Forest lands.

Subsistence

Construction of a road open to the public could impact subsistence resources. Salmon, trout and ocean dwelling bottom fish are the principle subsistence fish resources in the affected area. Pacific salmon, with the exception of Chinook are harvested in both fresh and salt water in a variety of ways throughout the year. The Sitka black-tailed deer also is an important subsistence species found throughout the area harvested August through December. Trapping is another subsistence activity that usually occurs along the saltwater-upland interface and along the major stream systems. Other types of subsistence activities include fire wood harvesting, berry picking, and grass harvesting for producing baskets.

3.9.4 – Land Use & Transportation Plans

The following land use plans apply to the proposed project depending on the chosen alternative:

¹⁷ State of Alaska Department of Natural Resources Southern Southeast Alaska Land Use Plan, 2000

- 2008 Tongass Forest Land and Resource Management Plan,
- 2000 Central/Southern Southeast DNR Area Plan, and
- 2009 Ketchikan Gateway Borough 2020 Comprehensive Plan, which references the now defunct 2007 Ketchikan Coastal Management Plan
- DOT&PF Southeast Alaska Transportation Plan

In 2008, the USFS implemented the approved Tongass Forest Land and Resource Management Plan (TLMP). That management plan presents specific goals and objectives to be followed in the management of 17 different defined land uses allowed in the Tongass. The TLMP also has prescribed management processes for two overlaying land uses; mining and transportation/utility corridors. As described above in sections 3.7.1 a and b, the NAHA Preserve and Old-growth forests are two of those designated land uses the USFS has developed management goals and objectives for, as well as prescribed management processes.

The Central Southern Southeast Land Use Plan is the DNR state land use plan for the vicinity. State land uses and designations include Forestry, General Use, Habitat, Harvest, and Public Facilities Recreation. According to this plan, the area known as the Salt Chuck, or Salt Lagoon in Upper George Inlet is particularly significant for its habitat resources. This area is a location for concentrated populations of shorebirds and waterfowl (including trumpeter swans) and harbor seals.

The KGB Comprehensive Plan encourages the prioritizing of shoreline land uses and establishing criteria for shoreline development in order to preserve and enhance coastal resources and to ensure the continued economic viability of the Borough. The KGB Comprehensive Plan also encourages the maintenance and increase of public access to the beach and/or shoreline consistent with the public need.

The DOT&PF Southeast Alaska Transportation Plan (SATP) for the project area calls for the use of the congressionally designated Section 4407 reciprocal easement to construct a road between Lake Harriet Hunt and Shelter Cove. The SATP further plans to construct a road to the Canadian Border and beyond. The segment to Shelter Cove is included in that broader plan but has independent utility even if the full SATP plan is not realized.

3.9.5 – Impacts to Historical Properties

The following general discussion is an overview of the type and locations of potential cultural resources that may be present in the proposed project corridors. Access to available resources was a major factor in subsistence for native populations and where settlement and use areas are expected to be found. Travel corridors between major resources, such as between a freshwater lake or major river and the marine shoreline are also areas with a high probability of finding intact cultural resources.

The Office of History and Archaeology (OHA), Alaska Heritage Resources Survey (AHRs), a database of documented cultural resources in Alaska, lists approximately 10 archaeological and historical resources in the vicinity of the project alternatives; most are archaeological and associated with native local resource utilization.

The archaeological record in Southeast Alaska began by the end of the last ice age. As de-glaciations began, ocean waters flooded into low-lying areas depositing marine sediments. Subsequent rebound elevated these low areas and in many, muskegs began to develop and later drier soils and forest.

The early native routes follow the waterways that provided access to the related resources, to interior (forest) and food resources in the attached streams, wetlands and scattered open grassy areas. As a result of this, shorelines are typically considered high-probability areas for cultural resource discovery.

3.9.6 – Wetlands Impacts

An initial wetland impact evaluation was done in 2009. That effort included reviewing the National Wetlands Inventory (NWI) data base which estimates the type and amount of wetlands present for the various routes. Additionally, DOT&PF had a wetland delineation study conducted along the White River Road, Leask Cove, Bat Cove, and the Salt Lagoon route (the lower portions of alternatives II and III).

Using USFWS NWI maps, DOT&PF estimated the amount of wetlands that could be affected by each of the project alternatives. These numbers ranged between 55 and 65 acres. Quantity of wetlands is a factor to use in comparing alternatives; however a more important factor would be the functions and values of those wetlands. Wetlands adjacent to roads or clear cut would have lower functions than wetlands in pristine areas.

That survey estimated the amount and quality of the potentially impacted wetlands for sections of the alternatives under consideration. Because the roads within the project vicinity were constructed under the USFS exemption from Section 404 of the Clean Water Act for logging roads, no permits were required¹⁸. Should DOT&PF use some of these roads for public access, wetland permits would be needed as if the logging roads were not constructed. Therefore, the amount of wetlands that would be impacted by each alternative is relatively similar. However alternatives that maximize the use of existing roads would have less impact to wetlands than those alternatives using fewer existing roads.

