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Department of
Agriculture

Forest Service

Tongass
National Forest
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July 2008

Access and Travel Management Plan Environmental Assessment and Decision Notice for the Ketchikan-Misty Fiords Ranger District

**Ketchikan-Misty Fiords Ranger District
Ketchikan, Alaska**



Acronyms

ANILCA	Alaska National Interest Lands Conservation Act
ATM	Access Travel Management
BMPs	Best Management Practices
EA	Environmental Assessment
FS	Forest Service
FSM	Forest Service Manual
GIS	Geographic Information System
IDT	Interdisciplinary Team
INFRA	Infrastructure Application
LUD	Land Use Designation
MAF	Marine Access Facility
ML	Maintenance Level
MVUM	Motor Vehicle Use Map
NEPA	National Environmental Policy Act
NFS	National Forest System
OHV	Off Highway Vehicle
OML	Objective Maintenance Level
OPL	Operating Maintenance Level
RAP	Road Analysis Process
RCS	Road Condition Survey
RMO	Road Management Objective
ROS	Recreational Opportunity Spectrum
SEIS	2003 Forest Plan Supplemental Environmental Impact Statement
TLMP	Tongass National Forest Land and Resource Management Plan
TFLRA	Tongass (National Forest) Forest-Level Roads Analysis
VCU	Value Comparison Unit
WAA	Wildlife Analysis Area



United States
Department of
Agriculture

Forest
Service

Alaska Region
Tongass National Forest
Ketchikan-Misty Fiords
Ranger District

3031 Tongass Avenue
Ketchikan, AK 99901-5743
Phone: (907) 225-2148
Fax: (907) 225-8738

File Code: 1950-1

Date: July 11, 2008

Dear Reviewer:

Enclosed is your copy of the Decision Notice (DN) and Finding of No Significant Impact (FONSI) for Access and Travel Management Environmental Assessment (ATM EA) on the Ketchikan-Misty Fiords Ranger District, Tongass National Forest. Enclosed also is the Environmental Assessment for the ATM.

As a result of the 2005 Travel Management Rule (36 CFR 212), the Forest Service is required to designate those roads, trails, and areas that are open to motor vehicle use. The rule prohibits the use of motor vehicles off the designated system. The Decision Notice documents my decision to select **Alternative 3**, and the factors considered in reaching the decision. Information concerning implementation of this decision and appeal rights is included in the Decision Notice. The Forest Service regulations in 36 CFR 215 are in effect regarding appeal of this NEPA decision and contain requirements related to persons who may appeal and to the appeal process.

The EA proposes management of existing roads on the District. Three alternatives were analyzed for the project. Alternative 1 (No Action) used the current operational levels as a benchmark. Alternative 2 (the Proposed Action) closed about 100 miles of road to motorized use, and left about 100 miles open to high-clearance vehicles and OHVs. Public scoping included public meetings and a 30-day public comment period. As a result of public comment, Alternative 3 was developed, based on roads identified as most used by the public. Alternative 3 (the decision) maintains about 109 miles of road for high-clearance vehicles and OHVs, and 36.7 miles of OHV trail. It closes about 95 additional miles of road for a total of 215 miles.

I thank those who took the time to review and comment on this project. As District Ranger, I am responsible for this decision. Copies of the Access and Travel Management EA and DN/FONSI are available for review at the Ketchikan-Misty Fiords District Office. Please contact Linda Pulliam (907-228-4124) if you have any questions on the Access and Travel Management EA. Your interest in the management of the Tongass National Forest is appreciated.

Sincerely,

LYNN D. KOLUND

District Ranger



Decision Notice and Finding of No Significant Impact

Access and Travel Management Environmental Assessment

USDA Forest Service

Ketchikan-Misty Fjords Ranger District, Tongass National Forest

Ketchikan, Alaska

Decision and Reasons for the Decision

This Decision Notice summarizes the environmental assessment for the Access and Travel Management plan. The Decision Notice explains my decision on the project and the rationale for the decision. It contains findings required by law and information about administrative review of this decision. The environmental assessment is incorporated by reference.

Background

The Department of Agriculture revised regulations in 2005 regarding travel management on National Forest System lands to clarify policy related to motor vehicle use, including the use of off-highway vehicles. The travel management rule requires designation of those roads, trails, and areas that are open to public motor vehicle use. The travel management rule prohibits the use of motor vehicles off the designated system, as well as use of motor vehicles on routes and in areas that are not consistent with the designations (2005 Travel Management Rule (36 CFR 212)). This decision designates roads and trails that are open to public motor vehicles on the Ketchikan-Misty Fjords Ranger District. There are three phases involved with designating roads and trails open for motorized vehicles:

1. The 2006 District Roads Analysis recommended open roads and road closure methods (storage). These recommendations were based on future road needs, travel safety, resource protections, and available funding.
2. The Access and Travel Management (ATM) Environmental Assessment provided project resource analysis and public involvement in recommending open roads. The ATM used the Roads Analysis recommendations as the Proposed Action (Alternative 2) for public scoping. Public involvement resulted in an alternative based on public input describing road use for recreation, sport hunting and fishing, and subsistence use (Alternative 3).
3. A Motorized Vehicle Use Map (MVUM) will be prepared based on this decision. It will be available at the Ranger District and Discovery Center. The MVUM will show the open roads and OHV trails. The MVUM can be updated annually and will be adjusted as conditions change.

Reduced budgets and increasing costs mean that fewer dollars are available for road maintenance (Cole 2007). This decision reduces maintenance costs by closing some roads. At the same time, this decision incorporates road closure (storage) methods that will benefit other resources. For example,

road storage that removes culverts will prevent plugged culverts; which can cause road washouts, add sediments to streams, and affect fish habitat.

The environmental assessment (EA) documents the analysis of two action alternatives to meet this need. Alternative 2 (Proposed Action) is based on the Roads Analysis and Alternative 3 is based on public involvement with the project.

Decision

Based upon my review of all alternatives, I have decided to implement **Alternative 3**, hereafter referred to as the Selected Alternative, which designates about 109 miles of road open to motorized vehicle use and 36.7 miles of OHV trail. The Selected Alternative map (Alternative 3) is located at the end of this document, along with Alternatives 1 and 2.

The Selected Alternative is based on roads the public identified as preferred roads. Nearly all of the roads identified as important to the public for motorized travel would be designated either ML 2 open road or OHV trail. About 95 more miles of road would be closed in addition to the 120 miles that are already closed. This alternative meets the requirements of the 2005 Travel Management Rule by designating open roads and trails through a public process. It reduces road maintenance funds required to maintain a safe road system that provides resource protections.

Other Alternatives Considered

I also considered a No-action Alternative 1, and recommendations from the Roads Analysis (Alternative 2). A comparison of these alternatives can be found in the EA.

Alternative 1 (No Action) serves as the baseline for comparing the action alternatives. Alternative 1 represents the current open/closed road conditions. This alternative would not meet the purpose and need for the project. It would not reduce the road maintenance budget needs. It would not designate open roads and trails identified through a public process.

Alternative 2 would maintain about 100 miles of road open to high-clearance vehicles and OHVs. Roads suitable for passenger vehicles would remain open (Ward Lake and Brown Mountain areas). The Forest Service would close about 135 miles of road to motorized vehicle traffic in addition to about 150 miles that are currently closed.

Public Involvement

The public was involved in two public meetings and a subsistence hearing for this project. Two letters inviting consultation on the project were sent to Ketchikan Indian Community, Organized Village of Saxman, and Metlakatla Indian Community. A presentation on the project was made before the Chamber of Commerce. The Ketchikan Daily News ran display ads inviting public participation and featured two news articles on the project.

Finding of No Significant Impact

After considering the environmental effects described in the EA, I have determined that these actions will not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27). Thus, an environmental impact statement will not be prepared. I base my finding on the following:

1. My finding of no significant environmental effects is not biased by the beneficial effects of the action.
2. There will be no significant effects on public health and safety, because road storage and maintenance activities normally fit the category of routine repair and maintenance of roads that do not individually or cumulatively have a significant effect on the quality of the human environment and may be categorically excluded (FSH 1909.15, 31.12)
3. There will be no significant effects on unique characteristics of the area, because no unique characteristics or ecologically critical areas such as historic or cultural resources are connected to the road systems.
4. The effects on the quality of the human environment are not likely to be highly controversial, because there is no known scientific controversy over the impacts of the project.
5. We have considerable experience with the types of activities to be implemented. The effects analysis shows the effects are not uncertain, and do not involve unique or unknown risk.
6. The action is not likely to establish a precedent for future actions with significant effects, because any future updates will involve the public and consider subsistence access.
7. The cumulative impacts are not significant.
8. The action will have no significant adverse effect on Districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. The action will also not cause loss or destruction of significant scientific, cultural, or historical resources.
9. The action will not adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species act of 1973.
10. The action will not violate Federal, State, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the EA. The action is consistent with the Tongass Land and Resource Management Plan.

Findings Required by Other Laws and Regulations

This decision to implement the Selected Alternative is consistent with the intent of the Forest Plan's long-term goals and objectives. The project was designed in conformance with land and resource management plan standards and incorporates appropriate land and resource management plan guidelines for transportation system maintenance.

ANILCA Section 810, Subsistence Evaluation and Finding

Consistent with Section 810 of ANILCA, the alternatives were evaluated for potential effects on subsistence uses and needs. Based on that evaluation, it was determined that none of the alternatives would result in a significant possibility of a significant restriction on subsistence resources and uses. Abundance and distribution of resources, access to those resources, and competition between rural and non-rural residents were considered in the analysis.

ANILCA Section 811, Access to Subsistence Resources

Consistent with Section 811 of ANILCA, reasonable access to subsistence resources on public lands is maintained. Roads proposed for closure in the Selected Alternative are located at remote MAFs accessible by boat or plane; this traditional means of access to subsistence resources will not be affected by the project. In addition, roads proposed for closure at these remote sites will still be available for use by non-motorized means.

Clean Water Act

Congress intended the Clean Water Act of 1972 (Public Law 92-500), as amended in 1977 (Public Law 95-217) and 1987 (Public Law 100-4), to protect and improve the quality of water resources and maintain their beneficial uses. Section 313 of the Clean Water Act and Executive Order 12088 of January 23, 1987 address federal agency compliance and consistency with water pollution control mandates. Agencies must be consistent with requirements that apply to "any governmental entity" or private person. Compliance is to be in line with "all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution".

The Clean Water Act (Sections 208 and 319) recognized the need for control strategies for nonpoint source pollution. The National Nonpoint Source Policy (December 12, 1984), the Forest Service Nonpoint Strategy (January 29, 1985), and the USDA Nonpoint Source Water Quality Policy (December 5, 1986) provide a protection and improvement emphasis for soil and water resources and water-related beneficial uses. Soil and water conservation practices, in the form of BMPs, were recognized as the primary control mechanisms for nonpoint source pollution on NFS lands. The Environmental Protection Agency supports this perspective in their guidance, "Nonpoint Source Controls and Water Quality Standards".

The Forest Service must apply BMPs that are consistent with the Alaska Forest Resources and Practices Regulations to achieve Alaska Water Quality Standards. The site-specific application of BMPs, with a monitoring and feedback mechanism, is the approved strategy for controlling nonpoint source pollution as defined by Alaska's Nonpoint Source Pollution Control Strategy (October 2000). In 1997, the State approved the BMPs in the Forest Service's Soil and Water Conservation Handbook (FSH Handbook 2509.22, October 1996) as consistent with the Alaska Forest Resources and Practices Regulations. This Handbook is incorporated into the Forest Plan.

A discharge of dredge or fill material from normal road maintenance is exempt from Section 404 permitting requirements in waters of the United States, including wetlands (404(f)(1)(A)). Forest roads qualify for this exemption only if they are constructed and maintained in accordance with BMPs to assure that flow and circulation patterns and chemical and biological characteristics of the

waters are not impaired (404)(f)(1)(E). The BMPs that must be followed are specified in 33 CFR 323.4(a). These specific BMPs have been incorporated into the Forest Service's Soil and Water Conservation Handbook under BMP 12.5.

Clean Air Act

Emissions from the implementation of the Selected Alternative will be of short duration and are not expected to exceed State of Alaska ambient air quality standards (18 AAC 50).

Coastal Zone Management Act of 1972, as Amended

Under the Coastal Zone Management Act (CZMA), federal agency activities within the coastal zone must be consistent with the Alaska Coastal Management Program (ACMP). This is a federal agency activity as defined in 15 CFR 930.51(a). Actions authorized by this decision may occur inside the coastal zone as described by the State of Alaska in Coastal Zone Boundaries of Alaska, published in June 1988. This project will not result in negative effects to resources of the coastal zone, and this project falls under the category of "Forest Service Activities that Do Not Normally Require A Consistency Determination" by the State of Alaska (MOU Sec. 202c)

Essential Fish Habitat

All fish stream crossings on proposed closed roads will be removed, in concordance with the Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation Management Act, eliminating the potential for "red pipes" or streams impeding fish passage.

Endangered Species Act of 1973

No federally listed threatened or endangered species will be affected by this decision.

National Historic Preservation Act of 1966

This project was reviewed by a qualified archeologist who determined that no known cultural resources would be affected. According to the provisions of the Programmatic Agreement between Region 10 Forest Service, the Alaska State Historic Preservation Officer (SHPO) and the Advisory Council, the assessment by the District archeologist that this project will have No Effect on Historic Properties completes the Section 106 consultation process.

Federal and State Permits, Licenses, and Certifications

No permits, licenses, or certifications were required for this project.

Implementation Date

If no appeals are filed within the 45-day time period, the decision may be implemented 5 business days after the appeal filing period. When appeals are filed, implementation may occur on, but not before, the 15th business day following the date of the last appeal disposition.

Administrative Review or Appeal Opportunities

This decision is subject to administrative review (appeal) pursuant to 36 CFR Part 215. Individuals or non-federal organizations who submitted written comments or otherwise express interest in this particular action during the comment period specified at 215.6 have standing to appeal this decision. The notice of appeal must be in writing, and meet the appeal content requirements at 36 CFR 215.14. The appeal must be filed (regular mail, fax, email, hand-delivery, or express delivery) with the Appeal Deciding Officer:

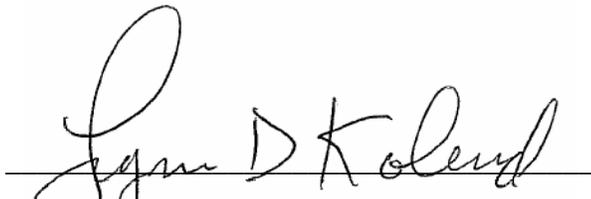
Forrest Cole, Forest Supervisor
USDA Forest Service, Tongass National Forest, Federal Building
648 Mission Street
Ketchikan, AK 99901
Fax: 907-228-6125

The office business hours for those submitting hand-delivered appeals are: 8:00 am to 4:30 pm Monday through Friday, excluding holidays. Electronic appeals must be submitted to comments-alaska-tongass-ketchikan-mistyfiord@fs.fed.us Subject: ATM EA. In cases where no identifiable name is attached to an electronic message, a verification of identity will be required. A scanned signature is one way to provide verification.

Appeals, including attachments, must be filed within 45 days from the publication date of legal notice of this decision in the *Ketchikan Daily News*, the newspaper of record. Attachments received after the 45-day appeal period will not be considered. The publication date in the *Ketchikan Daily News* is the exclusive means for calculating the time to file an appeal. Those wishing to appeal this decision should not rely upon dates or timeframe information provided by any other source.

Contact

For additional information, contact Linda Pulliam, NEPA Coordinator, 907-228-4124.



LYNN D. KOLUND
District Ranger
Ketchikan-Misty Fiords Ranger District

7/11/2008
Date

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Access and Travel Management Environmental Assessment

Purpose and Need

Project Area Description

The Ketchikan-Misty Fiords Ranger District (District) is a series of islands with mainland connections to Canada on the east by Misty Fiords National Monument and Cleveland Peninsula. Travel on the District is by boat or floatplane to remote road systems because there are no connecting road systems.

Three islands have District roads. Hassler Island has one remote logging road system, which was contracted for closure in 2006. Gravina Island has 3 miles of road that are connected to Vallenar Bay. This road was constructed for timber harvest about 45 years ago and has long since grown over. Revillagigedo (Revilla) Island has 11 remote logging road systems and the only paved road system, which is connected to the towns of Ketchikan and Saxman. There are no road closures proposed for the Ward Lake or Brown Mountain road systems.

Most of the discussion in this document will center on the 11 remote Revilla Island road systems connected to marine access facilities (MAFs), which account for 336 of the 360 miles of road on the District. Two other areas without marine access facilities are considered: Ketchikan area (Ward Lake/Brown Mountain) and Vallenar Bay. The public identified using these roads for walking and for off-highway vehicle (OHV) travel by ATV and motorcycle. Road systems were constructed for timber harvest and radiate from marine access facilities.

Purpose and Need for an Access Travel Management (ATM) Plan

The District needs to implement the 2005 Travel Management Rule (36 CFR 212). The Department of Agriculture revised regulations regarding travel management on National Forest System lands to clarify policy related to motor vehicle use, including the use of off-highway vehicles. The travel management rule requires designation of those roads, trails, and areas that are open to public motor vehicle use. It prohibits the use of motor vehicles off the designated system, as well as use of motor vehicles on routes and in areas that is not consistent with the designations. The decision on this environmental assessment will designate roads and trails that are open to public motor vehicles.

The Forest needs to reduce the miles of road maintained on the Ranger District. Reduced budgets and increasing costs mean that less funding is available for road maintenance (Cole 2007). The decision on this environmental assessment will reduce maintenance costs by closing some roads. The storage methods for closing roads will benefit some streams and fisheries by removing culverts that may become blocked and cause road erosion. Some stream crossings will be blocked to prevent degradation of stream banks by motorized vehicle crossings.

An ATM is needed to support the goals and objectives of travel management and road maintenance. The analysis process will identify the minimal road system required for forest management of public motorized use. These objectives will include changing maintenance levels for some roads to reduce maintenance costs and identifying roads that could allow motorized use by OHVs. The Brown

Mountain road will remain open for OHV use if a mixed use study indicates that OHV and other motorized vehicles can safely use the same road. The mixed use study will involve a technical evaluation of the road and recommendations about OHV use. The decision on road use in this environmental assessment will be reflected on a Motor Vehicle Use Map (MVUM) and documented in road management objectives (RMOs). The current Forest Service OHV policy of “open unless designated closed” will continue until an MVUM is produced. The MVUM will identify the open roads and OHV trails. Other roads will be closed to motorized travel.

There are numerous considerations for determining which roads should remain open: public access for recreation, private land access, access to special use authorizations such as public utilities, road safety, resource protection, planned projects, subsistence uses and access, hunting, and gathering.

Objectives of this project are to:

- Identify a sustainable, safe, and efficient road system to maintain for Forest Service projects, access to private lands, public utilities, public access to recreation, sport, and subsistence areas.
- Identify the roads open to high-clearance and off-highway vehicle (OHV) use.
- Provide roads that meet future road funding objectives and resource and management needs.

Maintenance Levels (ML)

The five levels of maintenance for roads are listed below. The Tongass National Forest travel plan identified maintenance level (ML) 3, 4, and 5 roads that will be maintained. These are the most high-traffic roads such as the Ward Lake road system. This analysis will be concerned with maintenance level 1 and 2 roads. Most of these roads were constructed to access timber harvest projects. They are grouped in isolated systems; each system radiates from a marine access facility. Motorized vehicles are transported to the road systems by boat or barge. Most motorized access is by ATV or motorcycle since marine transport of full-size vehicles is costly.

ML 1 – Closed - Assigned to intermittent service roads during the time they are closed to vehicle traffic. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic.

ML 2 – Mixed Use - Assigned to roads open for use by high-clearance vehicles and OHVs. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one use or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level.

ML 3, 4, 5 – Passenger Vehicles - These roads are closed to OHVs.

ML 3 - Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material.

ML 4 - Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated.

ML 5 - Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated.

Decision Framework

The Ketchikan-Misty Fiords District Ranger will review the alternatives considered, public comments, and resource analysis to determine how the road systems will be managed to meet public needs, budget levels, safety and resource concerns, and Forest Plan objectives. The decision may include changes to maintenance levels, road closures, and designation of OHV trails. The District Ranger will also publish a determination of the significance of the project effects.

Issues and Concerns

The primary public concern is the loss of OHV and hiking access that road closures might impose. This concern is addressed by Alternative 3. Members of the public marked the areas they use on maps at a January 24, 2008 public meeting. Scoping comments were added to the map. The resource specialists then reviewed public input and identified any areas that would be precluded because of resource concerns or planned management activities. Finally, the recreation department reviewed the maps and identified potential OHV trails that were feasible to maintain. This input became Alternative 3. It was presented to the public at an April 10, 2008 public meeting.

Alternatives Considered

The travel management rule requires designation of those roads, trails, and areas that are open to public motor vehicle use. The ATM considers access for recreation, sport, and subsistence uses. It identifies the storage methods for closed roads that best meet resource improvements. It reduces the miles of road that are maintained annually. There are three phases involved with designating roads and trails open for motorized vehicles:

- The 2006 District Roads Analysis recommended open roads and road closure methods (storage). These recommendations were based on future road needs, travel safety, resource protections, and available funding.
- This Access and Travel Management (ATM) Environmental Assessment provides project resource analysis and public involvement in recommending open roads. The ATM used the Roads Analysis recommendations as the Proposed Action (Alternative 2). The ATM received extensive public input. This resulted in Alternative 3 (the Preferred Alternative). Alternative 1 (No Action) is required for analysis and serves as a baseline for comparing the alternatives.
- A Motorized Vehicle Use Map (MVUM) will be prepared based on the decision for this project. The MVUM will be available at the Ranger District and Discovery Center. It will show the open roads and OHV trails. The MVUM can be updated annually and will be adjusted as conditions change.

Alternative 1 (No Action)

Alternative 1 (No Action) serves as the baseline for comparing the action alternatives. Alternative 1 represents the current open/closed road conditions. This alternative would not meet the purpose and need for the project. It would not reduce the road maintenance budget needs.

Table 1
Alternative 1 Road Miles by Marine Access Facility (MAF) and Area by Maintenance Level (ML)

MAF	ML 1 closed	ML 2 mixed use	ML 3 passenger	ML 4 passenger	OHV Trail	Totals
Bluff	6.0	1.4				7.4
Brown Mtn	1.2	4.3	1.0			6.5
Elf Point	4.6	6.0				10.6
Fire Cove	18.4	24.6	2.9			45.8
Hassler	10.4					10.4
Klu	11.6					11.6
Ketchikan	1.9	0.6	0.1	2.4		5.1
Margaret	19.6	34.7				54.3
Shelter	3.0	39.2	9.4			51.6
Shoal	23.0	71.6				94.6
Shrimp	9.9	12.0				21.9
SW Neets	2.2	14.9				17.1
Upper Carroll	5.6	15.3				20.8
Vallenar	3.0					3.0
Grand Total	120.4	224.5	13.4	2.4		360.7

Alternative 2 (Proposed Action)

Alternative 2 is based on recommendations from the 2007 Roads Analysis Process completed by a team of District resource specialists. This alternative was used to initiate public comment on the project. It was the focus of a scoping letter and public meeting in January 2008.

Alternative 2 would maintain about 101.5 miles of road open to high-clearance vehicles and OHVs. The 4.2 miles of road suitable for passenger vehicles would remain open in the Ward Lake and Brown Mountain areas. The Forest Service would close about 135 miles of road to motorized vehicle traffic in addition to about 120 miles that are currently closed. Closing roads (storage) can include installing water bars, cleaning ditches, removing culverts and bridges, and storm-proofing roads, depending on road conditions and the level of storage required to protect other resources. Closed roads are suitable for bicycle and foot travel.