3.9.7 – Water Body Involvement

None of the alternatives under consideration cross water bodies other than streams.

¹⁸ Also known as the Silvicultural Exemption

3.9.8 – Fish & Wildlife

The USFS conducted an Environmental Impact Statement (EIS) to determine potential impacts to the Tongass National Forest if their proposed Tongass Land Use Management Plan (TLMP) were implemented. That Final EIS (USFS TLMP FEIS, 2008) describes thoroughly the fish and wildlife habitats and resources within the project vicinity. Basically, the biological setting that supports fish and wildlife is one of a coastal temperate rainforest with a relatively complex topography ranging from marine, lacustrine, and riverine shorelines to the alpine zones above 3,000 feet. In between zones are forests of old-growth and second-growth conifers, grass-sedge meadows and muskegs.

Fish Streams

Alaska Department of Fish and Game (ADF&G) catalogued anadromous and resident fish streams are present throughout the project area and support sockeye, coho, pink and chum spawning and rearing habitat. Steelhead trout, cutthroat trout and Dolly Varden are also present throughout the project vicinity. There are four major watershed systems within the project vicinity; White River, Leask Lake, Naha River/Heckman Lake and the Salt Lagoon. The White River, Leask Lake, and Salt Lagoon all flow east or south into George Inlet. The Naha River flows west to Behm Canal. Shelter Cove road is constructed in the northern portion of the Salt Lagoon Basin. Appendix D contains maps from the ADF&G anadromous fish catalogue that identifies the streams and species report in those project vicinity streams.

All anadromous fish stream crossings would be designed to accommodate fish passage. Culverts on existing roads will need further evaluation if there are potential fish passage concerns. Some of the existing culverts are perched or otherwise impede fish passage. Reconstruction of the log stringer bridges over Leask Creek will also need evaluation regarding potential fish stream impacts. DOT&PF staff in August 2008 evaluated several streams surrounding Lake Harriet Hunt to determine locations of anadromous streams. Additional field work will be required depending on the alternative selected, particularly near the Salt Lagoon area.

Wildlife Habitat

This section is provided to give an overview of the types of wildlife and wildlife habitat that are present within the general vicinity of the alternative corridors evaluated. Should the reciprocal easement be selected, the road design would follow the prescribed TLMP requirements that have been developed to protect, to the degree possible, resources within the Tongass. If other USFS lands are selected to move forward and an EIS is needed, these resources would be evaluated in detail to determine the potential impacts and mitigation that resource agencies would require.

According to the USFS TLMP FEIS, 2008, habitat such as that found within the project vicinity supports over 300 species of birds and mammals including brown and black bear, Sitka black-tailed deer, moose, wolf, mountain goat, beaver, otter, and marten. Bald eagles nest and roost all along the coasts. Lakes and estuarine areas are important waterfowl habitat for nesting as well as for use during spring and fall migrations.

The area known as the Salt Lagoon in Upper George Inlet is particularly significant for its habitat resources. This area is a concentration location for shorebirds, waterfowl (including trumpeter swans) and harbor seals.

Although many wildlife species of the Tongass are associated with more than one habitat type, most inhabit old-growth forests or prey on species that inhabit old-growth forests. Old growth is characterized by a patchy, multi-layered canopy; trees that represent many age classes; large trees that dominate the overstory, standing dead (snags) or decadent trees; and higher accumulations of down woody material. The structure and function of an old-growth ecosystem will be influenced by stand size, landscape position, and juxtaposition with other elements of the landscape. Productive Old Growth (POG) can be broken down further in terms of seven categories based on tree size and density (USFS TLMP FEIS, 2008).

3.9.9 – Threatened and Endangered Species

Preliminary investigation indicates low potential impacts to these species. Additional field work is needed to confirm that there are no impacts to threatened and endangered species particularly in the areas of new road construction.

3.9.9a – Bald Eagles

Preliminary investigation indicates relatively low potential impacts to bald eagles and nesting sites except along major waterways including George Inlet and Carroll Inlet. At least six nesting sites were identified along the Low Road Corridor but additional field work will be needed to confirm and to update the preliminary survey.

3.9.10 – Permits & Authorizations

Permits will be required from the ADF&G for fish stream crossings. This project will also require a permit from the USACE primarily for jurisdictional wetlands and for the conversion of logging roads from silviculture usage to public access. If a selected project alternative has activities that have a potential to disturb eagles or their nests, a USFWS bald eagle take permit will be required.

3.9.11 – Snow Avalanche Hazard

Initial reconnaissance indicates few potential areas for snow avalanche hazard. The proposed road is **not** anticipated to be maintained year round.

3.9.12 – Maintenance

The Revilla Road has a “No Road Maintenance after Oct 1” sign at approximately the .01 mile point. Therefore snow removal would not be factored into alternative comparison, other than the relative time the various alternatives would be closed due to snow. Obviously a lower elevation route would be open longer and would be preferable to some user groups while winter activity enthusiasts would prefer a higher route.

4.0 – DESIGN STANDARDS AND OPERATIONAL ASSUMPTIONS

Based upon the language contained in the voter approved GO bond for this proposed road, a single lane gravel road with inter-visible turnouts was analyzed. The road design criteria are based on a functional roadway classification of Very Low-Volume Local Roads ($ADT \leq 400$). (Refer to Figure 3.)

Single Lane Design Criteria

- Design Speed: 20 miles per hour
- Single-lane road
- 14 foot single-lane width with visible turnouts as needed
- Maximum grade of 10%
- Maximum K values of 17 (sag) and 7 (crest)

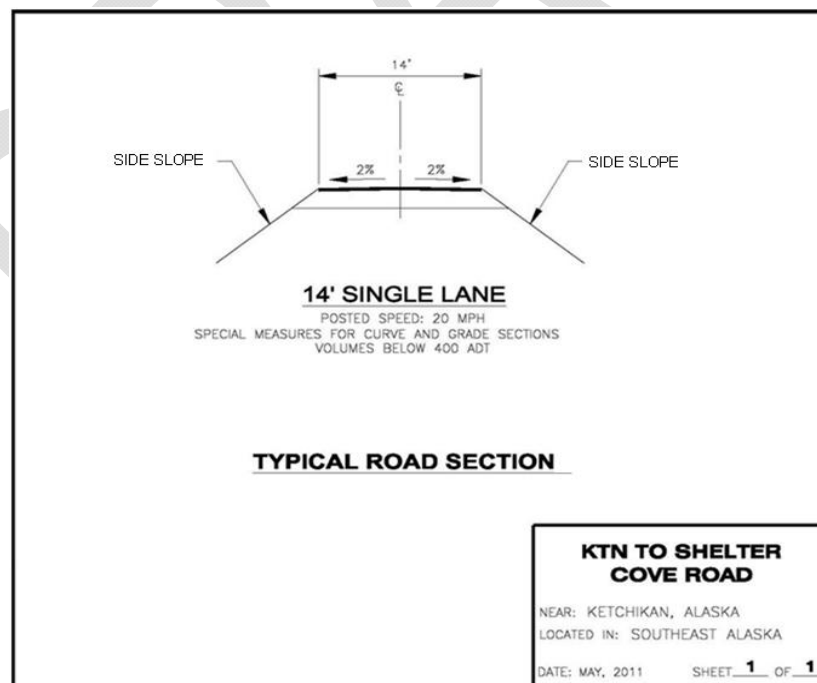


Figure #4. Typical Road Section

4.1 – Reference Standards

The following reference standards have been used.

1. American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets, 5th Edition, 2004.*
2. DOTPF Highway Preconstruction Manual.
3. AASHTO *Roadside Design Guide, 2002.*
4. AASHTO *Guidelines for Geometric Design of Very-Low Volume Local Roads (ADT ≤ 400), 2001.*

5.0 – ALTERNATIVE DESCRIPTIONS

After field reconnaissance and review of the preliminary geotechnical information, DOT&PF considered the No-Build Alternative and four other alternatives with different combinations of alignments. High refers to a more northerly route whereas Low is more southerly. Generally the High route encounters higher elevations than the Low route. Please refer to Figure 2: Alternatives Location Map.

- No-Build
- Alternative I- High Road Corridor
- Alternative II and II (A) - Low Road Corridor
- Alternative III- High-Low Corridor
- Alternative IV and IV (A) - Low-High Corridor

5.1 – No-Build Alternative

The No-Build Alternative would construct nothing to link the Lake Harriet Hunt area with Shelter Cove. The roads in the area would remain the same with their present configuration and ownership.

5.2 – Alternative I – High – High Road Corridor

This corridor generally follows the USFS Section 4407 reciprocal easement. This is a northerly, upland route from Lake Harriet Hunt to Leask Lake. Beyond Leask Lake the road bears to the northeast then turns southeast to join the existing Shelter Cove Road.

5.3 – Alternative II and II (A) - Low – Low Road Corridor

This corridor follows either the White River Road or would use a variation around the north of Lake Harriet Hunt to connect with existing logging roads in the Mental Health Trust, and then follows the shore of George Inlet to the Salt Lagoon, then northerly to where it joins the existing Shelter Cove Road.

5.4 – Alternative III- High - Low Corridor

This corridor follows the Section 4407 reciprocal easement to Leask Lake similar to Alternative I, then drops down to the shore of George Inlet at Leask Cove. From there, it follows the Low Road corridor to the Shelter Cove Road.