Table 2
Alternative 2 Road Miles by Marine Access Facility (MAF) and Area by Maintenance Level (ML)

MAF	ML 1 closed	ML 2 mixed use	ML 3 passenger	ML 4 passenger	OHV Trail	Total
Bluff	7.4					7.4
Brown Mtn	1.2	4.3	1.0			6.5
Elf Pt	10.6					10.6
Fire Cove	36.1	9.7				45.8
Hassler	10.4					10.4
Klu	11.6					11.6
Ketchikan	1.9		1.1	2.0		5.1
Margaret	40.1	14.2				54.3
Shelter	26.0	25.6				51.7
Shoal	57.9	36.7				94.6
Shrimp	10.9	10.9				21.9
SW Neets	17.1					17.1
Upper Carroll	20.8					20.8
Vallenar	3.0					3.0
Grand Total	255.0	101.5	2.2	2.0		360.7

Alternative 3 (Preferred Alternative)

Alternative 3 is based on ML1 and 2 roads the public identified as roads used for recreation and sport hunting and fishing. It would maintain 104.5 miles of ML 2 road, 4.2 miles of ML 3 and ML 4 road, and 36.7 miles of OHV trail. Nearly all of the roads identified by the public as important for OHV travel and walking would be designated either ML 2 road or OHV trail. The Forest Service would close about 95 miles of road to motorized vehicle traffic in addition to about 120 miles that are currently closed.

Table 3
Alternative 3 Road Miles by Marine Access Facility (MAF) and Area by Maintenance Level (ML)

MAF	ML 1 closed	ML 2 mixed use	ML 3 passenger	ML 4 passenger	OHV Trail	Total
Bluff	7.4					7.4
Brown Mtn	1.2	4.3	1.0			6.5
Elf Pt	5.7				4.9	10.6
Fire Cove	33.4	9.7			2.7	45.8
Hassler	10.4					10.4
Klu	11.6					11.6
Ketchikan	1.9		1.1	2.0		5.1
Margaret	31.5	14.2			8.5	54.3
Shelter	21.5	25.6			4.6	51.7
Shoal	53.5	32.2			9.0	94.6
Shrimp	10.9	10.9				21.9
SW Neets	10.1				7.0	17.1
Upper Carroll	13.3	7.5				20.8
Vallenar	3.0					3.0
Grand Total	215.3	104.5	2.2	2.0	36.7	360.7

Analysis of Alternatives

Aquatic Resources

The aquatic resources addressed in this section include: watersheds, particularly water quality, and fisheries. Additional information regarding the existing aquatic resources in the project area is in the Fisheries and Watersheds Resource Report (FWRP) for this environmental assessment (EA). The Road Condition Survey (RCS) data record a variety of problems that occur on roads, such as erosion or sedimentation, water flow, plugged or damaged drainage structures, fish barriers and mass failures; provide information on where they exist; and help prioritize repair. Additionally, information regarding the water and vegetation resources in the project area was obtained from the United States Forest Service (USFS) Geographical Information System (GIS) library (stream and riparian management area layers). These stream data were compiled by USFS fish and watershed specialists who identified the locations and classes of streams in the project area using a combination of aerial photo interpretation and field visits. The GIS and RCS data, along with specialist reports written for the project area, are the principle basis for the aquatic resources and fisheries analyses in this environmental assessment.

Stream types in the project area were classified by the process groups in the Alaska Region Channel Type Classification System (USFS, 1992). The system includes nine basic fluvial process groups that describe the interrelationships among watershed runoff, landform relief, ecology, geology, and glacial or tidal influences on fluvial erosion and depositional processes.

Water Quality

Affected Environment

There are 45 watersheds in the project area. A watershed is the area of land that catches rain and snow and drains seeps into a marsh, stream, river, lake, or groundwater. Watersheds are delineated by United States Geological Survey (USGS) using a nationwide system based on hydrologic features. Watershed boundaries for the EA were developed from the Ketchikan-Misty Fiords Ranger District GIS layer based on Hydrologic Unit Code (HUC) sixth-level watersheds. However, for the purpose of this analysis, watersheds that did not have any federal land ownership, such as Annette Island, or did not have any roads were not included in further analyses. A table presenting the current road mileage, road density, and stream density by watershed is provided in the Fisheries and Watersheds Resource Report completed for this EA.

The majority of the Ketchikan-Misty Fiords Ranger District road system does not connect to the main community road system. Thus, the Access Travel Management (ATM) interdisciplinary team evaluated and identified the different alternatives by marine access facility (MAF). For the purpose and consistency of the EA, the effects are analyzed by MAF. However, analyzed data by watershed is available in the Fisheries and Watersheds Resource Report.

Roads affect streams directly by accelerating erosion and sediment loadings, by altering channel morphology, and by changing the runoff characteristics of watersheds. Roads also intercept overland flow leading to flow concentration and possible increases in streams potential to transport sediment in road structures such as culverts, ditches and drainage structures not designed to handle higher discharges. These sediments will likely be present in higher concentrations in watersheds

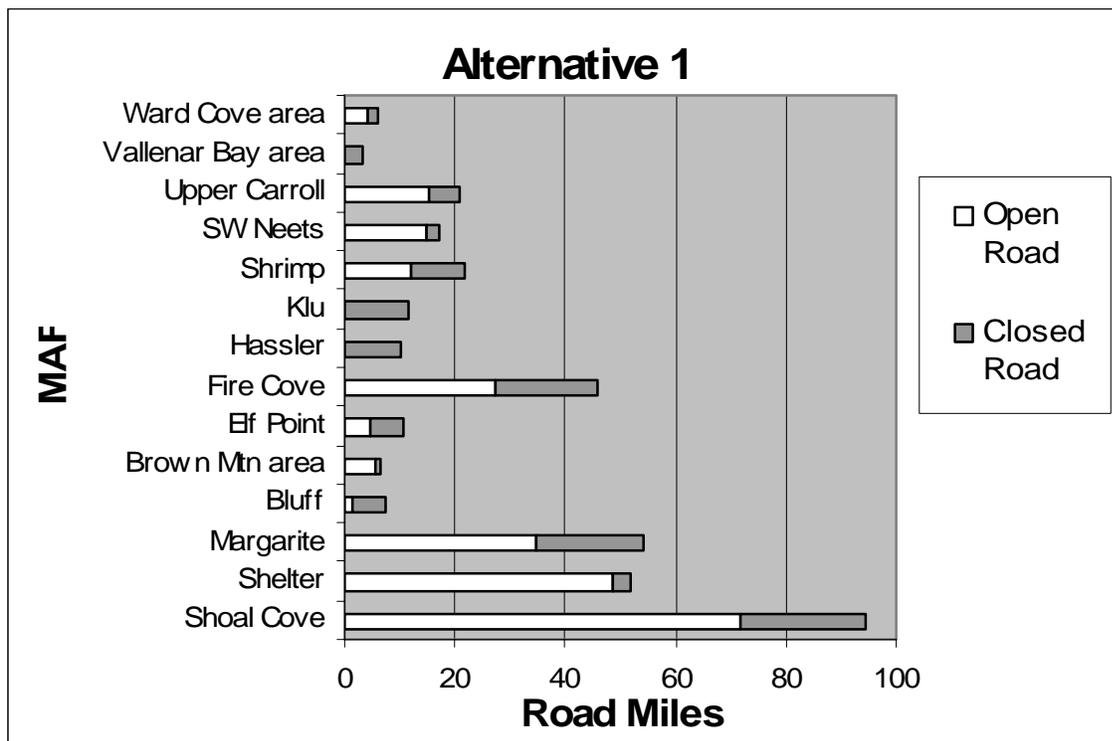
with higher stream densities. Road-stream crossings can influence stream channels and water quality by contributing coarse and fine sediment and chemical pollutants to streams, and by changing natural stream flow patterns and channel formation. Road crossing structures also pose an increased risk for landslides and sediment contribution if they are not regularly maintained.

Road crossings can be barriers to fish migration, usually because of outfall barriers, excessive velocities, insufficient water depth in culverts, disorienting turbulent flow patterns, lack of resting pools below culverts, or a combination of these conditions (Furniss et al., 1991). Roads also have substantial effects on wetlands, riparian management areas and floodplains. Roads in these sensitive areas can modify surface and subsurface hydrology, which subsequently changes wetland moisture regimes and can directly affect vegetation species and growth. Sedimentation from road construction and use can affect water quality, ecosystem productivity, aquatic species habitat, natural run off and flooding, groundwater recharge and discharge, and species diversity.

Environmental Consequences

The analysis for this water quality section focuses on measurement indicators that will change under each of the alternatives. While the number of road miles in riparian areas and floodplains is important to water quality, there is little change in these numbers between the alternatives. This analysis focuses on changes in open road miles, number of stream crossings and the number of structures present (potential for failure) on high-risk mass movement locations. Figure 1 presents changes in the number of open road miles and Figure 2 the number of stream crossings, and structures on high-risk soils by MAF for each action alternative. Refer to the Soils Resource Section for a detailed description and definition of the high-risk soils.

Figure 1
Changes in Number of Open Road Miles by MAF Under Each of the Action Alternatives.



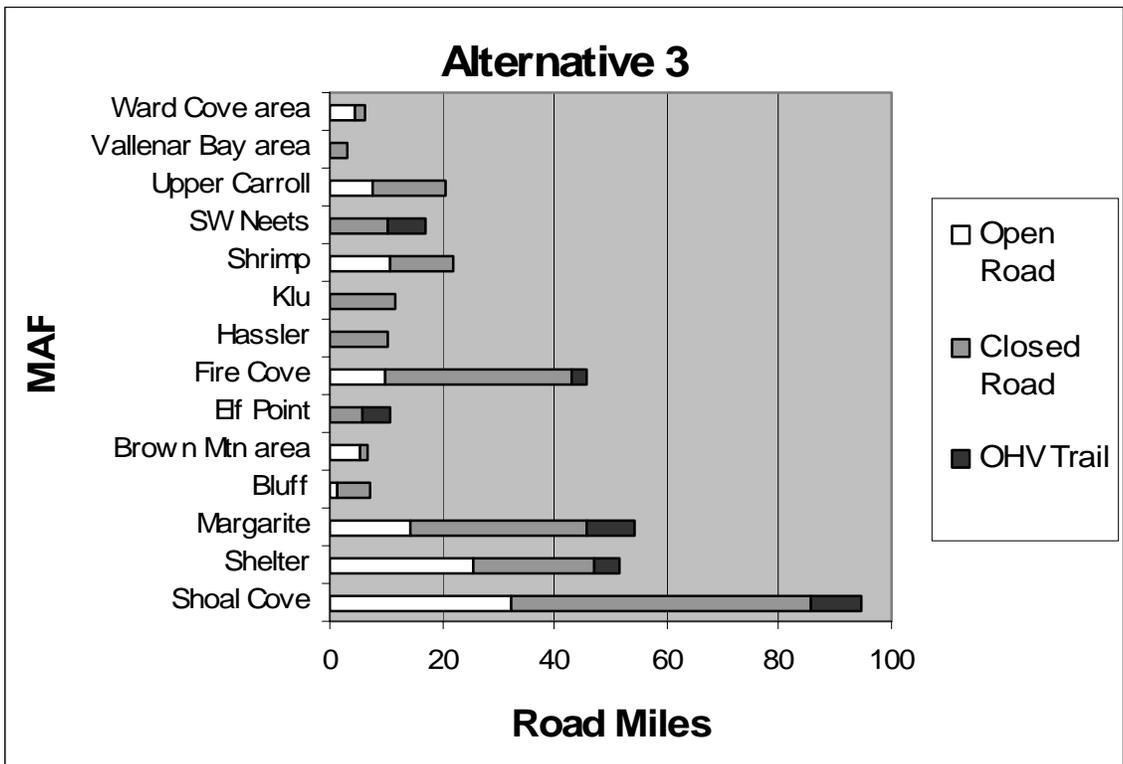
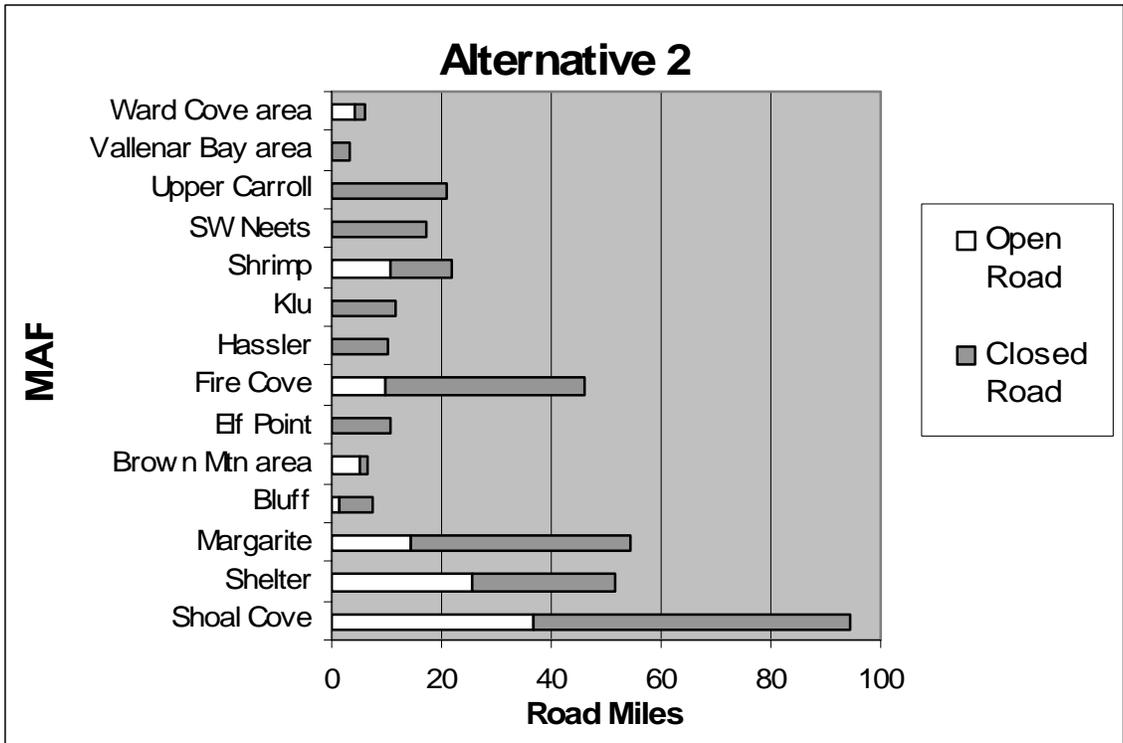
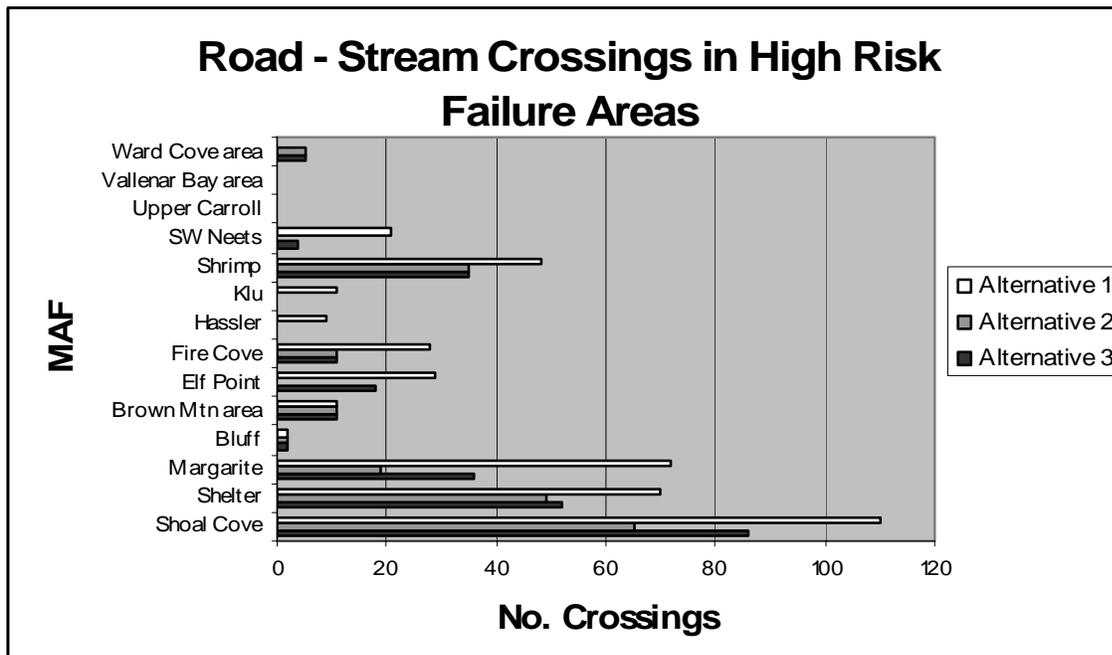
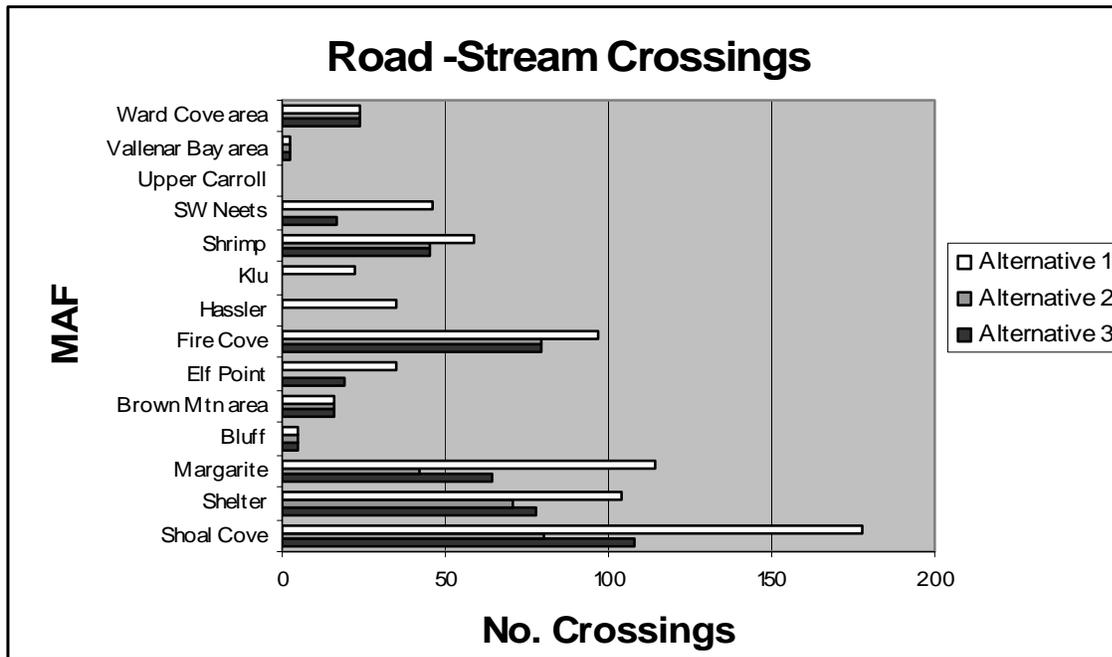


Figure 2

Changes in Road-Stream Crossings and Road-Stream Crossings on High Risk Failure Areas by Marine Access Facility (MAF) for Each of the Action Alternatives



Direct and Indirect Effects

Alternatives 1 and 2 would increase the miles of closed road. Road closures would generally improve water quality by reducing ongoing sources of sediment input and potential for slope or road bed failure. Roads would be stored by removing culverts and constructing adequate waterbars/rolling dips to restore hillslope natural drainage patterns and hillslope hydrology.

The Clean Water Act, as amended in 1977, recognized the need for control strategies for nonpoint source pollution. Soil and water conservation best management practices (BMPs) were recognized as the primary control mechanisms for nonpoint source pollution on National Forest System lands. Following BMPs while doing road activities would improve the current condition and comply with Alaska Water Quality Standards as directed by the Clean Water Act.

Alternative 1

Under Alternative 1, the No-action Alternative, there would be no changes to the road system. Under this alternative, 224.5 miles of road would remain open to motorized vehicles and nearly 120.4 miles would remain closed to all motorized travel. Effects from existing roads related to water quality would continue at current levels. Declining road maintenance funding could increase road degradation because few miles of road would be maintained each year. Orphaned roads would likely fill in with vegetation over the next few years. Assuming no erosion control measures (i.e., culvert removal or water bar installation) are applied after road maintenance stops, both surface erosion and mass wasting would increase as ditches fill with sediment and/or plant material and the road fill settles. Surface runoff from the road and cutslopes combined with the intercepted subsurface water would likely saturate the fill and side slope casts leading to conditions that often trigger debris avalanches and water quality degradation (Zander, 1993).

Alternative 2

Under Alternative 2, the Proposed Action, 101.5 miles of road would remain open and be maintained for motorized vehicles, and 255 miles of road would be closed to all motorized travel. Closed and stormproofed roads would improve water quality by reducing the erosion and sedimentation to streams and restoring hillslope hydrology, particularly in high-risk landslide prone areas. Under this alternative there would be fewer road-stream crossings and road maintenance funds would be focused on fewer road miles and stream crossings. Thus, the road-stream crossings still in place would be more adequately maintained.

Alternative 3

Under Action Alternative 3, 104.5 miles of road would remain open and be maintained for motorized vehicles, about 215 miles of road would be closed, and an additional 36.7 miles of road would be left open as trails for OHV use. Closed and stormproofed roads would improve water quality by reducing the erosion and sedimentation to streams and restoring hillslope hydrology, particularly in high-risk landslide prone areas. Under this alternative there would be fewer road-stream crossings than the No-action Alternative and road maintenance funds would be focused on fewer road miles and stream crossings. Thus, the open road-stream crossings still in place would be more adequately maintained.

Fisheries

Affected Environment

The State of Alaska has designated one of several beneficial uses of fresh and marine waters as the growth and propagation of fish and shellfish (18 AAC 70). The Forest Service must maintain these uses, protect riparian habitat, and prevent detrimental changes in water temperatures, water chemistry, stream channel stability, and sediment loads that adversely affect these uses. Streams in the project area provide spawning and rearing habitats for coho (*Onchorynchus kisutch*), chum (*O. keta*), pink (*O. gorbushca*), and sockeye (*O. nerka*) salmon; steelhead and rainbow trout (*O. mykiss*); cutthroat trout (*O. clarki*); and Dolly Varden char (*Salvelinus malma*).