5.5 – Alternative IV and IV (A) - Low - High Corridor

This corridor follows either the White River Road or the variation around Lake Harriet Hunt to Leask Cove where it turns northerly to connect with the Section 4407 reciprocal easement east of Leask Lake then turns southeasterly to join with the existing Shelter Cove Road.

6.0 – ANALYSIS OF ALTERNATIVES

This section summarizes the features that distinguish each alternative. It should be noted that Mental Health Trust Land is considered private land for purposes of this analysis since, like Cape Fox Corporation land, special permission would be necessary for general public access.

DOT&PF analyzed the alternatives with digitized 100-foot contours from the US Geological Survey Ketchikan quad map. In addition, logging road and wetland data from the USFS and USACE, catalogued fish stream data from ADF&G and cultural resource information from the AHRs database were evaluated. Limited aerial reconnaissance, mapping and field work was accomplished as well.

A comparison of each alternative is also listed in Table 3 at the end of section 6.1.

Environmental Considerations

The environmental characteristics used to compare alternatives based on available information are listed below:

- **Wetland functions:** the amount of wetlands along each alternative is not an adequate characteristic to use for alternative comparison at this time. Rather, it is assumed that functional condition of wetlands can be compared because existing logging roads constructed in wetlands have altered and likely diminished wetland functions. Therefore, using existing logging roads versus constructing new roads lessens impacts to wetlands.
- **New anadromous fish stream crossings:** alternatives using existing logging roads that already have anadromous fish stream crossings would be preferred over constructing new roads with new anadromous fish streams crossings because new stream crossings can introduce habitat changes in pristine systems.

Also, when existing logging roads are used, opportunities to improve fish passage at existing stream crossings can be a benefit.

- **Bald eagle nests:** alternatives that would be constructed in the vicinity of bald eagle trees are less preferable than alternatives that do not have eagle nests. Eagles in this area are expected to not be habituated to vehicle traffic. Alternatives with more nests have a higher probability to affect bald eagles than those with fewer nests.
- **Cultural resource probability:** Southeast Alaska has been used by Native Alaskans for thousands of years. Based on available research, some habitats and terrains are more likely to have been used by Native peoples than others. The presence of cultural resources can negatively affect the cost of an alternative and the acceptability of one alternative over another.

The table below compares the alternatives regarding the environmental considerations listed above. All alternatives except for the No-Build Alternative fulfill the purpose and need to varying degrees and will be discussed further in this section.

Table 1. Environmental Considerations

SHELTER COVE ALTERNATIVES: ENVIRONMENTAL CONSIDERATIONS COMPARISON									
ALTERNATIVES	Fulfillment of Purpose and Need	Anticipated Type of Environmental Documents	Total Length (Miles)	New Road (Miles)	Existing Logging Roads (Miles)	Wetland Functions	New Anadromous Stream Crossings	Bald Eagle Nests in Vicinity	Probability of Cultural Resources
NO-BUILD ALTERNATIVE	no	NA	NA	NA	NA	NA	NA	NA	NA
ALTERNATIVE I HIGH - HIGH	yes	USCOE NEPA	21.8	9.0	12.7	Moderate functions	3	1	moderate
ALTERNATIVE II LOW - LOW	yes	USFS EIS USCOE NEPA	22.2	5.5	16.7	Lower Function	4	8	high
ALTERNATIVE II (A) LOW-LOW	yes	USFS EIS USCOE NEPA	19.4	8.7	10.7	Moderate functions	4	8	low - moderate
ALTERNATIVE III HIGH - LOW	yes	USFS EIS USCOE NEPA	23.4	10.3	13.1	Highest functions	5	3	moderate - high
ALTERNATIVE IV LOW HIGH	yes	USCOE NEPA	23.3	4.3	19.1	Lowest Function	1	6	high
ALTERNATIVE IV (A) LOW HIGH	yes	USFS EIS USCOE NEPA	19.6	7.4	12.2	Moderate functions	1	6	moderate

Cost Assumptions

Cost is another factor considered when comparing alternatives. The cost estimates for the various alternatives are approximate and based on the limited amount of available information.

The existing logging roads within the various alternatives will likely require substantial realignment and reconstruction to meet the 20 mph single-lane gravel surface standard. This means that the existing roads have some worth by varying degree depending on the existing road's quality of construction and level of maintenance. In the case of some of the logging roads, the cost to upgrade will still be expensive.

The general construction cost trend since 1972 has averaged approximately 5% per year. Construction cost indices for FHWA projects since 1996 appear to follow that increase. Recent bid prices have dropped somewhat, so we have assumed a 5% per year cost escalation factor until 2009 and then a 3% per year factor until 2014 for planning purposes.

In estimating costs for this project we have assumed that the existing USFS Shelter Cove Road requires no additional upgrades or work to meet the 20 mph design standard. Bridges were assumed to be 16 feet wide with a cost of \$ 280/sq ft which is based upon recent installed prices for modular bridges in the Tongass.

Based upon recent and past experience with constructing a single-lane, composite road in similar terrain we have chosen the following estimated costs per mile in different types of terrain. See Table 2 below.

Table 2. Terrain Type and Estimated Cost per mile

Terrain Type	2014 Cost (\$ per mile)
<i>Type I - Mountainous</i>	<i>\$ 800,000</i>
<i>Type II - Rolling and Muskeg</i>	<i>\$ 600,000</i>
<i>Type III - Flat and Reconstruction of Logging Road</i>	<i>\$ 500,000</i>

6.1 – Analysis Criteria

Each alternative was evaluated using the following criteria:

- **Fulfillment of the preliminary purpose and need**
- **Road Length**
 - Overall road length
 - New road construction length
 - Existing logging road used length in miles
- **Effects to Land Use and Right of Way**
 - Road adjacent to public lands (amount of public land accessed)
 - Road in miles through designated old-growth forest
 - Road in miles through Naha LUD II Reserve
 - Road in miles along the Section 4407 reciprocal easement
- **Environmental Considerations**
 - Anticipated type and length of time to obtain an environmental document
 - Environmental characteristics.
 - Wetlands
 - Fish Streams
 - Eagles
 - Cultural
- **Constructability, Maintenance, and Cost**
 - Highest elevation attained (affects length of snow closure time)
 - Length of road above 500 ft elevation
 - Constructability issues
 - Cost

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SHELTER COVE ALTERNATIVES COMPARISON																		
		ROADWAY LENGTH - MILES																
					ADJACENT LAND OWNERSHIP - MILES													
ALTERNATIVES	Fulfillment of Purpose and Need	Total Length	New Road Construction	Logging Roads Used	Borders Public Lands (including Shelter Cove Road)	USFS	DNR	KGB	Mental Health Trust	Cape Fox	Length of Road through Designated Old Growth	Length of Road through Naha	Miles of 4407 Reciprocal Easement	Miles of Road above 500 ft Elevation	Highest Elevation Attained (length of time road open due to snow)	Anticipated Type of Environmental Document	Constructability Issues	Estimated Construction Cost
NO-BUILD ALTERNATIVE	NO	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	\$0.00
ALTERNATIVE I HIGH - HIGH	YES	21.75	9.05	12.71	16.13	15.29	0.68	0.16	4.87	0.75	1.25	2.01	15.29	3.71	1200 ft	USCOE NEPA	ravines and steeper terrain out of Lake Harriet Hunt basin, highest amount of muskeg, moderate to difficult terrain past Naha.	\$17,371,322
ALTERNATIVE II LOW - LOW	YES	22.21	5.53	16.68	12.83	8.57	4.26	0.00	4.37	5.00	0.73	0.00	7.84	0.10	500 ft	USFS EIS	Easy to moderate terrain with some steeper slopes along George Inlet.	\$15,593,024
ALTERNATIVE II (A) LOW LOW	YES	19.38	8.68	10.70	15.37	2.11	5.42	0.00	4.01	0.00	0.73	0.00	7.84	3.85	1200 ft	USFS EIS	Some ravines and moderate terrain at Lake Harriet Hunt with some steeper slopes along George Inlet.	\$15,445,918
ALTERNATIVE III HIGH - LOW	YES	23.41	10.30	13.11	16.69	11.75	4.94	0.00	5.97	0.75	0.73	0.00	11.02	3.71	500 ft	USFS EIS	Some steep slopes, ravines, and muskeg with some steeper slopes along George Inlet.	\$18,477,671
ALTERNATIVE IV LOW HIGH	YES	23.33	4.27	19.06	13.03	13.03	0.00	0.00	5.3	5.00	1.25	2.01	12.11	0.10	500 ft	USFS EIS	Relatively easy to moderate terrain until Naha, then moderate to difficult.	\$15,652,827
ALTERNATIVE IV (A) LOW HIGH	YES	19.55	7.39	12.15	14.64	13.50	1.14	0.00	4.91	0.00	1.25	2.01	12.11	3.85	1200 ft	USFS EIS	Some ravines and steeper terrain at Lake Harriet Hunt then relatively easy to moderate terrain until difficult terrain past Naha.	\$14,917,488

Table 3
 Alternative Comparison
 (Engineering)
 Page 22a

6.2 – No-Build Alternative

The no-build alternative does not meet the project's purpose and need and is not considered a viable option. This alternative consists of no new construction or infrastructure improvements. While the local community and government agencies could consider making arrangements with private landowners to provide access to lands for recreational use or commercial use, the No-Build alternative does not provide access to public lands nor does it connect Shelter Cove to the Lake Harriet Hunt vicinity. Since the No-Build alternative does not address the project's purpose and need, it was not considered a feasible option and was dropped from further analysis.

All of the other alternatives fulfill the purpose and need by providing access to public lands by varying degrees and link existing logging roads from the Harriet Hunt Lake area to Shelter Cove.