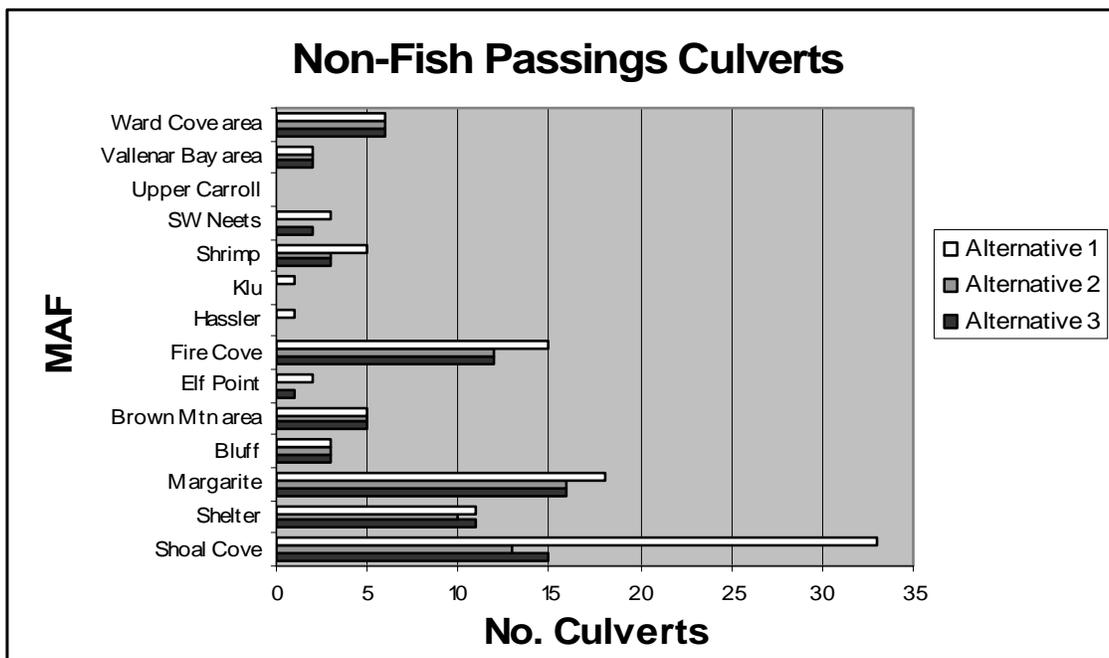
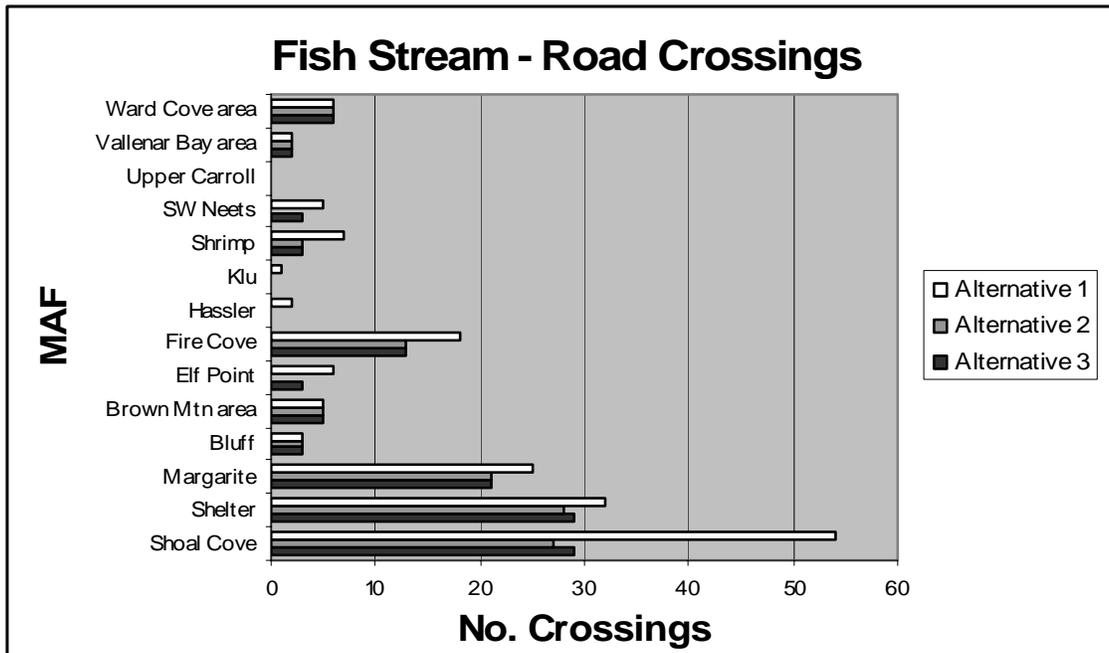
Streams are categorized according to the following fish stream value classification system (USFS, 2008):

1. Class I: Streams and lakes with anadromous or adfluvial fish habitat; or high quality resident fish waters listed in FSH 2609.24; or habitat above fish migration barriers known to be reasonable enhancement opportunities for anadromous fish.
2. Class II: Streams and lakes with resident fish populations and generally steep (6-15 percent) gradient (can also include streams 0-6 percent gradient) where no anadromous fish occur, and otherwise not meeting Class I criteria. These populations have limited fisheries values and generally occur upstream of migration barriers or have other habitat features that preclude anadromous fish use.
3. Class III: Perennial and intermittent streams with no fish populations but which have sufficient flow, or transport sufficient sediment and debris, to have an immediate influence on downstream water quality or fish habitat capacity.
4. Class IV: Other intermittent, ephemeral, and small perennial channels with insufficient flow or sediment transport capacity to directly influence downstream water quality or fish habitat capability.

There are approximately 1,848 total miles of Class I, II, III and IV streams in the project area; 432 miles are Class I and 389 miles are Class II. These low-gradient streams contain the highest-quality fish habitat and are the most sensitive to sediment deposition.

With regard to fisheries, the Road Condition Surveys (RCS) database provides information for: 1) problems analysis and 2) priority setting for work and scheduling funding. The RCS data record a variety of problems that can occur on roads, and for fisheries the problem is often culverts, known as “red pipes,” that hinder or obstruct passage of aquatic species. Impediments to fish passage are compliance issues with the Clean Water Act regulations and Forest Plan Guidelines. RCS data identified 105 fish passages in the project area that do not meet the Tongass Land Management Plan standards for fish passage. Figure 3 presents the changes in the number of non-fish passing culverts and fish stream crossings with culverts by MAF under each alternative. The Fisheries and Watersheds Resource Report completed for this EA provides a table with locations of the non-fish passing culverts. The Forest Plan directs managers to “maintain, improve, and restore opportunities for fish migration” in Class I and Class II streams.

Figure 3
 Changes in the Number of Fish Stream-Road Crossings and Non-fish Passing Culverts by MAF Under Each of the Action Alternatives



Management Indicator Fish Species

NFMA regulations direct the use of Management Indicator Species (MIS) in forest planning to help display the effects of forest management on fish and wildlife. MIS are species whose population changes indicate the effects of land management activities. Using MIS reduces the total number of species to a manageable set of species that represent the complex of habitats, species, and associated management concerns (USFS 2008).

MIS fish species on the Tongass National Forest include pink and coho salmon, cutthroat trout, and Dolly Varden char. These species are MIS due to their commercial and recreation importance, their reliance on fresh water habitat for spawning and egg incubation, and their need for 1 year or more of pre-smolt rearing (coho and Dolly Varden). The MIS report describes the range and habitat for these species.

Threatened, Endangered, and Sensitive Fish Species

Projects are to reviewed to determine how the Proposed Action would affect any threatened, endangered, proposed, or sensitive (TEPS) species. The effects analysis is required to address any direct, indirect, and cumulative effects of an action on Federal TEPS species or their critical habitat (50 code of Federal Regulation [CFR] 402.02) and on sensitive species or their habitat (Forest Service Manual [FSM] 2672.42). In addition, the Forest Service has established direction and policy in FSM 2670 to guide TEPS species habitat management.

Forest Service Sensitive Species include populations of Fish Creek chum salmon (*O. keta*), Island king (chinook) salmon (*O. tshawytscha*) and northern pike (*Esox lucius*). Island king and Fish Creek chum salmon of these populations are found on the Ketchikan-Misty Fiords Ranger District, but are not found in the project area. No Federal- or State- listed or proposed threatened and endangered (T&E) fish species occur on the District (USFWS 2005a, USFWS 2006, ADFG 2006a), nor do any federal candidate species (USFWS 2005b). No State species of special concern occur on the District (ADFG 2006b, c, Raitenan 2007).

Environmental Consequences

Roads can affect fish habitats in several ways. Freshwater and marine habitats can be affected by sedimentation, changes in stream dynamics, and introduction of road-related pollutants into the water courses.

Fish migration barriers related to roads, water quality impairments from road construction, vehicle traffic, vegetation removal, and water quality changes from road-stream crossings can alter habitats for aquatic species (Furniss et al., 1991). Large woody debris (LWD) and sediment can be trapped by road crossings, restricting its movement downstream and affecting habitats. LWD is important for habitat complexity and diversity in streams, such as pool formation, sediment storage, flow dissipation, nutrient production and cover. Culverts and road-stream crossings can also affect the ability of aquatic species to migrate in the streams. Increasing numbers of culverts have been correlated with decreasing fish densities (Eaglin and Hubert, 1993).

Research has shown that high erosion results and fine sediment deposition into streams can result in declines in spawning habitat (Furniss et. al. 1991). Macroinvertebrate populations, the primary food source of juvenile fish, also decline when large amounts of sediment are present (Furniss et. al. 1991). Roads also increase the potential for slope failure, which can increase sedimentation of aquatic systems, adversely affecting aquatic communities. Sediment entering stream channels can clog streambed gravels, reducing oxygen concentrations critical to incubating eggs, young fish, and macroinvertebrates; fill deep pools; and change channel shape and form.

Road-derived pollutants are likely to increase and decrease in conjunction with the level of motorized access, the distance of the stream from the road, and the amount of traffic on the road. Improved motorized access may also increase the risk of over-harvest of fish by anglers (USFS, 2008). The extent of open roads in the project area under each alternative are presented in Figure 1.

The most substantial direct impacts of roads on fish species is through the presence of “red pipes”, which can prevent migration of fish. Cutthroat trout are the highest risk because they occupy smaller headwater streams during parts of their lives (USDA, 2008). The RCS data base was used to

prioritize fish passage problems on the District. On-going programs to replace non-fish passing pipes would continue under all alternatives.

Despite the fact that all of the alternatives leave the potential for red pipes, Alternatives 2 and 3 would reduce the number of red pipes by closing additional miles of road. Road closures involving stabilization and hillslope hydrology restoration/connectivity restore roads to a more natural state. During road closure, road drainage structures are removed and stream channels opened to restore hillslope hydrologic connectivity and fish passage. These roads would not have the potential to contain non-fish passing pipes, and therefore would improve fish habitat.

Alternative 1

There would be no changes to the current road system under Alternative 1, the No-action Alternative. Effects from existing roads would continue at near current levels and or degrade (Zander, 1993). Fisheries and Essential Fish Habitat (EFH) on the District would continue to be affected by fish migration barriers related to roads, water quality impairments from road construction, vehicle traffic, vegetation removal, and water quantity changes from road-stream crossings. There would be no change in the number of road-fish stream crossings or non-fish passing culverts present. There would be no change in the access to sport fishing or the potential for chemical pollutant introduction to the stream systems.

Alternative 2

Under Alternative 2, the Proposed Action, 101.5 miles of road would remain open and be maintained for mixed motorized use and 255 miles of road would be closed to all motorized travel. Road closures would improve water quality by reducing erosion and sedimentation to streams and restoring hillslope hydrology, particularly in high-risk landslide prone areas. There would be fewer road-stream crossings and road maintenance funds would be focused on maintaining fewer miles and crossings. Remaining road-stream crossings would be more adequately maintained. The number of road-fish stream crossings and non-fish passing culverts would decrease. All fish stream crossings on proposed closed roads would be removed, in concordance with the Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation Management Act, eliminating the potential for red pipes or streams impeding fish passage. This alternative would have beneficial effects to both the aquatic and fisheries resources in the project area.

Alternative 3

Under Action Alternative 3, 104.5 miles of road would remain open and be maintained for mixed motorized use, about 215 miles of road would be closed, and an additional 36.7 miles of road would be left open as trails for OHV use. Under this alternative, road storage would improve water quality by reducing the erosion and sedimentation to streams and restoring hillslope hydrology.

The road-stream crossings and the number of non-fish passing culverts would decrease and improve water quality in comparison to the No-action Alternative. All fish stream crossings on proposed closed roads would be removed, in concordance with the Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation Management Act, eliminating the potential for red pipes or streams impeding fish passage.

Cumulative Effects to Aquatics

There are no cumulative effects for this resource.

Botany

The botany analysis area includes the entire District. The law and policy direction for the Forest Service concerning special interest plant management includes the following:

The National Forest Management Act of 1976 (NFMA) states that forest planning must “provide for the diversity of plant and animal communities based on the suitability and capability of the specific land area” (USDA 1976).

USDA Departmental Regulations 9500-004 state that the National Forest will provide habitats for all existing native and desired non-native plants, fish and wildlife species to maintain at least a viable population of such species (USDA, 1983).

36 CFR 219.19 (2000) “For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area.”

Tongass Land Management Plan states that planning must “Avoid, minimize, or mitigate adverse affects to rare plants and populations during project planning to maintain known distributions throughout the Tongass National Forest” (USDA, 2008).

Affected Environment

General Vegetation

Habitat on the District is characterized by mature forest dominated by spruce, hemlock, and cedar that supports many old-growth associated wildlife species. Most of the road systems are isolated and only accessible by aircraft or boat, and consequently use of these remote areas is primarily limited to bicycles, OHVs (motorcycles and ATVs), and pedestrians. Most motorized vehicle traffic occurs on road systems near Ketchikan, which are linked to the Alaska State road system.

Vegetation on the District is part of the cool, temperate rain forest that extends along the Pacific coast from Northern California to Cook Inlet in Alaska. Most of the forest is composed of old-growth conifers, primarily western hemlock and Sitka spruce, with a scattering of mountain hemlock, western redcedar and Alaska yellow-cedar. Red alder is common along streams, beach fringes, and on soils recently disturbed by management activities and landslides. Black cottonwood grows on the floodplains of major rivers and recently deglaciated areas.

Blueberry, huckleberry, Sitka alder, devil’s club, and salal are common shrubs in the Forest. The forest floor is composed of plants, such as deerheart, dogwood, single delight, and skunk cabbage. Because of the high rainfall and resulting high humidity, mosses grow in great profusion on the ground, on fallen logs, on the lower branches of trees, and in forest openings.

Grass-sedge meadows usually lie at low elevations, often along the coast. Stands of willows border many of the stream channels. Muskeg (bog plant) communities, dominated by sphagnum mosses and sedges, occur throughout the forest.

The alpine zone usually lies above 2,500 to 3,000 feet. It occupies the area above the coastal forest and is separated from the forest by a subalpine or transition zone. Resident plants have adapted to snowpack and wind abrasion by evolving low-growth forms. Low, mat-forming vegetation covers

most of the area, with cushionlike plants occupying crevices on exposed rock outcrops and talus slopes.

Sensitive Plants

As required by Federal regulations (50 CFR 402.14, FSM 2671.44), the direct, indirect, and cumulative effects of the Proposed Action and alternatives on sensitive plant species and critical habitat are evaluated in the companion document Biological Evaluation for Botanical Resources, Ketchikan ATM (Heutte 2008). Nineteen vascular plant species are designated by the Regional Forester as sensitive in the Alaska Region (USDA Forest Service 2002) (Appendix A). Five of these species occur and two potentially occur on the Ketchikan-Misty Fjords Ranger District (USDA Forest Service, 2005). No surveys for sensitive plants were conducted specific to this project because roads would have been surveyed during past environmental analysis. Therefore, a risk assessment for species suspected or known in the project area was developed. The determination of effects for all sensitive species known or suspected in the area was "may impact individuals but not likely to cause a trend to federal listing or loss of viability"

More information about threatened, endangered, proposed, and sensitive plant species is contained in the biological evaluation.

Special Interest Plants

A special interest plant on the Tongass National Forest is defined as a rare plant species that:

- is on the Alaska Natural Heritage Program (ANHP) Rare Vascular Plant Tracking List, is known or suspected to occur on the Tongass (ANHP, 2007), is considered S1 and S2 in State ranking (some S3 are considered), and is not yet on the sensitive plant list for the Tongass.
- is proposed upon consultation and agreement among Tongass ecologists, District botanists, and the Region 10 botanist because of rarity on the Tongass (i.e., plants with range edges or disjunct populations on the Tongass but not yet given a state ranking on the ANHP list).
- has population viability concerns on the Tongass, but is not yet on the sensitive plant list.
- has been or is being raised as an issue because of rarity or conservation concerns (through the NEPA process).

The list of special interest plants is dynamic; plants may be dropped when they are found to be more abundant than previously thought, plants may be added if they are newly found in the State or Forest. Plants may be added or dropped as their taxonomic status changes. Generally, the Tongass list is based on the ANHP rare plant tracking list. The USFS and other agencies contribute rare plant occurrence information to the ANHP for database inclusion. The plants considered sensitive on the Tongass are also on the ANHP plant tracking list. A list of special interest plants is included in Appendix A of the botany resource report.

Pre-Field Review

Pre-field review consisted of consulting the TNF GIS library (rareplant and rareplant survey layers) (Tongass NF, 2008) and herbarium records (UAF, 2008) to discover locations of rare and sensitive plant species and to compare prior rare plant surveys to locations affected by the Proposed Action for roads on the District.

Rare and Sensitive Plant Surveys

One hundred and eighty-two plant surveys totaling 393 kilometers were performed on the District between 1997 and 2006. Twenty-eight kilometers of survey occurred on current or planned road corridors, mostly prior to road construction.

Invasive Plants

Information pertaining to risks and effects of invasive plants is contained in the companion document Invasive Plant Risk Assessment, Ketchikan ATM (Heutte, 2008a).

Environmental Consequences

Direct Effects

Alternative 1, the No-action Alternative, could result in some negative effects on special interest plants or habitat. Roads require maintenance to ensure that water is carried away from the road bed to avoid damage to the road, erosion, and sedimentation of streams. Failure to implement road maintenance could negatively affect sensitive plants and their habitats through deposition of eroded materials, siltation of aquatic plant habitats and alteration of soil water availability.

Effects of Alternatives 2 and 3 are not expected to substantially affect special interest plant species. Road closure, decommissioning, or storage are activities that minimize the need for regular maintenance. Given the expected funding shortfalls for maintenance, properly implemented closure will better protect plant habitats than a situation in which roads remain open but not properly maintained.

Road closures would involve ground-disturbing activities such as removal of culverts, removal of bridges, and construction of waterbars. These activities are variously referred to as “storage”, or “stormproofing” depending on management objectives. Most habitats affected by these activities are already disturbed by the initial roadbuilding activity, but in some cases closure activities could affect individual populations or sensitive habitats. Overall, these activities are not likely to cause a decline in viability of populations over the project area.

Recreational use has an effect on vegetation due to trampling and creation of unmaintained trails. Some increased effects may be expected due to concentration of recreational use to a smaller number of roads available for use by the public. Any negative effects due to increased recreational use in one area would be countered by the positive effects of decreased use in areas adjacent to the closed roads.

Indirect Effects

Potential indirect effects include changes in soil water movement (hydrology) and light regimes due to increased shading on unmaintained roads. This could change growing conditions for plant species

Open roads are brushed regularly to keep the traveled way and sight lines clear of vegetation leading to changes in normal light penetration experienced in undisturbed areas. Habitat on closed roads revert to a decreased level of light penetration as they become overgrown.

Hydrology regimes are less disturbed by closed roads than unmaintained open roads if proper storm proofing (culvert removal and water bar construction) is accomplished.

Cumulative Effects

Past road construction created the existing 360.7 miles of road on the District. Road construction has long-lasting direct effects on plant populations due to permanent alteration of habitat by removal of soil or placement of rock and gravel on top of the natural soil. Indirect effects occur through alteration of light exposure and water availability. Closure, decommissioning, and storage of existing roads will ameliorate these effects by allowing road surfaces to overgrow with native vegetation. In many cases these roads become overgrown with alder and other species in a fashion similar to what can be found occurring on natural landslide sites, although often in locations where landslides would not normally occur.

Heritage

The road system has been previously surveyed. There are no heritage resources present that have the potential to be affected by this project.

The Forest Service program for compliance with the National Historic Preservation Act (NHPA) includes locating, inventorying and evaluating the National Register of Historic Places eligibility of historic and archeological sites that may be directly or indirectly affected by the proposed project. Regulations (36 CFR 800) implementing Section 106 of the NHPA require Federal agencies to consider the effects of their actions on sites that are determined eligible for inclusion in or are listed in the National Register of Historic Places (termed "historic properties"). A Forest Service archeologist has reviewed this project and made a determination of "No Historic Properties Affected" in the area of potential effects for the proposed Access and Travel Management (ATM) Environmental Assessment project.

Recreation

This report analyzes the effects of the Access and Travel Management EA on recreation resources. Three indicators are used to compare the effects of the alternatives:

1. Access to recreation opportunities (trails, cabins, campgrounds)
2. Developed Recreation (developed campgrounds and other facilities)
3. Dispersed Recreation (undeveloped uses such as roadside camping)

Affected Environment

The National Forest Service (NFS) roads analyzed in this report provide access to recreational opportunities on Revillagigedo (Revilla)Hassler, and Gravina Islands. Roads on Hassler and Gravina Islands are closed and will not be affected by any alternative. Most of the Forest roads were built between the 1960s and 1990s to support timber management activities. These roads are used for recreation, sport hunting and fishing, and subsistence activities. Recreation users include both residents and non-residents.

Access to Recreation Opportunities

The Ketchikan highway system - Passenger vehicles can access the Ward Lake, Brown Mountain, and Harriet Hunt Lake areas from State Highway 7, which is linked to Ketchikan and Saxman. This is the most heavily use recreation area on the District. There are about 4.2 miles of NFS road maintained for passenger vehicles and 4.3 miles of high-clearance/OHV road on the Ketchikan system. The District maintains 224.5 miles of road for high-clearance vehicles and OHVs.

Remote road systems - Ninety-eight percent of the District roads are isolated systems in remote locations. The roads are either closed (maintenance level 1) or they are maintained for high-clearance vehicles and OHVs. There are no designated OHV trails on the District. These road systems radiate from marine access facilities. Access to remote road systems is by boat or floatplane. The Forest Service keeps vehicles at some of the marine access facilities for administrative access. Six commercial guides keep vehicles at Margaret MAF to transport visitors to a bear viewing site. Most public motorized vehicle use is by OHV or motorcycle because these vehicles are less costly to transport than full-size vehicles.

Developed Recreation

Ward Lake is a very popular destination for residents and non-residents because it connects to the Ketchikan road system. The Ward Lake Recreation Area offers several trails as well as a large day-use complex with picnic sites and shelters. There is easy access to freshwater fishing, wildlife viewing, and scenery. There is non-motorized boating, such as canoeing or kayaking, on Ward Lake. There are two campgrounds in the Ward Lake area. Signal Creek Campground has 24 camping sites and averages 2,930 users per year. Last Chance Campground has 19 camping sites and averages 1,900 users per year. Ward Lake receives heavy use by residents and non-residents. A 2005 Commercial Uses on Ketchikan Trails Environmental Assessment limited the number of outfitter/guide permits in the Ward Lake area because it operates near capacity.

Margaret Wildlife Viewing Area is the only developed site that is not on the Ketchikan road system. It is accessed by boat or floatplane landings at Margaret MAF. Commercial guides transport visitors from the MAF in vehicles for about 1.5 miles to the Margaret Trail, which leads to the bear viewing site a few hundred feet away. Six operators are permitted for Margaret Trail. Five guides access the MAF by floatplane and one guide uses boats. A total of 3,112 visitor days of use were authorized in 2008 and 1,338 were used (43 percent of the total authorized).

Dispersed Recreation

Ninety-eight percent of the District roads are remote and do not have developed recreation sites. These roads can be accessed by boat or floatplane landings at the MAFs. Because of this, it can be assumed that most dispersed recreation is by residents using boats. Some people use the road systems for hiking while others transport by boat OHVs and motorcycles to the MAFs. Uses include hiking, camping, berry picking, hunting, fishing, and plant collecting. Coast Guard members from the Coast Guard base in Shoal Cove use the Fish Creek road to access the Fish Creek lake system. There is one special use permit for guided hunting using motorized vehicles. The permit is for use of mainline roads connected to Southwest Neets, Fire Cove, and Upper Carroll MAFs.

Environmental Consequences

During the comment period, the public was concerned about maintaining motorized access. This project seeks to identify a road system for motorized and non-motorized recreation opportunities while minimizing negative effects to other resources. The public identified which remote roads are favored for recreation during the comment period and at a public meeting on the project. The most-used roads are open either to motorized travel or as OHV trails on the Alternative 3 map.

Table Recreation 1
 Primary Changes to Current Condition for Recreation Uses by Alternative

MAF or area	Alt 1	Alt 2	Alt 3
Bluff Lake	Road open to the fish hatchery	Road closed to public motorized use	Road closed to public motorized use
Elf Point	Mainline south open	All roads closed	Northern segment open as OHV trail
Fire Cove	Mainline open	Mainline open	Mainline open and 1.7 mile road 8000600 open as OHV trail
Hassler Island	Closed	Closed	Closed
Klu Bay	Closed	Closed	Closed
Marguerite Bay	Mainline open	Northern 4.3 miles of mainline closed	Northern 4.3 miles of mainline open as OHV trail
Shelter Cove	Mainline open	Northern 7.94 miles closed	Northern 7.94 miles open as OHV trail
Shoal Cove	Mainline open	Northern 5.28 miles closed	Northern 5.28 miles open as OHV trail
Shrimp Bay	Mainline open	Mainline open	Mainline open
Southwest Neets	Mainline open	Mainline closed	Mainline open as OHV trail
Upper Carroll	Mainline open	Mainline closed	Mainline open
Vallenar Bay	Closed	Closed	Closed
Ketchikan area	All roads open	All roads open	All roads open

Alternative 1

Access to Recreation Opportunities, Developed and Dispersed Recreation

Alternative 1 would not close additional roads for motorized access to recreation opportunities, dispersed recreation, or developed recreation. About 240 miles of road would be open to motorized vehicles. There would not be designated OHV trails under Alternative 1. The Ward Lake and Margaret bear viewing areas would remain developed recreation sites for both residents and tourists. The patterns of dispersed recreation activity could change when the State completes a Ketchikan to Shelter Cove road connection (see cumulative effects).

Alternative 2

Access to Recreation Opportunities

Alternative 2 would maintain 106 miles of open road for motorized use. About 135 additional miles of open road would be closed to motorized use. Roads and MAFs would still be available for non-motorized uses such as hiking, biking, and hunting. Although some locations for motorized access would change, the project would not affect access to trails and cabins.

Developed Recreation

Alternative 2 would not affect developed recreation sites. Roads accessing Ward Lake area and Margaret bear viewing site would not change status.

Dispersed Recreation

This alternative would close mainline roads connected to MAFs at Upper Carroll, Southwest Neets, Elf Point, the northern 8337000 road at Shelter Cove, and the northern 8000000 road at Marguerite. Most of the mainline road connected to Marguerite and Shelter Cove MAFs would remain open. Motorized vehicle use on newly closed roads would shift to the MAFs where mainline roads remain open (Shrimp, Fire Cove, Shoal Cove and the southern portions of Marguerite and Shelter Cove). The Fish Creek road would be closed.

A special use permit for motorized vehicle use at Upper Carroll, Southwest Neets, and Fire Cove would be affected by road closures at Upper Carroll and Southwest Neets. This permit is for hunting/guiding using high-clearance vehicles and ATVs. New locations would be established for the permit holder.

Alternative 3

Access to Recreation Opportunities

Alternative 3 would maintain about 109 miles of road for motorized use and 36.7 miles for OHV trail. Roads and MAFs would still be available for non-motorized uses such as hiking, biking, and hunting. Although some locations for motorized access would change, access to trails and cabins would not be affected.

Developed Recreation

Alternative 3 would not affect developed recreation sites.

Dispersed Recreation

Adding OHV trails would allow for popular roads to be accessed by the most common type of vehicle use without increasing the road maintenance budget. OHV trails would be maintained through the recreation budget. Maintaining the OHV trails would increase the trail maintenance budget by about \$5,000 per year.

Cumulative Effects to Recreation

All of the alternatives would be similarly affected by the Alaska DOT Harriet Hunt Lake to Shelter Cove road connection. This road would connect the communities of Ketchikan and Saxman to the Shelter Cove area. The Shelter Cove road system could see increased local and tourist recreation activities. Dispersed recreation opportunities would increase and use would increase on the OHV trail proposed in Alternative 3. A road connection would allow more residents to visit the Shelter Cove area.

Scenery

Changes to the road system as proposed in the ATM EA will not affect scenery because the existing visual condition, as seen from visual priority travel routes and use areas, will remain the same. No new roads are proposed, and no existing roads are to be converted to hiking trails, or highways. From a scenery standpoint, proposed changes are programmatic rather than physical.

Silviculture

This report provides the effects of implementing the Ketchikan-Misty Fiords Ranger District Access and Management Plan (ATM) on silvicultural management. It analyzes the potential for increased costs associated with reduced access to stands for silvicultural treatments.

Two aspects of silvicultural management are analyzed: regeneration certification and precommercial thinning. Regeneration certification means that stands are examined 3 years following harvest in order to certify that the stand is regenerating. Precommercial takes place 15 to 30 years after harvest to thin stands and encourage healthy tree growth.

The silvicultural analysis area includes the combined area of all LUDs with past and potential future timber regeneration harvest on the Ketchikan-Misty Fiords Ranger District. The four LUDs analyzed were timber production, modified landscape, scenic viewshed, and old-growth habitat. The analysis area includes all past and potential future regeneration harvest areas that require a regeneration certification or have not been precommercially thinned.

This analysis assumed that when a road is closed it can no longer be accessed by vehicles. This is a very conservative approach because roads may have opportunities for administrative access based on road storage methods, other administrative activities, or availability of motorized trails. Motorized trails were not considered in the analysis even though they provide access. Motorized trails are not suitable for transporting large crews or mobilizing camps or supplies.

A shared Forest Plan goal for Timber Production, Modified Landscapes, and Scenic Viewshed LUDs is to manage these lands for sustained long-term timber yields. Successful tree regeneration is critical for achieving this goal. Precommercial thinning can increase the economic timber yields by concentrating the diameter growth on fewer trees and managing the tree species composition to better respond to unknown future markets.

A Forest Plan goal for an Old-Growth Habitat LUD and Beach Buffers is to manage early seral conifer stands to achieve old-growth forest characteristic structure and composition based upon site capability. Precommercial thinning is one the first and cheapest silvicultural treatments for selecting tree species and developing vertical and horizontal tree canopy diversity.

While the Forest Plan encourages stand improvement treatments, there is no requirement that all stands receive these treatments to be in compliance with Forest Plan direction. These treatments represent management opportunities to improve timber stands for future needs. Various treatments may occur throughout a stands rotation. The Forest Plan Forest-wide Standards and Guidelines specify:

TIM3-I, H. Consider regenerating and maintaining a mix of dominant overstory tree species, where appropriate, for the site, to provide for the diversity of future stands and to augment the future availability of forested habitats used by other species (wildlife and plants). Common, but less represented Forest-wide overstory species include yellow-cedar and western redcedar. Pacific yew, Pacific silver fir, and subalpine fir are considered rare tree species (see Plants Standards and Guidelines, Section C).

TIM5-VI, A. Intermediate treatment activities include those treatments that improve the composition, health, value, and growth of a timber stand.

TIM5-VI, B. Implement thinning treatments in young conifer stands to obtain timber volume that counts toward the Allowable Sale Quantity, improve wildlife habitat, improve scenic quality, and improve future growth. Promote and emphasize commercial treatments. Promote stewardship treatments as funding permits.

WILD2-I, A. Develop an aggressive young-growth management program to maintain, prolong, and/or improve understory forage production and to increase the development of old growth characteristics in young-growth timber stands for a variety of wildlife species.

WILD2-I, A. 2. Consider the following for precommercial thinning: a) Time precommercial thinning before desirable forage species are shaded out by trees.

WILD2-I, A. 3. Consider the following for canopy gaps: a) It is generally recommended that canopy gaps be created at the same time as precommercial thinning activity.

BEACH-II, A. 10. Wildlife habitat restoration of young-growth conifer stands is encouraged to accelerate development of advanced seral stand structure. Treatments may include thinning of young stands, release, pruning, and fertilization.

Methodology

A simple GIS buffering model was used to determine the number of potentially treated acres according to distance zones from the open roads, by alternative. The process used for this analysis is as follows:

The process was done on the different scenarios of road management:

1. Current condition (Operational Maintenance Level - OPML)
2. Current management strategy (Objective Maintenance Level - OBML) or Alt. 1
3. Proposed Action (potential Objective Maintenance Level) or Alt. 2
4. Proposed action from public feedback (potential Objective Maintenance level) or Alt. 3

Each of the four road system scenarios above considered only open roads in the GIS analysis.

Each scenario was then buffered to create a multi-ring buffer system for each scenario with distances of 500, 1,000, 1,500, 2,000, 2,500, 3,000, 3,500, 4,000, 4,500, and 5,000 feet.

Each set of buffers was overlaid on the selected harvest polygons for the Ketchikan and Gravina tiles (only places that had roads and harvests). These harvests were first tagged with decade indicators to reflect how many 10-year periods were passed since harvest date. Codes 0-9 were coded (0 were unknown or private lands).

The data was then summarized by acres and separated by the distances as well as NFS managed lands and Non-NFS managed land.

A spreadsheet was then prepared to reflect the results.

The entire process was then repeated to reflect a decadal coding by 0-15 year, 15-30 year, and beyond 30 years in age since harvest.

Past helicopter harvests are included in the analysis numbers, but it is assumed that these harvest areas may not receive precommercial stand treatments due to their isolation and the high costs of helicopter access.

Affected Environment

Regeneration Certification

The majority of the stand regeneration is achieved through natural regeneration. The Ketchikan Misty Fiords Ranger District achieves 100 percent successful stand regeneration within 3 years of final harvest. Each harvested unit requires a certification examination. This certification requires a forest crew to access the unit and evaluate each acre. The cost to conduct the certification is directly

linked to the type of access and the distance to the unit. A unit with open road access is the least costly and the cost increases with walking distance down a closed road, cross country, or access by aircraft. At a certain distance, depending on the amount of acres to examine, a helicopter is the safest and most cost effective access method.

Most units requiring certification are accessed from secondary National Forest System roads and temporary roads. All temporary roads and most new National Forest System roads are closed upon final harvest and access to units is by foot.

Regeneration certifications are required and their funding is normally guaranteed by the Knutson-Vandenberg trust funds collected from individual timber sales. For the last 5-10 years most new system roads have been closed to vehicle traffic due to temporary bridge removal, berms and pulled culverts. Certification survey production has decreased by 50 percent because access is by foot. With motorized access, a person can survey 40 to 60 plots per day. With closed roads, a person can survey 20 to 30 plots a day.

Timber Stand Improvement

The primary timber stand improvement activity is precommercial thinning treatments of past clearcuts. This silvicultural treatment is done 15 to 30 years following harvest. At age 15 the trees' densities can range from 3,000 to over 10,000 trees per acre. A recommended silvicultural stocking level is between 250 to 400 trees per acre. The purposes for the treatment are to improve the tree and understory species composition, improve future growth, and to ensure tree diversity by favoring minor tree species such as western redcedar and Alaska yellow-cedar. These two species normally develop and show some dominance in a wind-generated multistory uneven-aged stand. The two cedars are slower to regenerate and grow more slowly than western hemlock and Sitka spruce in clearcuts. Tappeiner stated, "Species composition is often established early in the life of the stand. Species such as western redcedar, which have relatively slow early-growth rates, must be given space to grow if they are to become part of the main canopy, otherwise they will become suppressed in the understory or die during stem exclusion."

Tappeiner found, "Density management at planting or at an early age can affect the amount and timing of the yield of wood as well as the future structure of the stand." Precommercial thinning is an important treatment for managing for future economical timber sales. It increases future log value by increasing diameter growth on the final crop trees and diversifies tree species composition (than in unthinned natural stands) to have more flexibility in the future markets.

Similar to the cost of conducting certification exams, the cost of precommercial thinning is linked to the type and difficulty of access. The big difference is that the first precommercial thinning is generally proposed 15 to 30 years after harvest. The lowest treatment costs are units that are accessed by a well-maintained open road system. The cost increases with difficulty of access and the distance a crew has to walk. After 15 years, a road that has not been maintained is not drivable without brushing.

Between 15 and 30 years, these same roads can only be walked. When a road is closed with a berm, or if culverts and bridges are pulled, access is generally by foot. If the walking distance is beyond about 4,000 feet, the cost will generally increase beyond the Forest average cost range. Units beyond this 4,000 feet may not receive precommercial thinning treatments during the 15- to 30-year window due to access cost. This would not preclude other intermediate treatments in the future. With current operational maintenance levels about 20 percent of the units (2,056 acres) less than 15-years-old may not be treated because they are more than 4,000 feet from an open road.

Environmental Consequences

Alternatives 1, 2 and 3 change the current motorized access to units requiring regeneration certification surveys and tree improvement precommercial thinning. Limited access could easily double regeneration certification surveys implementation cost in some cases. The increase cost of accessing units with extreme tree densities and needing precommercial thinning may prohibit or delay the implementation of 22 percent of the potential treatment acres in Alternative 1, 60 percent in Alternative 2, and 51 percent in Alternative 3. Reducing motorized access for precommercial thinning could cause delays, cancellation, or increased thinning costs. Forest Plan tree improvement goals, objectives, and standards are potentially not achieved.

Regeneration Certification

Alternative 1 will not change the ability to access and therefore the cost of conducting regeneration certification surveys will not change. The units that require certification are mostly accessed by new spur roads that were built and closed under the timber sale contract. The existing open roads will only change slightly with the lack of maintenance so they still can be used to gain closer access.

Alternatives 2 and 3 change the ability to access units requiring regeneration certification and therefore the cost could double due to loss in survey productivity. In the worst case scenario, the Upper Carroll road system, Alternative 2 closes the whole system and Alternative 3 closes the secondary system roads and spurs. Both alternatives require access by helicopter for all units, resulting in higher costs.

Timber Stand Improvement

The following table shows the number of acres that are more than 5,000 feet from an open road and risk of being outside the range of operability.

Table Silviculture 1

Potential Precommercial Thinning Acres and Distance from Open Roads

Distance From Road Access (Feet)	Existing Driveable (OPML) (Acres)	Alternative 1 (OBML) (Acres)	Alternative 2 (OBML) (Acres)	Alternative 3 (OBML) (Acres)
0-500	3,772	4,104	1,110	1,288
500-1,000	1,795	1,763	863	1,003
1,000-1,500	956	960	712	816
1,500-2,000	582	610	596	696
2,000-2,500	473	465	427	508
2,500-3,000	341	285	335	397
3,000-3,500	218	201	253	303
3,500-4,000	166	175	224	293
4,000-4,500	165	139	218	298
4,500-5,000	145	118	184	239
Beyond 5,000	1,747	2,205	6,103	5,182
Total Acres within 4,000 feet of roads	8,303	8,563	4,520	5,304
Total Acres over 4,000 feet from roads	2,057	2,462	6,505	5,719
Percent of Total Acres over 4,000 feet from roads	20%	22%	60%	51%

Alternative 1 results in minor changes from the existing roads that are drivable. Under this alternative, the proposed objective maintenance level will cause 2 percent more of the potential acres have longer walk-ins and may not be treated, due to higher cost than the existing operational maintenance level.

Alternative 2 increases the miles of closed road by 135 miles. Under this alternative, the proposed objective maintenance level will cause 40 percent more of the potential acres have longer walk-ins and may not be treated, due to higher cost than the existing operational maintenance level.

Alternative 3 increases the miles of closed roads by 95 miles. The number of acres with longer walk-ins is greater than Alternative 1 but less than Alternative 2. Under this alternative, the proposed objective maintenance level will cause 31 percent more of the potential acres to have longer walk-ins and may not be treated, due to higher cost than the existing operational maintenance level.

All of the alternatives reduce the units potentially available for precommercial thinning treatments, compared to what is currently drivable, by increasing the cost of extended access. While these numbers may seem quite large, certain assumptions must be factored in. Alternative 2 creates about a threefold increase in the number of acres at risk. Some of this lost treatment potential is due to helicopter harvests. Some of it may be recoverable from using ATVs by contractors on the

motorized trails in Alternative 3. This cost would likely be above our average but not beyond reason. This type of contract situation has not arisen in the past so we do not have cost documentation for this situation.

Portions of the high-risk acreages are located along closed roads that have minimal storage activities. These typically may be administratively made accessible, or accessible with very little cost due to the minor amount of closure. The Transportation Report displays the storage closure categories (1A, 1B, and 1C) and mentions that roads would remain administratively available for other resource disciplines (see Transportation section).

Field observations show these untreated units' future composition will be more typical of a natural process and be less diverse in tree species composition, potentially dominated by western hemlock. Future value in these stands would likely be lower due to smaller average diameter, fewer trees achieving an economical minimum diameter and less tree species to help with taking advantage of a diverse market (Tappeiner, 2007). These stands would have about the same value, when using today's market conditions.

Thinned stands offer management the opportunity to manage the tree species composition in a stand to favor species with the high potential for future value and maintain species diversity more uniformly over a harvest unit. By not maintaining access, most LUDs tree improvement goals, objectives, and standards are potentially not fully achieved, may cost more, or may be delayed.

Cumulative Effects

Cumulative effects are most likely to occur from future projects that open roads for administrative reasons such as timber sales or access to a utility corridor. There are opportunities to reduce the number of stands at risk of not being treated. One opportunity is to coordinate precommercial thinning contracts with future administrative actions such as timber sales that would open roads. These are somewhat predictable within a 5-year horizon and the plans are updated yearly. All of the potential precommercial thinning falls within the Phase 1 areas of the Forest Plan Adaptive Management Plan. This increases the likelihood of potential shared opportunities.

There are other types of planned or projected activities in this analysis area. Any activity that temporarily opens a closed road system for several years can allow access and lower precommercial thinning and regeneration certification costs. Historically most resource activities have not affected the precommercial thinning or regeneration certification program.

The other potential cumulative effect could come from the Alaska DOT Harriet Hunt Lake to Shelter Cove road connection. This may help reduce the cost to contractors in terms of mobilization costs which may allow for lower bids on thinning contracts on the Shelter Cove road system.

Soil

This section provides a summary of the effects that closing or keeping open roads to public vehicular use might have in relation to soil resources. Past environmental documents have disclosed impacts to the soil resource from the construction of roads and are not included in this report. Nevertheless, surface and mass wasting erosion risks differ with each alternative and do impact road maintenance costs as well as public safety. Also, other resources may consider erosion risks in their analyses.

Affected Environment

For this analysis, an index indicates risks of surface and mass wasting erosion and is weighted toward effects in riparian areas. The index is associated with costs for maintenance of roads for motorized use and the potential for roads to fail due to erosional processes. Details of the analysis

are included in the Soil Resource Report. The index is not meant as a predictor of landslides or other road problems. It indicates the higher risk areas based on geology, slope, Mass Movement Index class, rain on snow hydrology, age of stand, and intersection with riparian buffers.

The risk index ranges from 1 to 4, with 4 being the approximately 6.8 percent of the District with the highest risk. The resulting index classes were tested against the landslide layer to confirm the change in stability between the classes.

Environmental Consequences

The level of landslide risk along District roads would not change with road closures. However, travel safety and road maintenance costs could be affected in higher landslide risk areas. The following tables show the miles and percent of road miles located in the higher risk index 4 areas.

Table Soil 1
Percent of Roads Catagorized as Risk Index 4 by Alternative and MAF or Area

MAF or Area	Alt 1 closed	Alt 2 closed	Alt 3 closed	Alt 1 open	Alt 2 open	Alt 3 open	Alt 3 open trails
Bluff	2.5	2.0	2.0	0.4	—	—	—
Elf Point	1.9	1.3	0.0	0.8	—	—	2.7
Fire Cove	4.9	5.4	5.8	4.9	3.2	3.2	0.4
Hassler	0.1	0.1	0.1	—	—	—	—
Klu	0.5	0.5	0.5	—	—	—	—
Ketchikan	8.9	9.0	9.0	5.0	5.0	5.0	—
Margarite	11.6	10.8	13.7	8.5	6.3	6.3	0.5
Shelter	5.5	8.7	6.9	6.7	4.3	4.3	17.8
Shoal Cove	18.0	12.4	10.7	7.6	3.5	3.8	21.5
Shrimp	3.4	3.1	3.1	8.1	8.9	8.9	—
SW Neets	24.3	6.6	10.7	4.0	—	—	0.6
Upper Carroll	1.7	3.3	3.8	3.9	—	2.6	—
Vallenar Bay	0.0	0.0	0.0	—	—	—	—
All areas	7.5	7.6	7.6	6.5	4.8	4.7	8.2

Source: 2008 atmalt_risk_severity_FS.xls, Darin Silkworth, Angela Coleman

Table Soil 2
Miles of Road Catagorized as Risk Index 4 by Alternative and MAF or Area

MAF or Area	Alt 1 closed	Alt 2 closed	Alt 3 closed	Alt 1 open	Alt 2 open	Alt 3 open	Alt 3 open trails
Bluff	0.1	0.1	0.1	—	—	—	—
Elf Point	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Fire Cove	0.9	1.9	1.9	1.3	0.3	0.3	0.0
Hassler	0.0	0.0	0.0	—	—	—	—
Klu	0.0	0.0	0.0	—	—	—	—
Ketchikan	0.3	0.3	0.3	0.4	0.4	0.4	—
Margarite	2.3	4.2	4.1	2.8	0.8	0.8	0.0
Shelter	0.2	2.4	1.6	3.4	1.1	1.1	0.8
Shoal Cove	3.9	9.3	7.3	6.5	1.2	1.1	2.0
Shrimp	0.3	0.3	0.3	1.0	1.0	1.0	—
SW Neets	0.5	1.1	1.1	0.6	—	—	0.0
Upper Carroll	0.1	0.7	0.5	0.6	—	0.2	—
Vallenar Bay area	0.0	0.0	0.0	—	—	—	—
All areas	8.7	20.5	17.3	16.6	4.8	5.0	3.0

Source: 2008 atmalt_risk_severity_FS.xls, Darin Silkworth, Angela Coleman

Cumulative Effects

Past EAs and EISs have disclosed impacts from the construction of roads and are not included in this analysis. This EA covers only the impacts associated with closing roads to public use. Past road closures are included in all alternatives. All reasonably foreseeable activities only include roads that will be closed to public use. Therefore, there are no additional cumulative effects.

Subsistence

This analysis tiers directly to the Forest Plan Standards and Guidelines for subsistence (pp 4-68 & 4-69), the 2008 Forest Plan FEIS (pp 3-419 through 3-436). In-depth discussions on the history of subsistence use and community information can be found in the 1997 Forest Plan FEIS and its accompanying Appendix H.

The Alaska National Interest Lands Conservation Act (ANILCA), passed by Congress in 1980, mandates that rural residents of Alaska, including both Natives and non-Natives, be given a priority for subsistence uses of fish and wildlife. Since non-native rural residents qualify, subsistence activities are not the same as Native cultural and traditional use even though overlap occurs.

Section 810 of ANILCA requires the Forest Service, in determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of National Forest System land in Alaska, to evaluate the potential effects on subsistence uses and needs, followed by specific notice

and determination procedures should there be a significant possibility of a significant restriction of subsistence uses. Three factors are identified: resource abundance and distribution, access to resources, and competition for the use of resources.

Section 811 of ANILCA requires that “rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on the public lands,” and that “snowmobiles, motorboats, and other means of surface transportation traditionally employed for [subsistence] purposes by local residents” shall be permitted subject to reasonable regulation.

Findings

Consistent with Section 810 of ANILCA, the alternatives were evaluated for potential effects on subsistence uses and needs, as described above. Based on that evaluation, it was determined that none of the alternatives would result in a significant possibility of a significant restriction on subsistence resources and uses. Abundance and distribution of resources, access to those resources, and competition between rural and non-rural residents were considered in the analysis.

Consistent with Section 811 of ANILCA, reasonable access to subsistence resources on public lands is maintained. Roads proposed for closure in Alternatives 2 and 3 are located at remote MAFs accessible by boat or plane; this traditional means of access to subsistence resources will not be affected by the project. In addition, roads proposed for closure at these remote sites will still be available for use by non-motorized means.

Subsistence Analysis

The Alaska Land Use Council’s definition of “significantly restrict subsistence use” is one guideline used in this evaluation: “A Proposed Action shall be considered to significantly restrict subsistence uses if, after any modification warranted by consideration of alternatives, conditions, or stipulations, it can be expected to result in a substantial reduction in the opportunity to continue subsistence uses of renewable resources.” The U.S. District Court Decision of Record in *Kunaknana v. Watt* provided additional clarification. In part it states: “restrictions for subsistence uses would be significant if there were large reductions in abundance or major redistribution of these resources, substantial interference with harvestable access to active subsistence-use sites, or major increases in non-rural resident hunting” (Forest Plan FEIS).

Ketchikan is classified as a non-rural community and residents do not have a subsistence priority under ANILCA. Hunting by Ketchikan residents (and other non-rural participants) occurs under sport hunting regulations issued by the State of Alaska. Wolfe (2004) contrasts the difference between sport hunting and subsistence objectives: Sport hunting commonly promotes principles of “fair chase,” high-quality hunts, and greater opportunities for participation by other sportsmen. Less emphasis is placed on using the most efficient harvest method or on distance traveled.

In contrast, most subsistence food is taken from a core use area surrounding the community. More extensive areas beyond the intensively used core are occasionally used. Intensive uses of core areas result from the economic need to be efficient. Subsistence users typically hunt and fish in ways to efficiently optimize food output per investment of effort and money. Special trips to more distant parts of the community use area occur seasonally for special resources, or on certain years when local fish and game are scarce (Wolfe 2004).

There are no separate Federal subsistence seasons for wildlife in the project area (no regulations differ from State seasons/bag limits). Although harvest may be for subsistence purposes, the Federal Subsistence Board does not issue federal registration permits for any wildlife resources in the project area. Subsistence users must comply with all State of Alaska licensing, permitting, and reporting requirements.

The project area includes all of the Ketchikan-Misty Fiords Ranger District that has roads (not Misty Fiords National Monument / Wilderness). Most roads are located in development land use designations (LUDs) on Revillagigedo (Revilla), Hassler, and Gravina Islands (Timber Production, Modified Landscape, and Scenic Viewshed LUDs). A few roads are in the non-development Old-Growth Habitat LUD on these islands.