6.3 – Alternative I – HIGH - HIGH Road Corridor

Road Length

Alternative I is 21.75 miles long and has 9.05 miles of new road construction using 12.71 miles of existing logging roads, including the existing Shelter Cove Road.

Effects to Land Use and Right of Way

This alternative has 16.13 miles of road accessing public lands, passes through 1.25 miles of designated old-growth forest and has 2 miles through the Naha Wilderness Reserve. Since this is the only alternative that follows the whole length of the Section 4407 reciprocal easement, it has the greatest use of the easement with 15.29 miles.

Environmental Considerations

Since Alternative I stays either within the reciprocal easement or on private Mental Health Trust Land, the anticipated environmental document would be a USACE NEPA document, most likely an EIS. However, in theory, the time frame for this type of environmental document should take approximately a year less than the USFS federal action other alternatives will trigger crossing USFS land outside of the Section 4407 easement.

Alternative I with 9 miles of new road construction would impact wetlands with moderate function, similar to Alternatives II (A) and IV (A). Three new anadromous fish stream crossings would need to be constructed, second least in number compared to Alternatives IV and IV (A) with 1 new crossing. Alternative I has one known bald eagle nest in the vicinity, the lowest in number of all the alternatives.

Alternative I is generally the furthest away from coastal areas, yet passes through likely cultural and historic travel corridors to Leask and Heckman Lake, therefore it is anticipated that the risk of conflicts with cultural resources is relatively moderate. Although not evident in today's landscape, some areas could contain historic resources and might require extensive documentation if impacted by construction.

Constructability, Maintenance and Cost

This alternative would have 3.71 miles above 500 ft elevation, attain approximately 1000 – 1200 feet in elevation and similar with alternatives II (A) and IV (A) would remain closed due to snow for the longest time. Alternative I would also traverse localized sections of unstable rock, has a high potential for deep ravines as it descends the ridge above Lake Harriet Hunt Basin into Wolf Valley and would have the greatest amount of muskeg. In light of these factors, this alternative is considered to have the most challenging terrain.

The estimated construction cost of Alternative I is approximately \$ 17,371,000, making it the second highest cost alternative.

6.4 – Alternative II and II (A) – LOW – LOW Road Corridor

Road length

Alternative II would be 22.21 miles long, require 5.53 miles of new road construction and use 16.68 miles of existing logging roads, including the existing Shelter Cove road. If the option around Lake Harriet Hunt is used, Alternative II (A) would be 19.38 miles long with 8.68 miles of new road construction and utilize 10.70 miles of existing logging roads including the existing Shelter Cove Road.

Effects to Land Use and Right of Way

Alternative II has 12.83 miles of road accessing public lands, passes through 0.73 miles of designated old-growth forest, and does not enter the Naha Wilderness Reserve. This alternative generally follows the coastal shoreline and consequently would use only the existing Shelter Cove Road Portion of the Section 4407 reciprocal easement.

Alternative II (A) would have 15.37 miles of road accessing public lands and similar to Alternative II, pass through 0.73 miles of designated old-growth forest and does not enter the Naha Wilderness Reserve.

Environmental Considerations

Both Alternative II and II (A) would cross a portion of USFS land outside the reciprocal easement and could require a USFS EIS.

Alternative II, with the most use of existing logging roads and only 5.53 miles of new road construction would impact wetlands with lower function, similar to Alternative IV, which has the least amount of new road construction at 4.27 miles.

Alternative II (A) with 8.68 miles of new road construction would impact wetlands of moderate function, similar to Alternatives I and IV (A). Both Alternative II and II (A) would require 4 new anadromous fish stream crossings. Alternative II and II (A) have 8 known bald eagle nests in the vicinity, the highest in number of all the alternatives.

Alternative II contains the greatest variety of ecological units and consequently has the highest potential for encountering cultural resources. The areas of beach gravels butted against steep and solid rock outcropping at the margin of the bay are especially rich in potential cultural occupations. Fish weirs, canoe runs and Culturally Modified Trees (CMTs) indicate cultural activity and the exposed rocky shoreline are possible sites for petroglyphs. The first portion of Alternative II (A) has low to moderate cultural potential similar to Alternative I. The landscape could retain historic resources as well as earlier prehistoric components in any undisturbed areas especially adjacent to water sources. Both Alternative II and II (A) present the highest risk for conflicts with cultural resources where they are closest to marine waters.

Constructability, Maintenance and Cost

Alternative II would remain relatively low in elevation with only a tenth of a mile above 500 ft elevation and would be open the longest time of the year of all the alternatives. However, Alternative II (A) has 3.85 miles above 500 ft elevation, would attain approximately 1000 feet in elevation and would be closed similar to Alternative I and IV (A) due to snow. Alternative II (A) also would likely encounter significant ravines as it climbs above Lake Harriet Hunt. Alternative II would have the least challenging terrain of all of the alternatives while Alternative II (A) would encounter moderately challenging terrain for the initial portion above Lake Harriet Hunt. When following the Leask Cove to the Salt Lagoon area, both would encounter steep terrain, though not nearly as steep as Alternative I or III. Both Alternative II and II (A) encounter the least amount of muskeg.