This subsistence analysis was done at the Wildlife Analysis Area (WAA) scale, considering all road systems in each WAA. Marine access facility (MAF) locations determined with which WAA a road system was analyzed. The WAA scale also coincides with State of Alaska harvest records. Each of the areas analyzed is described below.

North Revilla, WAA 510: This WAA includes the Hassler, Klu Bay, Shrimp Bay, Fire Cove, Bluff Lake, Southwest Neets, and Marguerite Bay (Margaret) roads. The south end of the Margaret road system in the Francis Cove area is in the adjacent WAA 509, but is included as part of WAA 510 because it is connected to the Margaret MAF. The MAFs in this WAA are 1-3 hours from Ketchikan depending on location, water and weather conditions, and type of boat.

Carroll Inlet, WAA 406: This WAA includes the Upper Carroll, Shoal Cove, and Shelter Cove road systems. The west end of the Shelter Cove road system near George Inlet is in WAA 407, but is included with the Shoal Cove and Upper Carroll roads because of the MAF location. The MAFs in this WAA are about 1-2 hours from Ketchikan.

Ketchikan, WAAs 407 – 408: These two WAAs are combined for analysis because the Ketchikan road system is large. WAA 408 runs along Tongass narrows while WAA 407 surrounds George Inlet. The extreme north end of the road system is in the adjacent WAA 509 that surrounds the Naha area; WAA 509 has minimal roading from the adjacent WAAs (510, 407) but does not have a MAF so was not analyzed as a separate unit for this resource.

Gravina, WAA 101: This WAA includes all of Gravina Island and the road systems on that island. This WAA is close to town and provides local hunting opportunities. The WAA can be accessed by boat or from the airport ferry (National Forest lands are not usually accessed this way). The only road on National Forest System land in this WAA is the old closed road in Vallenar Bay and no changes in maintenance levels are planned for this WAA.

Assumptions

In this analysis, existing (current) condition refers to 2007 conditions.

Roads proposed for closure (ML 1 storage) are assumed to have no vehicle traffic; the term “closed” is used to describe these roads in this report. On-the-ground work to place roads in storage (implementation) will depend on funding and personnel constraints and may occur over multiple years. However, a road designated as ML 1 in this project is considered “closed” to motorized vehicle traffic for this analysis. Therefore, no illegal use is considered as part of this analysis.

Roads proposed for conversion to OHV trails under Alternative 3 are considered open (calculated with ML 2 roads) for analysis because they provide motorized access.

In looking at ADF&G harvest data, hunters from Ketchikan, Juneau, and outside of Alaska are counted as non-rural. Other Alaskan cities that would not be rural were assumed to be named specifically in the data, so those hunters listed as “other Alaska” were considered rural.

Saxman residents have Ketchikan mailing addresses and are therefore included with Ketchikan numbers in ADF&G harvest data, along with a few residents who are rural near the north end of the road system. Although this reduces the rural harvest numbers to some extent, Saxman makes up only 3 percent of the Ketchikan Gateway Borough population (2006 estimates, US Census Bureau)

so any underestimate should be minimal. In addition, the harvest data is not the only information used in the analysis.

Saxman was analyzed as rural. On May 7, 2007, the Federal Subsistence Board published its Final Rule on non-rural determinations in the Federal Register; that rule determined the entire Ketchikan road system is non-rural, including Saxman and the north end of the road system. These areas must be in compliance with the new rule by May 7, 2012. Saxman filed a Request for Reconsideration which is currently under review by the Office of Subsistence Management.

Summary of Effects

Roads provide access to the National Forest for a number of purposes. More and easier access to wildlife, such as that provided by a road system, generally increases the amount of hunting and trapping that occurs in an area, both for subsistence and general (sport) purposes. However, due to the remote nature of most of the road systems in this analysis, use of the road systems for strictly Federal subsistence purposes is less than on road systems connected to subsistence communities. In addition, the road use that does occur on the roads in this analysis includes use from Ketchikan residents, who do not qualify for Federal subsistence under ANILCA.

Changes in abundance and distribution of subsistence species are not anticipated, although slight increases could occur due to reduced disturbance to wildlife in those areas with proposed reductions in open road density (see the wildlife resources report). No changes in competition between rural and non-rural residents is expected as a result of any alternative.

Although motorized road access would decrease under Alternatives 2 and 3, much subsistence access is from boats due to the remote nature of the road systems. Mainline roads in high-use WAAs remain open, and the project would not change other means of access (boat, plane, foot, etc) to National Forest System lands.

Cedar Bark, Berries, Spruce Roots, and Other Subsistence Plants

Cedar occurs throughout the District, but abundance depends on the specific location. Huckleberry, blueberry, and salal are also common through parts of the project area. Other plants are more localized and are typically collected near the shoreline or from trails or roads connected to the local communities.

Effects: Beach/estuary buffers protect plants occurring along the beach and adjacent old-growth habitat where many subsistence resources are found; these areas would not be affected by this project. No substantial vegetation changes are expected from this project (alder, grass, and brush may grow along the closed roads but forested and beach habitats, where most of the subsistence plants grow, will not be affected).

There would be no effect to subsistence use of plants under the No-action Alternative and minimal effect under Alternatives 2 and 3 due to some reduction in roaded access. However, primary access to most of the WAAs is by boat and many of the roads proposed for closure are already not drivable. Therefore, no restrictions on subsistence use of plants are expected under any alternative.

Fish, Shellfish, and Other Benthic Organisms

Marine resources, including fish, mammals, and plants, compose the majority of subsistence harvest by weight (Forest Plan FEIS 3-425). The marine habitat surrounding the project area is productive for salmon, halibut, sea cucumbers, crabs, shrimp, and other benthic organisms. Other than permitted coastal developments such as marine access facilities (MAFs), marine habitat and activities are outside the regulation and jurisdiction of the Forest Service. Harvest of fish and shellfish in other than freshwater is also not under the jurisdiction of the Forest Service. Roads may

affect downstream habitat through sedimentation and fish passage may be affected by road-stream crossings.

Effects: The Forest Plan predicted that some effects to fish habitat would result from land management activities, but the magnitude of the effects could not be calculated. That analysis determined that risk to fish habitat increased with increased timber harvest, increased roading, and narrower riparian areas along streams; this project does not propose any of these activities.

There would be no effect to access for fisheries or marine resources under Alternative 1. The closure of roads under Alternatives 2 and 3 may help fisheries by decreasing downstream sediment risk and by improving fish passage (see Aquatic Resources Report). Restrictions on subsistence use of fish, shellfish, or other marine subsistence species are not anticipated as a result of this project.

Black Bears

Black bears are fairly abundant in the analysis area as evidenced by scat and uprooted skunk cabbage found during field work for other projects. Bear are habitat generalists but estuaries, riparian areas, and forested coastal areas (early succession and old growth) have the highest value. Brown bears are occasionally observed on Revillagigedo Island but are not regular project area residents, so were not analyzed.

Effects: Beach, estuary, and riparian management areas are protected by Forest Plan Standards and Guidelines and important fish habitat is also protected. Most bear hunting occurs from boats along the shoreline in the spring season and incidentally with deer hunting during the fall season. Therefore, road closures are not expected to change subsistence use of black bears and no restrictions on subsistence use of bears are anticipated as a result of this project.

Sitka Black-tailed Deer

Sitka black-tailed deer receive the highest subsistence use of all terrestrial animals in Southeast Alaska. Deer numbers are currently low to moderate throughout most of Game Management Unit 1A (the WAAs are part of this Game Unit); predation by bears and wolves and reduced habitat capability from clearcutting have prevented the deer populations from rebounding after the 1998/99 severe winter (Porter 2005).

Although portions of the project area may be important to some individual subsistence users, non-rural Ketchikan residents are the primary users (1997 Forest Plan FEIS, Appendix H). Rural communities that documented important deer hunting areas (those areas contributing to more than 75 percent of the annual harvest) in the project area are Saxman for WAA 406 (Carroll Inlet) and Metlakatla for WAA 101 (Gravina Island). Several other rural communities reported a small percentage of households having used the area and ADF&G deer harvest data indicates that some harvest from other communities occurred during the 1994 – 2003 harvest years (most recent 10-year harvest data set).

Saxman residents are grouped with Ketchikan in the ADF&G data due to their mailing address. Some rural harvest may not have been reported either due to sample size, noncompliance with State regulations regarding deer harvest, or from cultural tradition of Native rural residents.

Effects: The Forest Plan FEIS (pg 3-230) indicates that deer habitat capabilities in several portions of the Tongass may not be adequate to sustain the current levels of deer harvests, and that full implementation of the Forest Plan could therefore be accompanied by a significant possibility of a significant restriction on deer due to a reduced abundance and/or distribution of deer by decreasing habitat capability (past and future timber harvest), and due to increasing competition for deer by building roads in areas accessible from non-rural communities while maintaining existing sport hunting regulations (State of Alaska determines sport harvest regulations).

Abundance and Distribution: This project would not reduce habitat capability as no timber harvest is planned. Slight localized shifts in distribution could potentially occur due to reduced disturbance by motorized vehicles along roads proposed for closure under Alternatives 2 and 3. However, due to the remote nature of most of the MAFs, existing disturbance is minimal, so any changes as a result of reduced disturbance would be minor. Overall, no effects to abundance or distribution of the resource (deer) are anticipated as a result of this project.

Access: None of the alternatives would limit the use of public lands for the purposes of subsistence gathering activities. Although motorized access would decrease in Alternatives 2 and 3, the roads are still available for other means of access (for example, walking, bicycling, or snowshoeing) and at least 100 miles of road will remain open to motorized use under all alternatives. Some of the roads proposed for closure already have an objective of ML 1 (closed) from previous projects; others are not currently drivable.

All alternatives would maintain historical access by boat, plane, and foot. Boat access accounts for the most deer harvest across GMU 1A (Porter 2005) and is assumed to hold true for the smaller subset of this WAA. In addition, roads proposed for closure are located at remote MAFs, requiring boat or plane to access. Minimal use of motorized vehicles occurs on these roads due to the cost and difficulty of getting a vehicle to the site.

The vast majority of the public comments received during scoping were from Ketchikan (non-rural) residents who do not qualify for Federal subsistence rights under ANILCA. However, one letter received from a rural resident indicated that his family has used the area for subsistence and recreation purposes for decades, especially WAA 510, and that overall, the Proposed Action was positive. Another comment suggested more road closures, especially in WAA 510, to reduce disturbance to wildlife in a Native traditional hunting and gathering area.

Under all alternatives, the mainline road at Shelter Cove would remain open for the Harriet Hunt Lake to Shelter Cove road connection. If the connection is built, the Shelter Cove area (WAA 406) would be easier to access.

The following table shows the status of open/closed road changes proposed by Alternatives 2 and 3. Roads that would change to open status in Alternative 3 include the 37 miles of OHV trail.

Table Subsistence 1
Road Change Summary by WAA*

WAA	Alternative 2 Changes		Alternative 3 Changes	
	To be closed – now open and drivable	To be opened – now closed	To be closed – now open and drivable	To be opened – now closed
510	32.3 mi	0.5 mi	18.6 mi	5.0 mi
406	67.0 mi	0.0 mi	52.6 mi	0.0 mi
405	2.5 mi	0.0 mi	0.1 mi	2.4 mi
101	0.0 mi	0.0 mi	0.0 mi	0.0 mi
407-408	0.0 mi	0.0mi	0.0 mi	0.0 mi

* Nearest 1/10 mile displayed in Table

Source: GIS data J.Llanos, 2008

Saxman reported WAA 406 (Carroll Inlet) as one of the areas that contributes to 75 percent of their deer harvest (1997 Forest Plan FEIS, Appendix H). ADF&G deer harvest data indicates this WAA has the second highest reported deer harvest for the period of 1994 – 2003 of the WAAs being analyzed (behind WAA 101). The majority of that harvest was reported by Ketchikan residents, but there is no way to separate the Saxman harvest from the Ketchikan harvest. In any case, there is a high level of documented use of this WAA but it is unknown what amount of that harvest qualifies as Federal subsistence use.

There is potential for road closures to affect subsistence deer hunting in WAA 406 as this WAA has the greatest reduction in open road miles in both action alternatives. However, because this WAA has the most miles of National Forest System road, WAA 406 also leaves the most miles open for motorized use (about 144 miles in Alternative 2 and about 161 miles in Alternative 3). Because Shoal Cove and Shelter Cove road systems are closer to town, these likely receive more road use than the Upper Carroll system. The mainline roads at Shoal Cove and Shelter Cove will remain open for public use under both action alternatives, with side roads being closed, so access will still be provided throughout most of the road-accessible portion of the WAA. Most of the road segments planned for closure are less than 0.5 mile in length, so major access changes will not occur even in this WAA. No significant possibility of a significant restriction is anticipated for deer hunting in this WAA as a result of this project.

Competition: Competition for subsistence resources is a result of several factors, such as fish and game regulations, mobility, the natural distribution of game species across the Tongass, decreases in resource populations as a result of habitat reductions, decreases in resource populations as a result of over-harvest, and access provided to rural communities in the form of roads, ferries, and commercial air carriers (Forest Plan FEIS). New road construction and habitat reductions are assumed to increase competition. Since this project does not propose new roads or habitat changes, no changes in competition are expected as a result of any alternative.

Cumulative Effects

Access: The proposed road connection would provide increased access for both rural and non-rural hunters to the west side of WAA 406 (includes the Shoal Cove, Shelter Cove, and Upper Carroll road systems). Saxman reported WAA 406 as important to their deer harvest and ADF&G deer harvest data indicates a high level of use in this WAA by Ketchikan residents (see the Subsistence Resource Report), but the data does not indicate which portions of the WAA receive the use or break out how much of the use is by Saxman (rural) residents.

Competition: The road connection would be available to all people regardless of rural status, but since there are more non-rural residents, competition for resources could increase in WAA 406 sometime in the future. However, Saxman's non-rural designation under Federal Subsistence Management regulations will become effective in 2012, unless the outcome of a Request for Reconsideration reverses the 2007 decision of the Federal Subsistence Board. Metlakatla reported deer hunting in WAA 406 from 1999 – 2003, with only one year being successful (2000). Metlakatla residents would continue to have to boat or fly to access WAA 406 (either to Ketchikan to drive the new road connection or directly to the WAA), so use levels by Metlakatla are not expected to change. Overall, competition between rural and non-rural residents should remain similar to the present conditions.

Abundance and Distribution: The potential road connection should not change the abundance and distribution of subsistence resources. Slight shifts in distribution could occur due to increased human presence, but no large-scale changes are anticipated. Increased hunting, gathering, and trapping as a result of the road connection could lead to decreases in the abundance of some

resources. However, much of the use in WAA 406 is by non-rural residents and no subsistence restrictions are anticipated.

Finding: No significant possibility of a significant restriction is expected as a result of the Ketchikan-Misty Fiords Ranger District Access and Travel Management decision, either directly or cumulatively.

Timber Management

This analysis provides a summary the effects to timber management by the Access and Travel Management Plan (ATM) for the Ketchikan-Misty Fiords Ranger District. Timber management includes large commercial timber sales, micro-timber sales, timber salvage sales, commercial thinning, and special forest products, such as firewood and free-use wood permitting.

Affected Environment

The timber management analysis area encompasses the combined network of National Forest System (NFS) road systems existing on the District. These road systems typically branch from separate marine access facilities (MAFs) where logs are transferred to a barge for shipping to a mill. NFS roads were primarily developed to access timber for commercial harvest as the forest products industry became a major part of the economy of Southeast Alaska in the 1950s. Most of these roads exist in Timber Production and Modified Landscape land use designations (LUDs), which promote commercial timber production.

The existing network of NFS roads on the District are key to achieving this goal for timber management, which is to manage the timber resource for production of saw timber and other wood products from suitable timber lands made available for timber harvest, on an even-flow, long-term sustained yield basis and in an economically efficient manor. Timber from the Tongass National Forest is offered for sale as part of the multiple-use mission of the Forest Service identified in the public laws guiding the agency. Alaska-specific legislation and the Tongass National Forest Land and Resource Management Plan (Forest Plan) direct the Forest Service to seek to provide timber to meet market demand, subject to certain limitations. Appendix A of the Forest Plan describes the process used to identify lands suitable for timber production. Forest-wide standards and guidelines for this resource are on page 4-70 of the Forest Plan.

The Record of Decision (ROD) for the 2008 Forest Plan Amendment approved the Timber Sale Program Adaptive Management Strategy. In Phase 1 of this strategy, the timber program will be restricted to a portion of the suitable land base focusing on the roaded portion and some lower value roadless areas and excludes moderate and higher value roadless areas.

Environmental Consequences

This analysis area contains several tree species that are desirable for timber production or other wood products. These species include Western hemlock (*Tsuga heterophylla*), Sitka spruce (*Picea sitchensis*), Western redcedar (*Thuja plicata*), Alaska-yellow cedar (*Chamaecyparis nootkatensis*), mountain hemlock (*Tsuga mertensiana*), red alder (*Alnus rubra*), and a trace of Pacific silver fir (*Abies amabilis*).

The effects identified with storing additional NFS roads are not significant to timber management since under all alternatives these roads are available for administrative use. In addition, effects are also difficult to quantify due to the uncertainty of future timber sales with changing market conditions and timber sale locations. NFS roads presently used by timber sales under contract, that are identified for storage, would not be stored until harvest activities have been completed. Newly

constructed NFS roads for timber sales under contract would be stored following harvest and would not affect this project.

Storing additional NFS roads could have some undesired effects to timber management. Access to areas for special forest products and timber resource information gathering could be reduced. In addition, there could be an increase in the amount of roads that would require reconditioning to access future timber. Road reconditioning typically refers to culvert replacement, surface rock replacement, and subgrade repair. Reconditioning cost is generally borne by the timber sale and could be a deterrent to offering small sales where this cost could not be economically amortized.

The undesirable effects of storing roads could be balanced by the benefits gained. Costly repairs to the existing roadbed could be prevented by installing water bars, cleaning ditches, removing culverts and bridges, and storm-proofing roads. The removal of red pipe culverts during road storage could reduce the cost of road reconditioning when installation of a proper culvert would be required. Storing roads that are not currently needed could allow road maintenance to be focused on primary roads that have more use. Road maintenance consists of superficial periodic repairs to an existing road surface, brushing, and cleaning and repairing drainage features. These tasks are performed to keep the roads in the safe and useful condition for which they were designed.

Alternative 1

Approximately 120 of the 360.7 miles of existing road NFS roads are currently closed for storage. There would be no action taken under this alternative. Road maintenance costs would exceed funding and road maintenance would be deferred. This could increase the backlog of maintenance needs, which would increase the potential for road deterioration.

Alternative 2

Approximately 135 additional miles of NFS roads would be scheduled for storage. Most of the primary roads used for timber management activities would remain open. Exceptions to this are in Klu Bay, SW Neets, and a portion of Shrimp Bay roads systems. Klu Bay is the only closed road system that may require reopening based on the Tongass 5-year Sale Plan. Klam Timber Sale EIS is currently in the early planning phase. Closing the road from this MAF would reduce accessibility to portions of the analysis area during planning.

Alternative 3

Approximately 95 additional miles of NFS roads would be scheduled for storage. Some of the primary roads used for timber management activities would remain open. Exceptions to this are in Upper Carroll, Klu Bay, SW Neets, and a portion of Shrimp Bay roads systems. Klu Bay is the only closed road system that may require reopening based on the Tongass 5-year Sale Plan. Klam Timber Sale EIS is currently in the planning phase. Closing the arterial road from this MAF would reduce accessibility to portions of the analysis area during planning. About 36.7 miles of road would be designated as OHV trails. Since road reconditioning costs to access timber using OHV trails would be similar to cost of reconditioning roads scheduled for storage.

Cumulative Effects

Common to all alternatives is the proposed Alaska DOT Harriet Hunt Lake to Shelter Cove road system. This road, once constructed, could provide additional access to firewood, free use, micro sales, and commercial timber resources. A large amount of wood products could be transported more economically to Ketchikan by truck instead of relying on the current maritime mode of transportation from MAFs.

Transportation

Two roads analyses are used extensively for this report. The Ketchikan-Misty Fiords Ranger District Roads Analysis (FS 2007b) provided an in-depth look at the maintenance level (ML) 1 and 2 roads across the District (see the definitions below). The Tongass National Forest Forest-Level Roads Analysis (FS 2003) examined the ML 3, 4, and 5 roads from the forest-level perspective. While much of this analysis is based on these documents, it is important to understand that the results of this ATM analysis will differ in some ways from the roads analyses cited. This is due to new data, which includes information gathered from scoping, changes in policy, budgets, uses, etc.

Definitions

Maintenance Levels (MLs) include Maintenance Levels 1, 2, 3, 4 and 5. The definitions for these maintenance levels are from the Forest Service Handbook 7709.58(FS 1992). The purpose of the MLs is to define the level of service provided by, and maintenance required for, a specific road or segment of road.

Level 1 is assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period must exceed 1 year. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate."

Roads receiving Level 1 maintenance may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at Level 1, they are closed to vehicular traffic, but may be open and suitable for nonmotorized uses.

It should be noted that the ML 1 level of closure is different than the one defined in the Alaska Forest Resources and Practices Act (AFRPA). Throughout this document, when road closure is discussed, it is referring to the definition above, which could fit in either the AFRPA "inactive" or "closed" definition.

Level 2 is assigned to roads open for use by high-clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either to (1) discourage or prohibit passenger cars or (2) accept or discourage high-clearance vehicles.

Level 3 is assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities.

Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users.

Level 4 is assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times.

Level 5 is assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated. The appropriate traffic management strategy is "encourage."

Forest roads are classified as National Forest System roads (NFSR) or Temporary Roads by 36 CFR 212.1(CFR 2005). The definitions and additional defining information is shown below.

National Forest System (NFS) road. "A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority."

In addition to the legal definition, NFS roads are generally required to provide long-term or intermittent motor vehicle access. These roads receive constant or intermittent use depending upon the timing of the timber harvest(s) and other activities. NFS roads form the primary transportation network in the project area.

Temporary road or trail. "A road or trail necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road or trail and that is not included in a forest transportation atlas."

In addition to the legal definition, temporary roads are intended for short-term use by the permittee or contractor and maintained for a limited time. Temporary roads are required to be decommissioned by removing culverts and bridges and restoring the natural surface drainage patterns after a timber harvest.

Road Decommissioning. "Activities that result in the stabilization and restoration of unneeded roads to a more natural state."

The term generally refers to temporary roads constructed for timber harvest or roads that are no longer needed for future management. Stream courses are restored, culverts removed, waterbars added where needed, and cut and fill slopes revegetated.

Road maintenance consists of superficial periodic repairs to an existing road surface, brushing, and cleaning and repairing drainage features. These tasks are performed to keep the roads in the safe and useful condition for which they were designed. Repairs may be done as annual maintenance.

Road reconditioning is heavier maintenance of an existing road such as culvert replacement, surface rock replacement, and subgrade repair.

Road storage is a term frequently used to describe moving a road from an ML2 or higher to an ML1 level.

Road maintenance and reconditioning consists of performing the work necessary to retain the road's traffic service level. The amount and level of maintenance and repair is dependent upon traffic management objectives and maintenance criteria.

Roads are often built and operated at a higher maintenance level during the timber sale than they are afterwards. The **operational maintenance level** is the maintenance level assigned to a road considering the immediate needs, road condition, budget constraints, and environmental concerns; in other words, it defines the level at which roads would be maintained during the timber sale. The **objective maintenance level** is the maintenance level assigned to the road after timber harvest. It considers future road management objectives, traffic needs, budget constraints, and environmental concerns.

Affected Environment

Most of the descriptions in this section are taken from the Ketchikan-Misty Fiords Ranger District Roads Analysis (FS 2007b) but have been updated to reflect the current status of the road systems.

The small road systems that are inscribed onto the islands and adjoining mainland in Southeast Alaska are unique due to their isolation. Most travel is done by water or air because of the vast undeveloped area and abundant waterways. The majority of roads are not connected to a community and originate from remote marine access facilities. There are 360.7 miles of roads under Forest Service jurisdiction on the District. About 240 miles are open. The National Forest System (NFS) roads were originally constructed for resource management and the associated administration, though they see recreational and subsistence use primarily during the spring, summer, and fall.

Revillagigedo (Revilla) Island contains most of the District roads and marine access facilities (MAFs). There are eleven MAFs on Revilla Island. Hassler and Gravina Islands each have one MAF. Revilla Island includes portions of the Misty Fiords National Monument Wilderness Area. There are number of LUDs on the District, which is mostly designated to Semi-remote Recreation and Timber Production. Timber represents the single largest land use designation on the District (28 percent of the total area), followed by Semi-remote Recreation (20 percent) and Old-growth Habitat (16 percent)

There are about 4.2 miles of ML 3 and 4 roads accessible from Ketchikan via Ward Cove, the only area where ML 3, 4, or 5 roads exist on the District (FS 2003).

The majority (98 percent) of roads on the District are ML 1 and 2. These roads were constructed to access timber harvests and to apply silvicultural applications under the silvicultural exemption of the Clean Water Act. Timber harvest and silviculture are the primary uses for these roads in the near future. ML 1 and 2 roads are addressed in the following subsection, identified by marine access facility. Motorized mixed use (highway and off-highway vehicles) is currently allowed on all non-paved NFS roads. The Motor Vehicle Use Map (MVUM) will show where motorized mixed use is acceptable.

The following is a description of NFS roads on the District by marine access facility. Figures of the existing road system for each area are located at the end of this section. MAFs represent the point of origin for these outlying road systems. They are also the point of access by which motorized vehicles use the outlying road systems.

Klu Bay MAF

Klu Bay is located on northwest Revillagigedo Island. The LUDs include Modified Landscape and Timber Production. This area is not connected to any public or private road system. There are 11.6 miles of NFS roads in this area (Table 1). All the roads on this system are currently scheduled for closure. This road system is important as a portion of it provides access to the Swan Tyee Intertie electrical transmission line. This road system serves future timber sales and silvicultural treatments. This MAF is not served by a dock or buoy.

Shrimp Bay MAF

Shrimp Bay is located on northwest Revillagigedo Island, south of Klu Bay. This is a remote area and not directly connected to public or private roads. The primary LUDs are Timber Production and Modified Landscape. Additionally, the road travels through a section of a small Old-growth Reserve. There are 12.0 miles of open NFS roads (21.9 miles total) accessed by a MAF in the northeast portion of Shrimp Bay (Table 1). This road system is important because a portion of it provides access to the Swan Tyee Intertie electrical transmission line. This road system serves future timber sales and silvicultural treatments. This MAF is not served by a dock or buoy.

Bluff Lake MAF (Neets Bay Hatchery)

Most of the roads associated with the Neets Bay Hatchery are located on State property. Primary LUDs are Timber Production and Modified Landscape. There are 1.4 miles of open (7.4 miles total)

NFS roads associated with this system (Table 1). State property connects NFS roads to Federal waters. This road system is important as a portion of it provides access to the Swan Tye Intertie electrical transmission line, although much of the road corridor is in need of maintenance. This road system is also important because it serves the State hatchery and accesses an impoundment that supports the hatchery. There are no current or reasonably foreseeable timber sales or silvicultural applications at this MAF. There is a dock that serves this MAF.

Fire Cove MAF

The Fire Cove MAF is located in Neets Bay. There are 24.6 miles of open (45.8 miles total) NFS roads (Table 1) associated with this MAF. The roads extend past Traitors Cove to the south and east. Primary LUDs are Timber Production and Modified Landscape. This road system serves future timber sales, fishery projects, and silvicultural treatments. It also receives some ATV recreational use as it has a dock at the MAF.

Southwest Neets MAF

The Southwest Neets road system is west of the Fire Cove FS roads. This area is accessible by the SW Neets MAF located in the western portion of Neets Bay. The NFS roads in this system extend to within 1 mile of Traitors Cove. Primary LUDs are timber production and modified landscape. There are 14.9 miles of open (17.1 miles total) NFS roads (Table 1) in this system. This road system does not have a dock at the MAF, and recreational use is minimal. This road system serves future timber sales and silvicultural treatments.

Margaret Bay MAF

The MAF for this system is located on National Forest System land surrounded by State land and is supported by a substantial dock for boat and airplane docking. Much of this area has a LUD of Timber Production, Modified Landscape, or Old-growth Reserve. These roads extend from the MAF in Traitors Cove south to within 1 mile of the entrance to Naha Bay and east around Margaret Lake. There are 34.7 miles of open (54.3 miles total) NFS roads (Table 1) associated with the Margaret Bay MAF. A small portion of this road system receives a high degree of recreational use associated with the Margaret Lake bear-viewing site. This road system serves current and future timber sales, wildlife, fishery, recreation, and silvicultural treatments.

Upper Carroll MAF

The Upper Carroll area is accessed by the Carroll MAF on the eastern side of Carroll Inlet. There are 15.3 miles of open (20.9 miles total) NFS roads (Table 1) associated with this MAF. Primary LUDs are Timber Production and Modified Landscape. The Southeast Alaska Transportation Plan (ADOT 2003) proposes road improvements through this area to Wrangell and the Canadian Highway system. This MAF and road system provide access to private lands, the Swan Tye Intertie electrical transmission line, and the Swan Lake hydroelectric dam. This road system serves current and future timber sales and silvicultural treatments. This MAF is not served by a dock or buoy.

Shelter Cove MAF

The Shelter Cove road system is located on the west side of Carroll Inlet. The MAF is located on the northern portion of this system. Primary LUDs are Timber Production, Modified Landscape, and Old-growth Reserve. This system includes 48.6 miles of open (51.6 miles total) NFS roads (Table 1). The Southeast Alaska Transportation Plan (ADOT 2003) proposes road improvements through this area to Wrangell and the Canadian Highway system. This road system is not connected to any other road systems, but would likely be the first road system connection with the town of Ketchikan. A portion of this road system provides access to the Swan Tye Intertie electrical transmission line.

This road system serves current and future timber sales and silvicultural treatments. The MAF and road system is supported by a dock that receives a recreational use.

Shoal Cove MAF

The Shoal Cove road system is located on the eastern side of the Carroll Inlet. The primary LUDs are Timber Production, Modified Landscape, and Old-growth Reserve. The Shoal Cove MAF is located on the western side of this system in Carroll Inlet. This system extends southeast to Thorne Arm. The Shoal Cove road system has 71.6 miles of open (94.6 miles total) NFS roads (Table 1) and also provides access to a U.S. Coast Guard facility. This road system also serves current and future timber sales and silvicultural treatments. The dock at this MAF receives a moderate amount of recreational use. This road system is unique because the recreational users keep many of the infrequently maintained roads accessible by trimming alder, clearing slumps/slides, and removing fallen logs.

Elf Point MAF

The Elf Point road system is located on the eastern side of Thorne Arm. Most of this area has a LUD of Timber Production. There are 6.0 miles of open (10.6 miles total) NFS roads in this system (Table 1). This road system serves future timber sales and silvicultural treatments. There is very little recreational use of this road system and MAF, as it is not supported by a dock.

Hassler Island

Hassler Island is surrounded by Hassler Pass to the east, Gedney Pass to the south and Behm Canal to the west and north. Hassler Island is remote and difficult to access because of the elevated MAF. Primary LUDs are Modified Landscape, Scenic Viewshed, and Old-growth Reserve. All roads associated with this system are scheduled for closure. There are 10.4 miles of closed NFS roads (Table 1) on Hassler Island. This road system serves future silvicultural treatments. Recreational use of this road system and MAF is very low due to remoteness and no docking facility.

Ward Cove

Ward Cove is the only area where NFS roads connect to the Ketchikan road system. The Ward Cove road system includes State highway, private and NFS road systems in the Ward Lake, Harriet Hunt, and Brown Mountain areas. There are 8.4 miles of open (11.6 miles total) NFS roads in this system (Table 1). Primary LUDs are Timber Production, and Special Interest Area. This road system is part of the greater Ketchikan road system and receives a high amount of recreational use. This road system serves current and future timber sales, silvicultural treatments, fisheries, wildlife, and recreational projects.

The Southeast Alaska Transportation Plan (ADOT 2003) proposes road improvements through this area up to Wrangell and the Canadian Highway system.

Vallenar Bay MAF

The Vallenar Bay road system is located on the northwest corner of Gravina Island. Most of this area is Timber Production LUD. There are no open NFS roads in this system (Table 1). This road system is available for future timber sales and silvicultural treatments. There is very little recreational use of this road system and MAF as it is not supported by a dock.

Table Transportation 1
District MAFs and Associated Forest Road Miles

MAF	ML 1 closed	ML 2 mixed use	ML 3 passenger	ML 4 passenger	OHV Trail	Totals
Bluff	6.0	1.4				7.4
Brown Mtn	1.2	4.3	1.0			6.5
Elf Point	4.6	6.0				10.6
Fire Cove	18.4	24.6	2.9			45.8
Hassler	10.4					10.4
Klu	11.6					11.6
Ketchikan	1.9	0.6	0.1	2.4		5.1
Margaret	19.6	34.7				54.3
Shelter	3.0	39.2	9.4			51.6
Shoal	23.0	71.6				94.6
Shrimp	9.9	12.0				21.9
SW Neets	2.2	14.9				17.1
Upper Carroll	5.6	15.3				20.8
Vallenar	3.0					3.0
Grand Total	120.4	224.5	13.4	2.4		360.7

Environmental Consequences

This analysis compares the maintenance costs of the alternatives. The analysis only identifies easily quantifiable maintenance costs and does not include value that is added or subtracted to various resources by the roads.

Operation and Maintenance Costs

Annual maintenance costs for ML 2 through 4 roads include drainage, surfacing, signage, roadside brushing, and random road monitoring. Drainage activities include cleaning drainage ditches and culverts. Basic annual maintenance on the District include costs for road drainage, operations, support, vegetation maintenance, and roadway surfacing and maintenance.

Table Transportation 2
Estimated Maintenance Costs in 2008 Dollars

Description	Estimated Cost*
Maintenance Level 1 (Closed)	\$15/mile/year
Maintenance Level 1 (OHV Trail)	\$135/mile/year
Maintenance Level 2 (No Community Connection)	\$168/mile/year
Maintenance Level 2 (Community Connection)	\$349/mile/year
Maintenance Level 3 (No Community Connection)	\$349/mile/year
Maintenance Level 3 (Community Connection)	\$3,016/mile/year

*The estimates for Maintenance Level 2 and 3 were taken from the Road Maintenance Units of Work from 2006 and adjusted to 2008 dollars using the standard USFS rate of 4.0% annually.

Table 1 assumptions: The cost for ML1 closed roads reflects a condition survey being performed every 5 years. The condition survey is not mandatory and is most likely to occur on random intervals associated with other management activities.

The costs of managing a motorized trail can vary greatly. For this analysis, road maintenance has been performed to limit any potential problems with the road prism prior to it becoming a motorized trail. In this case, the primary focus of keeping a road open will be brushing on an 8-year cycle.

Table Transportation 3
Roads Miles by Maintenance Level and Estimated Annual Maintenance Costs by Alternative

Maintenance Level	Alternative		
	1	2	3
ML 1 miles	114.1	255.0	215.3
ML 2 miles	219.6	97.2	100.2
ML 3 miles	12.3	0.0	0
ML 2 Community Connected miles	4.9	4.3	4.3
ML 3+ Community Connected miles	3.6	4.2	4.2
OHV Trail miles	0.0	0.0	36.7
Annual Maintenance Cost	\$55,375	\$34,264	\$39,127

In general, existing and future timber management lends primary support for keeping a road open. Closing roads increases the costs of future timber management by requiring future roadway maintenance and repair (replacement of large and small structures, removing vegetation, and waterbars, etc.) and by limiting opportunities of small-scale, specialized management. This type of management is often accomplished through salvage sales. Salvage sales are usually not large enough to support reconstructing a stored road to gain access, resulting in merchantable timber that may be lost. Closing roads also increases the costs of future silvicultural activities. Typically, a pre-commercial thin is performed 15-30 years after a unit has been harvested. Closing lengthy segments of roads reduces the mobility of the thinners and results in higher thinning costs. All these factors must be taken into consideration along with the cost analysis shown above in making a determination of the actual costs of maintaining roads.

Effects Common to all Alternatives

The alternatives have been designed to limit effects to the community-connected road systems. This was done for two reasons: 1) maintaining the available experiences of the greatest number of citizens in the Ward Cove and Brown Mountain area, and 2) funding. The formula applied to fund road maintenance is tied directly to the number of NFS road miles connected to a community.

Effects Summaries by Alternative

Effects of this project are measured by motorized accessibility, both in terms of public motorized access and administrative motorized access. On the District, these two types of access are generally compatible, except during timber sales when there are potential public safety hazards.

Alternative 1

Alternative 1 would not change road management. Road management would continue as authorized by other planning documents. In fiscal year 2007, the method of distributing maintenance funds across the Tongass changed. That change, combined with a declining road maintenance budget, was the reason the District received about \$100,000 annually before FY 2007 and about \$15,000 in FY 2007 and into the projected future. In light of these recent changes, if Alternative 1 was selected, management would continue as it has been in the post-FY 2007 pattern. The direct result of less funding for road maintenance will mean that over time, roads would brush over, thereby restricting access. The risk of culvert failures and subsequent wash-outs would also increase if catch-basins were not cleaned, which would also result in limited access.

Alternative 2

Alternative 2 makes numerous changes to road management, taking into account road system usage, access, the foreseeable budget, planned timber sales, silviculture needs, and other factors. In general, this results in closing numerous outlying (local) roads while keeping most of the collectors open. The changes to the road system would take a period of time.

While the road closures would affect road-related activities by the public, this alternative is designed in such a way as to keep most collector roads open to maximize the efficiency of the open road system for administrative activities. The annual savings in maintenance costs would be small since most of the funding is for maintaining the ML 3 and 4 roads connected to the Ketchikan road system. However, the storage practices of closing roads would provide needed maintenance for roads that would benefit streams and fisheries.

Alternative 3

Alternative 3 responds to public comments in identifying roads and trails that would be available for motorized travel. The primary difference from the transportation perspective between Alternative 2 and 3 is that the primary Upper Carroll road would be left open. Alternative 3 would incorporate motorized trails for recreation and resource management.

This alternative would keep most collector roads open to maximize the efficiency of the open road system for all users. The annual savings in maintenance costs would be small since most of the funding is for maintaining the ML 3 and 4 roads connected to the Ketchikan road system. However, the storage practices of closing roads would provide needed maintenance for roads that would benefit streams and fisheries.

Cumulative Effects

The cumulative effects of the change proposed to the transportation system on the other resources are considered in their respective resource sections or reports. The area considered for cumulative

effects on the transportation system is the project area. The project area encompasses all the road systems, including those that may one day be connected.

Transportation System Connections: The potential exists for increased connectivity and recreation through the NFS road system and non-National Forest System roads. The proposed Southeast Alaska Transportation Plan would significantly increase the connectivity of road systems in this area, making a few of the remote areas that are only accessible by boat or float plane also accessible by motorized vehicles. An increase in access to the National Forest from communities with limited roaded recreation opportunities would result in increased use.

Using the formula (Forest Service 2006) for the distribution of maintenance funds across the Tongass, the Harriet Hunt Lake to Shelter Cove connection project would dramatically increase the District road maintenance allocation. The formula places significant weight on community-connected road miles. The connection would result in an increase of about \$41,000 using the 2007 funding formula if Alternative 1 was selected. If Alternative 2 or 3 were selected, the maintenance funds would be about \$50,000. The additional funding would be used to maintain the Shelter Cove road system. The increase in funding described above does not take into account the additional road mileage associated with the Shelter Cove connection road. This is due to the fact that the new road miles will receive the correct amount of maintenance based on the Tongass formula. There will be no net gain or loss in the ability to maintain other roads as a result of the new road segment.

Overall, the Harriet Hunt Lake to Shelter Cove road connection would increase access for all users. In addition, maintenance funding will increase, allowing the FS to maintain additional road miles on the Shelter Cove road system.

Maintenance: Maintenance and reconditioning of existing National Forest System roads is an ongoing process that occurs on a periodic basis. Normally this kind of road work is determined to fit the category of routine repair and maintenance of roads that do not individually or cumulatively have a significant effect on the quality of the human environment and may be categorically excluded (FSH 1909.15, 31.12). The maintenance and reconditioning of NFS roads on the project area may occur before, during and after the project analysis. This work is done through separate service or public works contracts to reduce the backlog of deferred maintenance. Road maintenance is performed to comply with best management practices, maintain the existing infrastructure for the proposed timber sales or future harvest entries, and other National Forest management activities. The timing of this work may coincide with this project's analysis but is not part of the Proposed Action or alternatives being considered.

Maintenance of existing National Forest System roads will occur in the project area throughout the foreseeable future. Road maintenance of some type is performed periodically on most of the ML2 roads. There are no planned expenditures on ML1 roads. During closure, these roads are placed in a self-maintaining state. Problems are resolved during road closure by stabilizing slopes, adding water bars, and removing potentially problematic stream crossing structures. There may be instances where some maintenance is needed, but that should be the exception and costs should be minor.

Grading is planned for the roads connected to the community of Ketchikan. These roads receive significantly more maintenance than those in outlying areas due to amount of use they receive. These cumulative effects enhance the condition of the transportation system.

Other Projects

New NFS roads that are constructed for each sale shown below are scheduled to be closed (ML 1) at the end of the sale. Timber sales in progress may have a mixed state of open and closed NFS roads depending on the extent of progress. Actual road lengths may vary slightly once constructed, due to variations in topography, contract administration, and avoidance of environmentally sensitive areas.

Shoal Cove MAF

- Licking Creek Timber Sale – Under contract - 3.17 miles of NFS road construction
- Buckdance-Madder Timber Sale - Under contract - 4.25 miles of NFS road construction
- Mad-Buck Timber Sale - Planned - 3.74 miles of NFS road construction

Shelter Cove MAF

- Buckdance-Madder Timber Sale - Under contract - 4.96 miles of NFS road construction

Marguerite Bay MAF

- Traitors Cove Timber Sale - Planned - 2.46 miles of NFS road construction

Elf Point MAF

- Orion North Timber Sale - Planned - 6.86 miles of NFS road construction

Fire Cove MAF

- Traitors Cove Timber Sale - Planned - 2.74 miles of NFS road construction

SW Neets Bay MAF

- Traitors Cove Timber Sale - Planned - 1.94 miles of NFS road construction

Upper Carroll MAF

- Upper Carroll Timber Sale - Under contract - 10.6 miles of NFS road construction

These logging operations associated with these projects will increase the road use but not to the extent that they will have a significant effect on the existing road system. Timber sale contracts contain provisions that require the operator to maintain haul roads and post signage to alert other road users of their activity. No impact is anticipated on the transportation system due to these projects.

Wildlife

This analysis addresses wildlife and habitat concerns and effects relative to the project proposal. The primary effects to wildlife from roads are increased disturbance and mortality. Easier access to wildlife, such as that provided by a road system, generally increases the amount of hunting and trapping and therefore increases mortality rates. Some wildlife species, such as wolves and marten, are sensitive to the miles of road present in their home range (road density) because of this effect. For that reason, road density is the measurement indicator for the wildlife analysis. Occasional vehicle-animal collisions also occur, but this effect is minimal on Forest roads. Roads may increase fragmentation of the landscape (wildlife habitat) for small animals such as invertebrates, but have a minimal fragmentation effect on larger animals and birds.

Affected Environment

Wildlife analysis is often done at the Value Comparison Unit (VCU) or Wildlife Analysis Area (WAA) scale to coincide with approximate home range sizes of management indicator species. A VCU generally follows watershed boundaries (ridges) and is roughly 10,000 acres, while a WAA is composed of several VCUs. In some cases, particularly for the northern portion of Revilla Island and in the Carroll Inlet vicinity, VCU boundaries cross saltwater bays or split peninsulas into multiple VCUs.

This report analyzes road systems that cross VCU boundaries at a scale similar to a VCU. It uses established VCU boundaries where possible to encompass all roads accessible from the respective

MAF. These adjusted boundaries not only better reflect local wildlife movement patterns, but also better reflect effects to wildlife from roads since the road systems are isolated from one another (accessed from different MAFs).

Descriptions of the smaller scale (approximate VCU size) boundaries follow; each of the descriptions identifies which of the larger (WAA level) analysis boundaries it is included in.

Small-scale (VCU size) Boundary Descriptions

Hassler Island (1-A on Figure WL-1): This MAF and road system are isolated and include 7,261 acres (11.3 mi²). This system is part of VCU 7350. It is included in the North Revilla WAA.

Klu (1-B): The Klu Bay MAF road system falls within VCU 7330 and the area also includes VCU 7320. This area encompasses 17,158 acres (26.8 mi²) and is part of the North Revilla WAA level analysis.

Shrimp (1-C): The Shrimp Bay MAF and road system access the peninsula between Neets Bay and Gedney Pass. This area is 15,370 acres (24.0 mi²) and includes portions of VCUs 7330, 7350, 7360, and 7370. This area is included in the North Revilla WAA level analysis.

Fire Cove (1-D): This area covers 37,625 acres (58.8 mi²) covering portions of VCUs 7360, 7370, and 7390. The Fire Cove MAF accesses the eastern portion of the peninsula between Neets Bay and Traitors Cove and accesses the upper Traitors Creek watershed. The nearby Bluff Lake road system is included as part of this area for analysis purposes because of the similarity of habitat and the natural saddle between the northeast end of the Fire Cove road and the Bluff Lake road. This area is included in the North Revilla WAA level analysis.

Southwest Neets (1-E): This 7,413 acre (11.6 mi²) analysis area is accessed from the SW Neets MAF and includes portions of VCUs 7360 and 7380. This area encompasses the west part of the peninsula between Neets Bay and Traitors Cove. The east boundary runs from the Traitors Cove salt chuck to Rockfish Cove (coincides with the west boundary of Fire Cove system); the north, south, and east boundaries follow the shoreline. This area is included in the North Revilla WAA level analysis.

Margaret Bay (1-F): This 25,470 acre (39.8 mi²) area is accessed from the Marguerite Bay MAF and covers an area south of Traitors Cove and north of the Naha LUD II designation. The road system accesses Margaret Lake and Francis Cove. It includes all or portions of VCUs 7380, 7390, and 7400 and is included in the North Revilla WAA level analysis.

Upper Carroll (2-G): This area is 32,011 acres (50.0 mi²) and encompasses VCU 7440. This area includes the Carroll River watershed. It is part of the East Carroll Inlet WAA level analysis.

Shoal Cove (2-H): This area is 65,352 acres (102.1 mi²) and includes portions of VCUs 7460, 7530, 7560, 7570, 7580, and 7590. It includes the area east of Carroll Inlet, south of Swan Lake watershed through the peninsula between Thorne Arm and Carroll Inlet, and west of Misty Fiords Wilderness. This area is analyzed as part of the East Carroll Inlet WAA level.

Elf Point (2-I): This is a small area along east central Thorne Arm, encompassing 9,854 acres (15.4 mi²) in VCUs 7570 and 7600.

Shelter Cove (3-J): This area includes the peninsula between Carroll Inlet and George Inlet. It encompasses 59,320 acres (92.7 mi²) in portions of VCUs 7470, 7460, 7480, 7530, and 7580. This area is included in the Ketchikan/Shelter Cove WAA level analysis.

Ketchikan (3-K): This area includes the “town” road system and cover the area between George Inlet and Tongass Narrows, north to the Naha LUD II area. It encompasses 87,049 acres (136.0 mi²)

in VCUs 7480, 8642, 7490, 7500, 7510, and 7520. This area is included in the Ketchikan/Shelter Cove WAA level analysis.

Vallenar Bay (4-L): This watershed is on the north end of Gravina Island and includes an old road system that is currently not open. It coincides with VCU 7610, an area of 13,468 acres (21.0 mi²). The one existing NFS road originates at Vallenar Bay and crosses private land to access National Forest System land.

Gravina (4-M): This area includes all of Gravina Island except for the Vallenar Bay watershed (see area 4-L). It is 50,405 acres (78.8 mi²). At this point in time, there are no NFS roads within this area, but there are multiple State and private roads.

Larger-scale (WAA level) Boundary Descriptions

North Revilla (Area 1): The established WAA 510 boundary was adjusted to better use natural ecological boundaries. The analysis boundary is WAA 510, expanded to include VCU 7400 in the Francis Cove area (southwest end of the Margaret road system) but decreased to exclude Bell Island. The adjusted boundary is the same as that used in the Traitors Cove EIS. The area is 156,102 acres (243.9 mi²).