The estimated construction cost for Alternative II is \$ 15,593,000 and Alternative II (A) is estimated to cost \$ 15,446,000, which places both of them quite a bit below Alternatives I and III in cost.

6.5 – Alternative III – HIGH – LOW Road Corridor

Road Length

Alternative III is 23.41 miles long, includes 10.30 miles of new road construction and uses 13.11 miles of existing logging roads, including the existing Shelter Cove Road.

This alternative has the longest total road mileage and also has the highest amount of new road construction.

Effects to Land Use and Right of Way

This alternative would have 16.69 miles of road accessing public lands, which is the highest amount of public access. This alternative passes through 0.73 miles of designated old-growth forest and does not cross the Naha Wilderness Reserve.

Environmental Considerations

Alternative III initially follows the Section 4407 easement and remains on private or state land until it crosses USFS property as it approaches the existing Shelter Cove Road System. Since it crosses USFS lands outside the Section 4407 easement, it would likely require a USFS EIS.

This alternative, with the greatest mileage of new road construction at 10.3 miles, would have the greatest impact to the highest functioning wetlands of all the alternatives. This alternative requires the construction of 5 new anadromous fish stream crossings, the highest number of stream crossings of all the alternatives. Alternative III also has 3 known bald eagle nests in the vicinity.

Alternative III has a moderately high potential for encountering cultural resources. The segment along the shoreline areas could contain such archaeological features as fish traps and culturally modified trees (CMTs).

Constructability, Maintenance and Cost

As in Alternative I, the first portion of Alternative III would have 3.71 miles of road above 500 ft elevation, attain elevations of about 1000 feet and would have similar snow maintenance closures as Alternative I and II (A). This alternative would have similar challenging terrain and constructability issues as Alternative I, as it combines the localized slope instability, ravines and muskeg issues of the beginning of Alternative I and then also encounters steeper terrain along the Leask Cove to the Salt Lagoon areas as in Alternative II.

The estimated construction cost for Alternative III is \$ 18,478,000 making this the most costly alternative.

6.6 – ALTERNATIVE IV AND IV (A) – LOW – HIGH Road Corridor

Road Length

Alternative IV would be 23.33 miles in total length with 4.27 miles of new road construction and 19.06 miles of existing logging roads utilized. This alternative has the least amount of new road construction. However, Alternative IV's total length is very similar to Alternative II, making Alternative IV a close second in total road length.

Alternative IV (A) would follow a northerly route around Lake Harriet Hunt to connect with existing Mental Health Trust logging roads where it then follows the remaining Alternative IV corridor. Alternative IV (A) would be 19.55 miles long, use 12.15 miles of existing logging roads, including the existing Shelter Cove Road, and require 7.39 miles of new road construction.

Effects to Land Use and Right of Way

Alternative IV would have 14.64 miles of road accessing public lands, pass through 1.25 miles of designated old-growth forest and 2 miles through the Naha Wilderness Reserve. This alternative would also utilize 12.11 miles of the Section 4407 reciprocal easement. Since Alternative IV (A) traverses some additional USFS property avoiding Cape Fox property, it accesses slightly more public land than Alternative IV with 14.64 road miles. Alternative IV (A), similar to Alternative IV, passes through 1.25 miles of designated old-growth forest and 2 miles of Naha Reserve and uses 12.11 miles of the Section 4407 reciprocal easement.

Environmental Considerations

Alternative IV would not likely require a USFS EIS environmental document since it would follow the Section 4407 reciprocal easement for the portion that passes through USFS property and stays on private property until the end of the project. Alternative IV (A) however traverses a portion of USFS land that likely would not be within the Section 4407 reciprocal easement and would need to go through the USFS EIS environmental document process.

Alternative IV has the least mileage of new road construction of all the alternatives and would impact wetlands with the lowest function. Alternative IV (A) with 7.39 miles of new road construction would impact wetlands of moderate function, similar to Alternatives I and II (A). Both Alternative IV and IV (A) would require 1 new anadromous fish stream crossing, the lowest number out of all the alternatives. Both of these alternatives also have 6 known bald eagle nests in the vicinity, second only to Alternatives II and II (A) with 8 bald eagle nests.

Alternative IV has a high potential for encountering cultural resources. As in Alternative II, the segment along the shoreline zone contains the greatest variety of ecological units and consequently has the highest potential for encountering cultural resources. The areas of beach gravels butted against steep and solid rock outcropping at the margin of the bay are especially rich in potential cultural occupations. Fish weirs, canoe runs, CMTs indicate cultural activity and the exposed rocky shoreline are possible sites where petroglyphs could be found. Overall, Alternative IV would have a high risk of conflict with cultural resources along the portions near salt water and a moderate risk in the upland portions.