East Carroll Inlet (Area 2): This area is essentially WAA 406 but excludes the portion of west of Carroll Inlet (see the Ketchikan/Shelter Cove description). It encompasses Upper Carroll south along the east side of Carroll Inlet to Alava Point. There are large ridges along most of the eastern edge of this analysis area, dividing it from Misty Fiords Wilderness. It is 156,574 acres (244.6 mi²).

Ketchikan/Shelter Cove (Area 3): This area is 146,841 acres (229.4 mi²). It includes all of WAAs 407 and 408, and that portion of 406 west of Carroll Inlet, and that portion of 509 south of the Naha LUD II designation. There is potential for a State road connection in the future between the Ketchikan and Shelter Cove road systems, making this a logical cumulative effects boundary for the southwest portion of Revillagigedo Island. In addition, the Shelter Cove habitat is more connected to the Ketchikan area than to the east side of Carroll Inlet; there are no prominent barriers to travel for the larger wildlife species, such as high ridges or rugged terrain around the head of George Inlet, while travel across or around Carroll Inlet could be difficult.

Gravina (Area 4): This is WAA 101 and includes 63,874 acres (99.8 mi²). It encompasses the entire island.

Assumptions

Throughout this document, existing (current) condition refers to 2007. Any references to historical condition mean that timeframe before road-building occurred, which varies for different locations on the District.

Roads proposed to be placed in ML 1 (storage) are assumed to have no vehicle traffic (the term “closed” is used to describe this condition in this analysis). On-the-ground work to place roads in storage (implementation) will depend on funding and personnel constraints and may occur over multiple years. However, a road designated as ML 1 in this decision is considered “closed” to motorized vehicle traffic for this analysis. Therefore, no illegal use is considered as part of this analysis.

Some roads are proposed for conversion to OHV trails under Alternative 3; these are considered open (calculated with ML 2 or higher roads) for wildlife analysis because they provide motorized access.

Where information was known, the miles of major roads on other ownerships were included in the analysis. In cases where it was not known, the analysis states that those roads are not included.

Roads on other ownerships are assumed to be open; even though public use of these roads may not be prevalent, the private use by the land owner is assumed to affect wildlife similarly to open road for this analysis.

Road densities are calculated based on total land area, not by specific elevation categories. Most roads are below 1,500 feet elevation; if densities were calculated only on that land area below 1,500 feet elevation, numbers would be higher. Changes in road density at the overall level can be assumed to be attributed to reductions at the lower elevations since that is where the roads are located.

Environmental Consequences

Road density is currently high in some VCUs and WAAs on the District (see martin and wolf discussions). Alternative 1 (No Action) would not reduce open road density and the current concerns about road density will continue. Alternative 2 (Proposed Action) would provide the most benefit to wildlife because it would have the most reduction in open road density. Alternative 3 will also provide a decrease in open road density. All alternatives, including the No-action Alternative, could have localized impacts to wildlife through disturbance from motorized vehicle use, but these impacts are expected to be minimal and short-term. This type of temporary disturbance from passing vehicles and OHVs already exists along the roads in the analysis area.

The ATM project will have no effect on any federally-designated Threatened or Endangered bird or animal species, including humpback whales and Steller sea lions. The project will have no impact to any Region 10 Sensitive wildlife species. The Biological Assessment/Biological Evaluation (BA/BE) is located in the project planning record.

All management indicator species (MIS) for the Tongass National Forest are associated with old-growth forest in some way (Forest Plan FEIS). This project does not propose any timber harvest, so no habitat loss will occur for any MIS as a result of the project. Road density can affect wolves and marten by exposing these species to increased trapping pressure, so closing roads could indirectly increase habitat suitability for species negatively affected by road density. However, no mortality concerns associated with road density have been raised by ADF&G on the Ketchikan-Misty Fiords Ranger District. All alternatives are consistent with Forest Plan Standards and Guidelines.

Management Indicator Species

Management indicator species (MIS) are used as a tool to help determine the possible effects of management activities. The Forest Plan FEIS identified 13 MIS for the Tongass. All of the MIS use productive old growth (POG) forests, and most of the highly important and moderately important habitats for the MIS are provided by POG. Old-growth Reserves (OGRs) and other natural-setting LUDs provide habitat protection for all species. In addition, standards and guidelines provide species specific requirements for some species (Forest Plan pages 4-89 through 4-100).

The following management indicator species are identified in the Forest Plan:

Brown bear	Hairy woodpecker
Brown creeper	Red squirrel
Bald eagle	Sitka black-tailed deer
Black bear	Vancouver Canada goose
Red-breasted sapsucker	American marten
River otter	Alexander Archipelago wolf
Mountain goat	

No old-growth habitat will be altered by this project, so no habitat loss will occur for any MIS. Alexander Archipelago wolf and American marten are the primary species that could be affected by

this project because of their sensitivity to trapping along roads. Roads allow additional access into areas inhabited by these species and may contribute to increased mortality. However, Alaska Department of Fish and Game (ADF&G) has not raised specific concerns regarding excess trapping associated with roads for any of the roads in this analysis.

The following species were not analyzed for the ATM.

Brown bears: Brown bears range from sea level to alpine, but often concentrate along low-elevation salmon streams in late summer. Although incidental occurrences of brown bears have occasionally been reported on Revillagigedo Island, they are not known to inhabit the project area regularly. This species has not been reported on Gravina or Hassler Islands. For this reason, brown bears are not considered further for this project.

Black bears: This abundant species uses a wide variety of habitats from sealevel to alpine throughout the project area. No new road construction is proposed and black bears are expected to be minimally affected by road closures. Access for black bear hunting is often by boat (beach hunting in the spring), so road closures will have minimal impact to bear hunters.

Mountain goats: Mountain goats inhabit alpine and subalpine areas on the mainland portions of the Tongass and have also been introduced to several of the islands, including Revillagigedo. The majority of mountain goat hunting takes place on the mainland by floatplane access (Misty Fiords Wilderness) or in the Deer Mountain drawing permit area from access by the Ketchikan road system; these areas will not be changed by this project. The Shoal Cove and Upper Carroll road systems may provide a closer starting point for walk-in mountain goat hunting, but changes in maintenance levels should not directly affect the goats or their habitat.

Brown creeper, red-breasted sapsucker, hairy woodpecker, and red squirrels: These species inhabit productive forest. In addition, none are species regularly hunted or used by people. Therefore, road access has no to minimal impact to these species and they are not considered further.

Bald eagles: This species uses the shoreline (beach fringe) across the District for nesting, roosting, perching, and feeding. Blasting and repeated helicopter flights are a concern near eagle nests. Road closure activities are not anticipated to involve blasting or repeated helicopter use. There should be no effects to bald eagles and therefore they are not considered further.

A Memorandum of Understanding (MOU) between the U.S. Fish and Wildlife Service (USFWS) and the Forest Service provides protection for nesting bald eagles by providing an activity buffer around nest sites. Previously, a 330-foot buffer for blasting activities and a ¼ mile buffer for repeated helicopter flights around active nests was required. This MOU is currently undergoing a review and renewal process, but verbal direction from the Regional Office indicates that we should continue to follow these guidelines until a new agreement is reached. Although requirements may change before the implementation of this project occurs, they are expected to be similar to or more strict than to those currently followed; any and all new requirements will be followed during implementation.

Vancouver Canada goose: Geese use estuaries and forested wetlands across the Tongass National Forest. Waterfowl habitat is protected by Forest Plan Standards and Guidelines. Most roads are not located in important wetland habitats and road closures are expected to have no to minimal impact to geese populations or habitat.

River otters: River otters in Southeast Alaska primarily use forested beach fringe with some use along Class I (anadromous) and II (resident fish) streams/lakes. Habitat is protected by Forest Plan Standards and Guidelines. Trapping access usually occurs by boat. Most roads are not located

within the beach fringe important to otters and road closures should have minimal impact to otter habitat and populations.

Sitka black-tailed deer: The primary concern for deer is a loss of habitat capability, primarily from timber harvest in important winter habitat. Especially important to deer in Southeast Alaska is the thermal cover and snow interception provided by old-growth stands containing forage in the winter months. This project will not affect winter habitat because no canopy removal is proposed. Roads do not directly affect deer or their habitat, but do provide increased access for hunting of deer. Roads proposed to be closed by this project will still be available for use by non-motorized means. Deer is a primary subsistence species across Southeast Alaska; subsistence is addressed in its own section in this EA and in a resource report in the planning record.

Alexander Archipelago Wolf

Wolves use a variety of habitats but depend on areas where there is an adequate supply of prey. The Alexander Archipelago wolf is dependent on deer as its major prey species. Maintenance of long-term deer habitat capability is the most important factor in keeping a healthy wolf population (Person et. al. 1996, page 27). Other important components in sustaining wolf populations include maintaining core habitats with low road densities and keeping harvest rates at a sustainable level (Forest Plan FEIS).

This project does not propose to change deer habitat capability and will therefore have little to no effect on wolves. The analysis, however, does consider road density as a factor in wolf habitat suitability. The large home range of this species requires a larger scale for analysis to be useful. Therefore, the WAA scale was chosen for the wolf analysis. The four WAA-level analysis areas were described near the beginning of this report.

Wolf harvest (hunting and trapping) is greatest along shorelines and roads in Southeast Alaska (Person et. al. 1996). Those roads connected to a community are of greatest concern because easy access by people leads to wolf mortality. The Forest Plan suggests striving for open road densities between 0.7 and 1.0 mile per square mile (miles/mile²) where wolf mortality is a concern; wolf mortality concerns have not been identified for any specific area in this analysis.

All of the road systems in this analysis, with the exception of Ketchikan, are isolated from communities and hunting and trapping pressure is less than if the roads were connected to a community. The trapping season is centered in the winter months. Snow conditions could limit drivable access because the roads do not receive regular maintenance during the winter and winter weather could limit access to the WAA. The community of Ketchikan is 1-2 hours by boat from the roads systems under analysis, depending on weather conditions and the road system location.

Because total road density will not change under this project, open road density numbers are presented for comparison between alternatives in Table Wildlife 1. All numbers are given in miles of road/square mile of land. “Closed” means road objective of ML 1; “open” means a road objective of ML 2 or greater, or designated as an OHV Trail. The road density information in the table below includes roads on all ownerships (where known) and the total land base acreage on all ownerships; roads on non-National Forest System lands are assumed to be open.

Alternatives 2 and 3 both would reduce open road density and be beneficial for wolves. Alternative 2 has the greatest reduction in open road density across all areas of the District.

Table Wildlife 1
Road Density (Miles per Square Mile) by Alternative by WAA Scale

Area	Total Density	Alt 1 Open ^a	Alt 2 Open ^a	Alt 3 Open ^a
North Revilla	0.69	0.37	0.14	0.22
East Carroll Inlet	0.58	0.45	0.15	0.22
Ketchikan/Shelter Cove	1.13	1.10	1.00	1.02
Gravina	0.22	0.20	0.20	0.20

a: open means ML 2, 3, or 4 or designated as OHV Trail

American Marten

High-volume old growth below 1,500 feet in elevation provides the highest-quality habitat for marten, with beach fringe and riparian areas the most important (Forest Plan FEIS). American marten are an important fur-bearer and a popular trapping species. Marten are easily trapped and can be over-harvested, especially in areas where roads provide easy access for trappers. Habitat suitability for marten begins to decline when road density reaches 0.2 mile/mile² and decreases sharply when road density reaches 0.6 mile/mile² (Suring et. al. 1992).

Road density numbers for marten were calculated at the VCU level. These areas were described near the beginning of this report. These smaller areas are considered more consistent with the assumption that well-distributed marten populations are generally considered to occur in each VCU or approximately every 10,000 acres (Forest Plan FEIS).

Because total road density will not change under this project, open road density numbers are presented for comparison between alternatives in Table Wildlife 2. All numbers are given in miles of road/square mile of land. “Closed” means road objective of ML 1; “open” means a road objective of ML 2 or greater, or designated as an OHV Trail. The road density information in the table below includes roads on all ownerships (where known) and the total land base acreage on all ownerships; roads on non-National Forest System lands are assumed to be open.

Alternatives 2 and 3 both would reduce open road density and be beneficial for wolves. Alternative 2 is preferred from a wildlife standpoint because it has the greater reduction in open road density across all areas of the District.

Table Wildlife 2

Road Density (Miles per Square Mile) by Alternative by VCU Scale

Area	Total Density	Alt 1 Open ^a	Alt 2 Open ^a	Alt 3 Open ^a
Hassler	0.92	0	0	0
Klu	0.43	0	0	0
Shrimp	0.91	0.50	0.46	0.46
Fire Cove/Bluff	0.92	0.51	0.17	0.21
SW Neets	1.47	1.29	0	0.60
Margaret	1.35	0.86	0.36	0.57
Upper Carroll	0.42	0.31	0	0.15
Shoal Cove	1.09	0.87	0.36	0.41
Elf Point	0.69	0.39	0	0.32
Shelter Cove	1.46	1.43	1.16	1.21
Ketchikan	0.91	0.89	0.89	0.89
Vallenar	0.09	0	0	0
Gravina	0.26	0.26	0.26	0.26

a: open means ML 2, 3, or 4 or designated as OHV Trail

Migratory Birds

The Migratory Bird Treaty Act of 1918 (amended in 1936 and 1972) prohibits the taking of migratory birds, unless authorized by the Secretary of Interior. Migratory bird treaties were developed between the United States, Great Britain, Mexico, and Japan. The law provides the primary mechanism to regulate waterfowl hunting seasons and bag limits, but also includes other species.

Over 100 species of birds migrate to Alaska from the lower 48 states to breed, nest, and fledge their young. Many of these birds summer in interior or northern Alaska, and only migrate through the Ketchikan-Misty Fjords Ranger District on the way to and from their breeding grounds. Most migratory birds that breed on the District nest in forested areas (coniferous or mixed coniferous/deciduous), although some nest activity does occur in shrub thickets or other habitat types. Shrub thicket is the habitat type expected to occur most often along closed roads and that may be affected by road closure activities (blading, cleaning ditches, pulling culverts, etc.). Only two of the neotropical migrants on the Tongass National Forest list are expected to breed in shrub thickets on the District (Forest Service, unpublished). Another 11 species (7 expected on the District) use shrub thickets as secondary habitat, but nesting generally takes place in a different habitat type.

Nesting birds that are repeatedly disturbed by people in proximity to the nest could abandon the effort. The activities associated with closing roads may cause a few nesting individuals to abandon efforts for that season, but are not expected to negatively impact migratory birds in the long-term.

Introduced Species

Introduced (non-native) species can compete with, prey on, or introduce diseases to native species. Roads, particularly those connected to communities, provide an opportunity for non-native species to be introduced.

In the immediate Ketchikan vicinity, Pacific chorus frogs and an unknown turtle species have been confirmed by District biologists. Pacific chorus frogs are known to have spread in the watershed in which they were introduced, but it has not yet been determined if they are impacting native species in any way. At this time, only a single turtle has been confirmed. There is also potential for other species, but none have been confirmed.

No new roads are proposed in this project so no new opportunities for introductions will be created. Closing roads as proposed in Alternatives 2 and 3 could decrease the risk of new introductions. However, public education is likely to have a greater impact on reducing the number of introductions than road closures. In addition, the roads that are known to have been used for introductions are scheduled to remain open. Therefore, very little effect is expected as a result of this project under any alternative.

Cumulative Effects

There is potential for a future road connection between the Ketchikan and the Shelter Cove road systems. At this time, a final route has not been selected for the proposed road and the planned date of construction is speculative. Under all alternatives, the mainline road at Shelter Cove that would likely be used to tie the two road systems together near the head of George Inlet will be left open. This proposed road connection would increase both the total and open road density for this area (less than 0.1 mile/square mile) and provide easy access to what is now a remote road system; an increase in traffic to the Shelter Cove road system is likely if the proposed connection is built.

Wildlife

Both marten and wolves are susceptible to trapping pressure from roads, especially roads connected to a community. Currently, the Shelter Cove road system is accessible by water or air only. The proposed connection could lead to an increase in hunting and trapping in that area. Trapping and hunting seasons as well as bag limits are regulated by the State of Alaska and are therefore outside the scope of this project's decision.

At this time, there have been no concerns raised over current trapping levels for these species in this area and it is difficult to estimate how much of an increase could occur in the future if the road connection is built, because many factors are involved. For example, the trapping season is centered in the winter months, and snow levels could limit or prevent access even if the proposed connection is built, so the level of access will vary from year to year depending on weather conditions. Other factors include the number of traps and trappers, trapping success rate, animal population factors, trapping regulations, and fur prices.

Alternative 2 would close the most roads along the Shelter Cove system (about 18 miles of currently open and drivable roads) and would provide the most benefit to wildlife, especially if the Ketchikan-Shelter Cove road connection is built. Alternative 3 would close about 14 miles of currently open road so would also provide some benefit to wildlife, Alternative 1 would leave conditions unchanged from the present and could have potentially negative effects in the future if the road connection goes forward.

Mitigation and Monitoring

Aquatics

Periodically survey closed roads during high-precipitation seasons to assess if waterbars and structural removal was effective.

Botany

Road closure activities involving ground disturbance should be reviewed by a qualified botanist or ecologist prior to implementation. If populations of rare or sensitive species are identified during project planning or implementation, site-specific mitigation measures should be implemented to protect these populations.

Other Information

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Public and Tribal Government Involvement

- 10/04/07 – Letter inviting consultation on the project was sent to Ketchikan Indian Community, Organized Village of Saxman, and Metlakatla Indian Community
- 01/11/08 - Letter inviting consultation on the project and scoping notice was sent to Ketchikan Indian Community, Organized Village of Saxman, and Metlakatla Indian Community
- 01/11/08 – Scoping Notice sent to scoping mail list
- 01/16/08 – Legal Notice of intent to prepare the environmental analysis and invitation to the January 24, 2008 public meeting published in the *Ketchikan Daily News*
- 01/16/08 - Display ad of intent to prepare the environmental analysis and invitation to the January 24, 2008 public meeting published in the *Ketchikan Daily News*

- 01/19/08 - Display ad of intent to prepare the environmental analysis and invitation to the January 24, 2008 public meeting published in the *Ketchikan Daily News*
- 01/22/08 - *Ketchikan Daily News* front page story on ATM EA
- 01/24/08 – Public Meeting at the Southeast Alaska Discovery Center
- 01/28/08 - *Ketchikan Daily News* front page story on ATM EA
- 02/13/08 - Presentation on the ATM EA before the Ketchikan Chamber of Commerce
- 03/25/08 - Letter to scoping mail list and people who commented on the project inviting participation at an April 10, 2008 public meeting to review new Alternative 3
- 03/29/08 - Display ad inviting the public to participate in the April 10, 2008 public meeting to review the new Alternative 3
- 04/02/08 - Display ad inviting the public to participate in the April 10, 2008 public meeting to review the new Alternative 3
- 04/10/08 – Public meeting at the Southeast Alaska Discovery Center
- 06/03/04 - Letter inviting participation in a subsistence hearing was sent to Ketchikan Indian Community, Organized Village of Saxman, and Metlakatla Indian Community
- 06/07/08 - Display ad inviting the public to participate in a subsistence hearing in the ATM EA
- 06/14/08 - Display ad inviting the public to participate in a subsistence hearing in the ATM EA
- 06/18/08 - Subsistence hearing

Preparers

Linda Pulliam	ID Team Leader	Martin Stanford	Heritage Resources
James Llanos	GIS	Matt Boisseau	Scenery
Angela Coleman	Aquatics	Cathy Tighe	Wildlife
Matt Walker	Recreation	Tom Heutte	Botany
Quentin Smith	Transportation	Tim Piazza	Timber
Pat Haley	Silviculture	Darin Silkworth	Soils
Sandy Powers	Writer Editor		

Appendix A – Road Management Detail

The following table provides the details of the road management in the project area. The recommended closure strategy provides a means to judge the effects of individual road closures with administrative access. Or in the case of motorized trails, it describes the ease of recreational access.

The 1A closure category refers to a strategy of providing environmental protection to critical resources in the form of erosion control while allowing leaving the road as passable as possible. This usually results in adding drivable waterbars to the road surface on steep grades. Administrative use with high-clearance vehicles and OHVs would be possible until vegetation choked out the road. Access with a bicycle is only a little more difficult than a typical NFS road.

The 1B closure category goes beyond the 1A category by removing some/all structures that cross streams sensitive to disturbance. Drivable waterbars would be added to the road surface on steep grades. Administrative use with an OHV would be possible until vegetation choked out the road. Access with a bicycle is difficult where drainage structures have been removed.

The 1C closure category would remove all drainage structures and add waterbars to the road surface on steep grades. Administrative access with a motorized vehicle is not possible. Access with a bicycle is very difficult.

Table A1
Description of the Alternatives and the Effects on Transportation.

Road Number	Road System (MAF Name)	Beginning Mile Post	Ending Mile Post	Miles	OPML			Recommend Closure Category
					Alt 1	Alt 2	Alt 3	
8000000	Bluff	45.26	46.59	1.33	2	1	1	1A
8400000	Bluff	60.40	63.87	3.47	1	1	1	1C
8000660	Bluff	0.00	1.31	1.31	1	1	1	1C
8000668	Bluff	0.00	0.07	0.07	1	1	1	1B
8400000	Elf Point	9.70	13.23	3.53	2	1	1	1C
8400000	Elf Point	13.23	15.18	1.91	2	1	T	1B
8400140	Elf Point	0.00	0.53	0.53	2	1	T	1B
8400141	Elf Point	0.00	0.06	0.06	2	1	1	1C
8400150	Elf Point	0.00	1.21	1.21	1	1	T	1C
8400150	Elf Point	1.21	2.47	1.26	1	1	T	1B
8410000	Elf Point	0.00	0.57	0.57	1	1	1	1C
8415000	Elf Point	0.00	1.63	1.63	1	1	1	1C
8000000	Fire Cove	28.67	30.20	1.53	1	1	1	1C
8000000	Fire Cove	30.20	33.03	2.83	2	2	2	2
8000000	Fire Cove	33.03	34.10	1.07	2	1	T	1B

Road Number	Road System (MAF Name)	Beginning Mile Post	Ending Mile Post	Miles	OPML			Recommend Closure Category
					Alt 1	Alt 2	Alt 3	
8000000	Fire Cove	34.10	34.80	0.70	2	1	1	1B
8000585	Fire Cove	0.00	0.76	0.76	1	1	1	1B
8000586	Fire Cove	0.00	0.63	0.63	1	1	1	1A
8000600	Fire Cove	0.00	1.70	1.70	1	1	1	1B
8000610	Fire Cove	0.00	0.36	0.36	1	1	1	1B
8000620	Fire Cove	0.00	0.58	0.58	1	1	1	1C
8000630	Fire Cove	0.00	1.24	1.24	1	1	1	1B
8050000	Fire Cove	0.00	1.82	1.82	2	2	2	2
8050000	Fire Cove	1.82	4.79	2.97	2	1	1	1C
8050100	Fire Cove	0.00	0.53	0.53	2	1	1	1B
8050100	Fire Cove	0.53	1.89	1.36	1	1	1	1B
8050100	Fire Cove	1.89	2.99	1.10	1	1	1	1C
8050105	Fire Cove	0.00	0.25	0.25	2	1	1	1C
8050110	Fire Cove	0.00	1.01	1.01	1	1	1	1C
8050112	Fire Cove	0.00	0.38	0.38	1	1	1	1C
8050200	Fire Cove	0.00	1.49	1.49	3	1	1	1B
8050200	Fire Cove	1.49	2.89	1.40	3	1	1	1C
8050210	Fire Cove	0.00	2.21	2.21	1	1	1	1B
8050230	Fire Cove	0.00	1.04	0.82	1	1	1	1C
8050400	Fire Cove	0.00	0.49	0.49	1	1	1	1C
8060000	Fire Cove	0.00	5.19	0.25	2	2	2	2
8060010	Fire Cove	0.00	0.85	0.85	2	1	1	1C
8060050	Fire Cove	0.00	0.70	0.70	2	1	1	1B
8060050	Fire Cove	0.70	1.22	0.52	2	1	1	1C
8060051	Fire Cove	0.00	0.17	0.17	1	1	1	1C
8060100	Fire Cove	0.00	0.37	0.37	2	1	1	1B
8060100	Fire Cove	0.37	1.51	1.14	2	1	1	1C
8060200	Fire Cove	0.00	3.07	3.07	2	1	1	1A
8060200	Fire Cove	3.07	3.51	0.44	2	1	1	1C
8060210	Fire Cove	0.00	0.60	0.60	1	1	1	1C
8060220	Fire Cove	0.00	1.35	1.35	2	1	1	1B