Alternative IV (A) has a moderate potential for encountering cultural resources. Though not evident in today's landscape, the area could be a repository of historic resources and earlier prehistoric components could be present in any undisturbed areas especially adjacent to water sources. This alternative has a lower risk of cultural resource impact since the beginning of the road would be at a significantly higher elevation and doesn't cross any likely travel corridors.

Constructability, Maintenance and Cost

Alternative IV would remain open longer than Alternatives I and III since it only has a tenth of a mile of road above 500 ft elevation and the elevations gained are not as high. However Alternative IV (A) would reach higher elevations with 3.85 miles above 500 ft elevation and have similar snow maintenance issues to Alternatives I and II (A). Alternative IV and IV (A) have moderately challenging terrain.

The estimated construction cost for Alternative IV is \$ 15,653,000 and IV (A) is \$ 14,917,000 , making both of these alternatives comparable with Alternatives II and II (A) with their estimated construction costs of \$ 15,593,000 and \$ 15,446,000 respectively.

Table 4. Estimated Construction Costs

ALTERNATIVE COST SUMMARY	ESTIMATED TOTAL CONSTRUCTION COSTS (Rounded to nearest thousand)
ALTERNATIVE I (HIGH-HIGH)	\$ 17,371,000
ALTERNATIVE II (LOW-LOW)	\$ 15,593,000
ALTERNATIVE II-A (LOW-LOW)	\$ 15,446,000
ALTERNATIVE III (HIGH-LOW)	\$ 18,478,000
ALTERNATIVE IV (LOW HIGH)	\$ 15,653,000
ALTERNATIVE IV-A (LOW-HIGH)	\$ 14,917,000

7.0 – AGENCY AND PUBLIC PARTICIPATION

Due to the uncertainty of funding and the availability of right-of-way during the early stages of the project, the Department emphasized early agency coordination and participation. This was partly because the project had garnered enthusiastic local public support several years ago only to fail to move forward because of lack of funding and agency support.

Rather than raise the public's expectations unnecessarily, the DOT&PF met with the potential lead and participating agencies and organizations. Our intent was to evaluate and determine the feasibility of funding, agency cooperation and acquiring critical right-of-way prior to fully engaging the public.

As part of agency and public participation DOT&PF conducted a study completed in March 2010 to obtain socioeconomic data and analysis intended to support the development of a purpose and need statement for the project. The study included a household phone survey which obtained data on the level of demand for the project. Interviews of representatives of the major land owners including the Ketchikan Gateway Borough, City of Ketchikan, Cape Fox Corporation, U.S. Forest Service, the Alaska Mental Health Trust Authority and the Alaska Department of Natural Resources were also conducted primarily to determine existing land use and anticipated changes as a result of the proposed project. The public was also kept informed via newspaper articles and the statewide GO bond issue that was approved by Alaska voters in November 2008 to provide 10 million dollars for the project.

Additional public participation included meetings in 2008-2010 with Alaska Native organizations due to the potential impact to their lands. The meetings included resolving cultural issues arising from acquiring right-of-way across Alaskan Native owned lands as well as the usual engineering and financial issues. Alaska Mental Health Trust and the U.S. Forest Service, the other major land owners in the project area, also participated in agency meetings and various field trips.

7.1 – Agency Meetings

The following is a list of organizations that the Department has met with to discuss the project:

- U.S. Forest Service
- U.S. Army Corps of Engineers
- State of Alaska Department of Fish & Game
- U.S. Fish & Wildlife Service
- Alaska Mental Health Trust
- Cape Fox Corporation
- Sealaska Corporation
- Ketchikan Gateway Borough
- City of Ketchikan

7.2 – Public Involvement

On September 7th 2011, the DOT&PF conducted an open house at the Ketchikan Gateway Borough's Assembly chambers to provide information on the project and to receive questions and comments from the public.

Afternoon and evening sessions were held, attended by more than 50 people. In response, more than 20 comments have been received to date. A comment summary is in Appendix E.

The next stage is to broaden public involvement by conducting public meetings in Ketchikan to solicit input for the project with this report.

These meetings will be used to provide information to the public and to receive input to be used towards achieving a project that meets the needs of the traveling public.

Later, as the project develops into the environmental phase we will again solicit input in a continuing effort to address the concerns of those affected.

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Appendix A
Socioeconomic Household Survey
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Appendix B

Preliminary Hydrology and Hydraulics Report

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Appendix C

Geotechnical Reports

- 1. Preliminary Geotechnical Reconnaissance Report.
March, 2008 (Text Only, No Figures, Appendices)**
- 2. Phase II Reconnaissance Report Memo.
August, 2008**
- 3. Phase II Reconnaissance Report Memo.
Jan 2012 (Text Only, No Figures)**

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Appendix D

ADF&G Fish Resource Monitor Maps

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Appendix E Comment Summary

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