Road Number	Road System (MAF Name)	Beginning Mile Post	Ending Mile Post	Miles	OPML			Recommend Closure Category
					Alt 1	Alt 2	Alt 3	
8060220	Fire Cove	1.35	2.14	0.79	2	1	1	1C
8060224	Fire Cove	0.00	0.30	0.30	1	1	1	1A
8060235	Fire Cove	0.00	0.13	0.13	1	1	1	1A
8060250	Fire Cove	0.00	0.64	0.64	1	1	1	1C
8060300	Fire Cove	0.00	0.30	0.30	1	1	1	1C
8060301	Fire Cove	0.00	0.67	0.67	1	1	1	1C
8060360	Fire Cove	0.00	0.16	0.16	1	1	1	1A
8060400	Fire Cove	0.00	0.28	0.28	1	1	1	1C
8460000	Hassler	0.00	0.11	0.11	1	1	1	1A
8460000	Hassler	0.11	5.44	5.33	1	1	1	1C
8460100	Hassler	0.00	1.00	1.00	1	1	1	1C
8460110	Hassler	0.00	0.37	0.37	1	1	1	1C
8460300	Hassler	0.00	0.75	0.75	1	1	1	1C
8460320	Hassler	0.00	0.07	0.07	1	1	1	1C
8460400	Hassler	0.00	1.21	1.21	1	1	1	1C
8460500	Hassler	0.00	0.65	0.65	1	1	1	1C
8460510	Hassler	0.00	0.19	0.19	1	1	1	1C
8460600	Hassler	0.00	0.12	0.12	1	1	1	1C
8460700	Hassler	0.00	0.16	0.16	1	1	1	1C
8460800	Hassler	0.00	0.37	0.37	1	1	1	1C
8460900	Hassler	0.00	0.22	0.22	1	1	1	1C
8480000	Klu	0.00	2.96	2.96	1	1	1	1A
8480629	Klu	0.00	2.01	2.01	1	1	1	1A
8480630	Klu	0.00	0.26	0.26	1	1	1	1B
8480630	Klu	0.26	1.39	1.39	1	1	1	1C
8480640	Klu	0.00	2.64	2.64	1	1	1	1B
8480644	Klu	0.00	0.29	0.29	1	1	1	1C
8480645	Klu	0.00	0.24	0.24	1	1	1	1C
8480646	Klu	0.00	0.58	0.58	1	1	1	1C
8480649	Klu	0.00	0.25	0.25	1	1	1	1C
8480650	Klu	0.00	0.90	0.90	1	1	1	1B

Road Number	Road System (MAF Name)	Beginning Mile Post	Ending Mile Post	Miles	OPML			Recommend Closure Category
					Alt 1	Alt 2	Alt 3	
8480655	Klu	0.00	0.11	0.11	1	1	1	1C
8000000	Margaret	18.50	18.95	0.45	2	1	1	1C
8000000	Margaret	18.95	22.80	3.85	2	2	2	2
8000000	Margaret	22.80	25.56	2.76	2	1	T	1A
8000000	Margaret	25.56	26.30	0.74	2	1	1	1C
8000445	Margaret	0.00	0.52	0.52	2	1	1	1C
8000460	Margaret	0.00	1.88	1.88	1	1	1	1A
8000460	Margaret	1.88	2.40	0.52	1	1	1	1C
8000461	Margaret	0.00	0.54	0.54	1	1	1	1C
8000463	Margaret	0.00	0.21	0.21	1	1	1	1C
8000464	Margaret	0.00	0.77	0.77	1	1	1	1C
8000470	Margaret	0.00	4.40	4.40	D	1	1	1C
8000495	Margaret	0.00	0.61	0.61	1	2	2	2
8000495	Margaret	0.61	0.62	0.01	2	2	2	2
8000497	Margaret	0.00	0.56	0.56	2	1	1	1C
8000500	Margaret	0.00	3.04	3.04	2	1	T	1B
8040000	Margaret	0.00	8.51	8.51	2	2	2	2
8040000	Margaret	8.51	10.07	1.56	2	1	1	1C
8040100	Margaret	0.00	2.18	2.18	2	1	1	1C
8040200	Margaret	0.00	1.08	1.08	2	1	1	1B
8040200	Margaret	1.08	5.20	4.12	2	1	1	1B
8040205	Margaret	0.00	0.48	0.48	2	1	1	1C
8040210	Margaret	0.00	0.65	0.65	2	1	1	1C
8040220	Margaret	0.00	0.56	0.56	2	1	1	1C
8040300	Margaret	0.00	1.61	1.61	1	1	T	1A
8040300	Margaret	1.61	2.47	0.86	1	1	1	1A
8040310	Margaret	0.00	1.25	1.25	1	1	T	1C
8040400	Margaret	0.00	0.37	0.37	1	1	1	1B
8040400	Margaret	0.37	0.93	0.56	1	1	1	1C
8040440	Margaret	0.00	0.30	0.30	1	1	1	1A
8040460	Margaret	0.00	0.28	0.28	1	1	1	1A

Road Number	Road System (MAF Name)	Beginning Mile Post	Ending Mile Post	Miles	OPML			Recommend Closure Category
					Alt 1	Alt 2	Alt 3	
8040500	Margaret	0.00	1.65	1.65	1	1	1	1C
8040600	Margaret	0.00	1.33	1.33	1	1	1	1A
8040600	Margaret	1.33	2.44	1.11	1	1	1	1C
8040700	Margaret	0.00	0.38	0.38	2	2	2	2
8040700	Margaret	0.38	1.09	0.71	1	1	1	1A
8040700	Margaret	1.09	2.23	1.14	1	1	1	1C
8300000	Shelter	20.29	12.00	8.29	3	2	2	2
8300250	Shelter	0.00	0.41	0.41	1	1	1	1C
8300260	Shelter	0.00	0.35	0.35	1	1	1	1C
8300261	Shelter	0.00	0.12	0.12	1	1	1	1C
8300300	Shelter	0.00	1.83	1.83	2	1	1	1B
8300340	Shelter	0.00	1.15	1.15	2	1	1	1C
8300360	Shelter	0.00	0.41	0.41	1	1	1	1C
8330000	Shelter	0.00	4.84	4.84	2	2	2	2
8330000	Shelter	4.84	5.13	0.29	1	1	1	1C
8330000_4.50L	Shelter	0.00	0.21	0.21	1	1	1	1A
8330020	Shelter	0.00	0.61	0.61	2	1	1	1C
8330400	Shelter	0.00	0.63	0.15	2	1	1	1B
8333000	Shelter	0.00	0.23	0.10	2	1	1	1A
8333100	Shelter	0.00	0.82	0.82	2	1	1	1A
8333200	Shelter	0.00	0.97	0.97	2	1	1	1A
8337000	Shelter	0.00	3.34	3.34	2	1	T	1A
8337000	Shelter	3.34	4.60	1.46	2	1	T	1B
8337100	Shelter	0.00	0.89	0.89	2	1	1	1C
8337500	Shelter	0.00	0.64	0.64	2	1	1	1C
8337600	Shelter	0.00	0.34	0.34	2	1	1	1C
8337650	Shelter	0.00	1.24	1.24	2	2	2	2
8340000	Shelter	0.00	0.46	0.46	3	2	2	2
8340000	Shelter	0.46	11.93	11.47	2	2	2	2
83400200	Shelter	0.00	0.61	0.61	2	1	1	1A
83400220	Shelter	0.00	0.18	0.18	2	1	1	1A

Road Number	Road System (MAF Name)	Beginning Mile Post	Ending Mile Post	Miles	OPML			Recommend Closure Category
					Alt 1	Alt 2	Alt 3	
83400230	Shelter	0.00	0.27	0.27	2	1	1	1A
83400240	Shelter	0.00	0.24	0.24	2	1	1	1A
83400295	Shelter	0.00	0.13	0.13	2	1	1	1A
83400400	Shelter	0.00	0.83	0.83	2	1	1	1A
83400600	Shelter	0.00	0.33	0.33	2	1	1	1A
83400700	Shelter	0.00	0.71	0.71	2	1	1	1A
83400800	Shelter	0.00	0.24	0.24	2	1	1	1A
8340100	Shelter	0.00	0.57	0.57	3	2	2	2
8340105	Shelter	0.00	0.08	0.08	2	2	2	2
8340160	Shelter	0.00	0.90	0.90	2	1	1	1C
8340161	Shelter	0.00	0.15	0.15	1	1	1	1C
8340162	Shelter	0.00	0.09	0.09	1	1	1	1C
8340200	Shelter	0.00	1.03	1.03	2	1	1	1B
8340295	Shelter	0.00	0.04	0.04	2	1	1	1A
8340400	Shelter	0.00	1.27	1.27	1	1	1	1B
8340700	Shelter	0.00	0.59	0.59	2	1	1	1B
8340900	Shelter	0.00	0.99	0.89	2	1	1	1C
8347000	Shelter	0.00	0.74	0.74	2	1	1	1C
8400000	Shoal	23.60	27.32	3.72	2	1	T	1A
8400000	Shoal	27.32	37.93	10.61	2	2	2	2
8400280	Shoal	0.00	0.16	0.16	2	1	1	1C
8400280	Shoal	0.16	2.21	1.05	1	1	1	1C
8400300	Shoal	0.00	0.61	0.61	1	1	1	1C
8400340	Shoal	0.00	0.25	0.25	2	1	1	1C
8400360	Shoal	0.00	0.68	0.68	2	1	1	1A
8400400	Shoal	0.00	1.44	1.44	2	1	1	1C
8400420	Shoal	0.00	1.44	1.44	2	2	2	2
8400431	Shoal	0.00	1.02	1.02	2	1	1	1C
8400440	Shoal	0.00	0.91	0.91	2	2	1	1A
8400440	Shoal	0.91	1.73	1.73	2	1	1	1A
8400441	Shoal	0.00	0.81	0.81	2	1	1	1A

Road Number	Road System (MAF Name)	Beginning Mile Post	Ending Mile Post	Miles	OPML			Recommend Closure Category
					Alt 1	Alt 2	Alt 3	
8400443	Shoal	0.00	0.69	0.69	1	1	1	1C
8400445f	Shoal	0.00	0.13	0.13	2	1	1	1A
8400450	Shoal	0.00	1.30	1.30	1	2	1	1B
8400450	Shoal	1.30	2.50	1.20	1	2	1	1B
8400451	Shoal	0.00	0.66	0.66	2	1	1	1A
8400452	Shoal	0.00	0.83	0.83	1	1	1	1B
8400460	Shoal	0.00	0.44	0.44	1	1	1	1C
8400470	Shoal	0.00	0.43	0.43	2	1	1	1A
8400480	Shoal	0.00	0.70	0.70	2	1	1	1A
8430000	Shoal	0.00	8.35	8.35	2	2	2	2
8430000	Shoal	8.35	13.65	5.30	1	1	1	1C
8430050	Shoal	0.00	0.86	0.86	2	1	1	1B
8430060	Shoal	0.00	0.48	0.48	2	1	1	1A
8430065	Shoal	0.00	0.09	0.09	2	1	1	1A
8430200	Shoal	0.00	2.24	2.24	2	1	1	1A
8430297	Shoal	0.00	0.33	0.33	2	1	1	1C
8430298	Shoal	0.00	0.45	0.45	2	1	1	1C
8430299	Shoal	0.00	0.26	0.26	2	1	1	1A
8430450	Shoal	0.00	0.90	0.90	1	1	1	1C
8430500	Shoal	0.00	1.66	1.66	1	1	1	1C
8430550	Shoal	0.00	0.59	0.59	2	1	1	1C
8430553	Shoal	0.00	0.21	0.21	2	1	1	1C
8430600	Shoal	0.00	0.75	0.75	1	1	1	1C
8435000	Shoal	0.00	2.93	2.93	2	1	1	1B
8435050	Shoal	0.00	0.49	0.49	1	1	1	1C
8435070	Shoal	0.00	0.10	0.10	2	1	1	1B
8435070	Shoal	0.00	0.75	0.65	D	1	1	1B
8435100	Shoal	0.00	0.26	0.26	1	1	1	1C
8435150	Shoal	0.00	0.28	0.28	1	1	1	1C
8435180	Shoal	0.00	0.35	0.35	1	1	1	1C
8440000	Shoal	0.00	3.72	3.72	2	2	2	2

Road Number	Road System (MAF Name)	Beginning Mile Post	Ending Mile Post	Miles	OPML			Recommend Closure Category
					Alt 1	Alt 2	Alt 3	
8440000	Shoal	3.72	3.89	0.18	2	1	1	1C
8440100	Shoal	0.00	2.00	2.00	1	1	1	1C
8440110	Shoal	0.00	1.07	1.07	2	1	1	1A
8440200	Shoal	0.00	0.42	0.42	1	1	1	1C
8442000	Shoal	0.00	1.01	1.01	2	2	1	1A
8442000	Shoal	1.01	3.94	2.93	2	1	1	1C
8442100	Shoal	0.00	1.35	1.35	2	1	1	1B
8444000	Shoal	0.00	3.15	3.15	2	2	2	2
8444000	Shoal	0.00	6.00	2.85	2	1	1	1C
8444050	Shoal	0.00	1.06	1.06	1	1	1	1C
8444051	Shoal	0.00	0.32	0.32	2	1	1	1A
8444060	Shoal	0.00	0.72	0.72	2	1	1	1A
8444100	Shoal	0.00	0.71	0.71	2	1	1	1C
8444200	Shoal	0.00	0.68	0.68	2	1	1	1A
8446000	Shoal	0.00	2.75	2.75	2	2	2	2
8446000	Shoal	2.75	8.03	5.28	2	1	T	1A
8446100	Shoal	0.00	0.93	0.93	1	1	1	1C
8446150	Shoal	0.00	0.49	0.49	2	1	1	1A
8446200	Shoal	0.00	1.08	1.08	2	1	1	1C
8446400	Shoal	0.00	1.00	1.00	2	1	1	1B
8000000	Shrimp	44.20	44.46	0.26	2	1	1	1C
8000000	Shrimp	44.46	44.85	0.39	1	1	1	1A
8000000	Shrimp	44.85	45.26	0.41	2	2	2	2
8000000	Shrimp	45.26	46.59	1.33	2	1	1	1B
8000700	Shrimp	0.00	4.82	4.82	2	2	2	2
8000700	Shrimp	4.82	6.57	1.75	1	1	1	1C
8000730	Shrimp	0.00	0.30	0.30	1	1	1	1C
8000740	Shrimp	0.00	1.21	1.21	1	1	1	1C
8000743	Shrimp	0.00	0.28	0.28	1	1	1	1C
8000760	Shrimp	0.00	2.00	2.00	1	1	1	1B
8000766	Shrimp	0.00	0.39	0.39	1	1	1	1C

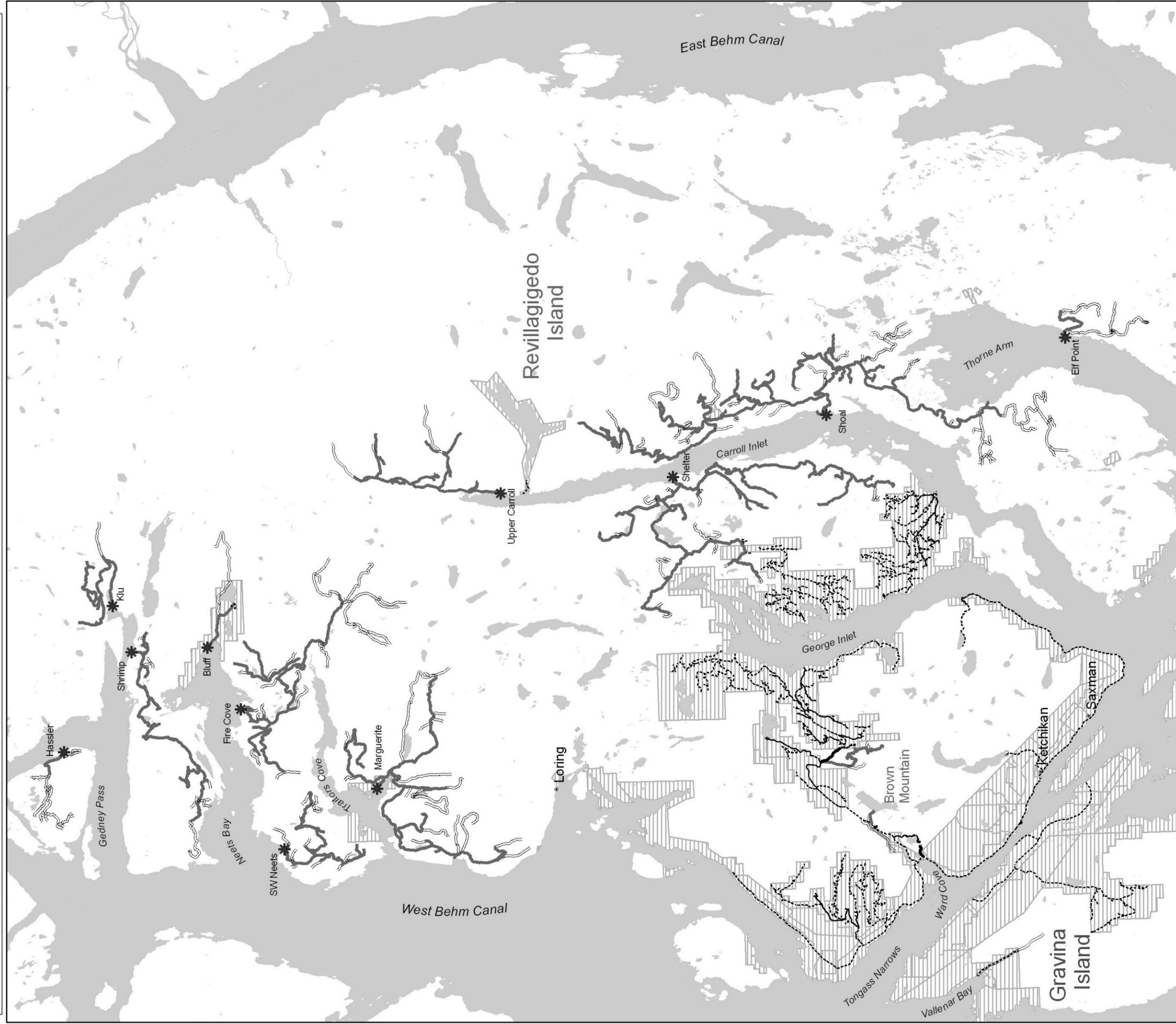
Road Number	Road System (MAF Name)	Beginning Mile Post	Ending Mile Post	Miles	OPML			Recommend Closure Category
					Alt 1	Alt 2	Alt 3	
8000770	Shrimp	0.00	0.47	0.28	1	1	1	1B
8000800	Shrimp	0.00	5.34	5.34	2	2	2	2
8000800	Shrimp	3.34	5.57	0.23	1	1	1	1C
8000802	Shrimp	0.00	0.21	0.21	1	1	1	1B
8000805	Shrimp	0.00	0.65	0.65	1	1	1	1B
8000807	Shrimp	0.00	0.06	0.06	1	1	1	1C
8000820	Shrimp	0.00	0.72	0.72	1	1	1	1B
8000825	Shrimp	0.00	0.13	0.13	1	1	1	1B
8000832	Shrimp	0.00	0.30	0.30	1	1	1	1C
8000900	Shrimp	0.00	0.50	0.50	1	2	2	1A
8000921	Shrimp	0.00	0.12	0.12	1	1	1	1B
8000925	Shrimp	0.00	0.19	0.19	1	1	1	1B
8000927	Shrimp	0.00	0.24	0.24	1	1	1	1B
8060500	SW Nts	0.00	4.66	4.66	2	1	T	1A
8060500	SW Nts	4.66	6.59	1.93	2	1	1	1A
8060510	SW Nts	0.00	1.20	1.20	1	1	1	1C
8060520	SW Nts	0.00	0.55	0.55	1	1	1	1C
8060525	SW Nts	0.00	0.45	0.45	1	1	1	1C
8060540	SW Nts	0.00	1.74	1.74	2	1	T	1A
8060540	SW Nts	1.74	1.96	0.22	2	1	1	1C
8060541	SW Nts	0.00	0.58	0.58	2	1	1	1B
8060541	SW Nts	0.58	1.00	0.42	2	1	1	1C
8060542	SW Nts	0.00	0.79	0.44	2	1	1	1C
8060545	SW Nts	0.00	0.29	0.29	2	1	1	1C
8060550	SW Nts	0.00	1.27	1.27	2	1	T	1A
8060552	SW Nts	0.00	0.48	0.48	2	1	1	1C
8060555	SW Nts	0.00	0.46	0.46	2	1	1	1C
8060570	SW Nts	0.00	0.29	0.29	2	1	1	1C
8060583	SW Nts	0.00	1.16	1.16	2	1	1	1C
8060585	SW Nts	0.00	0.84	0.84	2	1	1	1C
8400000	Upr Car	0.00	6.03	6.03	2	1	2	1A

Road Number	Road System (MAF Name)	Beginning Mile Post	Ending Mile Post	Miles	OPML			Recommend Closure Category
					Alt 1	Alt 2	Alt 3	
8400500	Upr Car	0.00	0.60	0.60	1	1	1	1C
8400600	Upr Car	0.00	1.39	1.39	2	1	1	1A
8400605	Upr Car	0.00	0.20	0.20	2	1	1	1A
8400680	Upr Car	0.00	0.58	0.58	1	1	1	1C
8400685	Upr Car	0.00	0.22	0.22	1	1	1	1C
8400690	Upr Car	0.00	0.29	0.29	2	1	1	1A
8400700	Upr Car	0.00	1.52	1.52	2	1	2	1A
8448000	Upr Car	0.00	3.79	3.79	1	1	1	1C
8448100	Upr Car	0.00	0.43	0.43	2	1	1	1A
8448200	Upr Car	0.00	0.72	0.72	2	1	1	1A
8448296	Upr Car	0.00	0.10	0.10	2	1	1	1A
8448300	Upr Car	0.00	1.15	1.15	2	1	1	1A
8460000	Upr Car	0.00	1.91	1.91	2	1	1	1A
8460000	Upr Car	1.91	2.28	0.37	1	1	1	1C
8460100	Upr Car	0.00	0.09	0.09	2	1	1	1A
8460200	Upr Car	0.00	0.37	0.37	2	1	1	1A
8110000	Vallenar	0.00	3.03	3.03	1	1	1	1C
8000000	Ward Lk	0.00	1.91	1.91	4	4	4	4
8000010	Ward Lk	0.00	0.38	0.38	4	4	4	4
8000012	Ward Lk	0.00	0.06	0.06	4	4	4	4
8000014	Ward Lk	0.00	0.04	0.04	4	4	4	4
8000015	Ward Lk	0.00	0.07	0.07	4	4	4	4
8000017	Ward Lk	0.00	0.04	0.04	4	4	4	4
8000020	Ward Lk	0.00	0.05	0.05	4	4	4	4
8000025	Ward Lk	0.00	0.30	0.30	4	4	4	4
8000030	Ward Lk	0.00	0.60	0.60	2	3	3	3
8000040	Ward Lk	0.00	1.94	1.94	1	1	1	TRAIL
8005000	Ward Lk	0.00	1.04	0.95	3	3	3	3
8005100	Ward Lk	0.00	4.33	4.33	2	2	2	2
8005120	Ward Lk	0.00	0.80	0.80	1	1	1	1C
8005130	Ward Lk	0.00	0.42	0.42	1	1	1	1A

Road Number	Road System (MAF Name)	Beginning Mile Post	Ending Mile Post	Miles	OPML			Recommend Closure Category
					Alt 1	Alt 2	Alt 3	
8100150	Ward Lk	0.00	0.07	0.07	3	4	4	4

The information above comes from a combination of GIS and INFRA sources. This has resulted in some minor numerical anomalies. These minor anomalies do not affect the analysis.

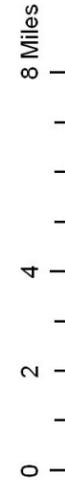
**Alternative 1
Current Operational Levels
Access and Travel Management Environmental Assessment
Ketchikan-Misty Fjords Ranger District**



Map produced using GIS data.
This map may or may not meet
National Map Accuracy Standards.



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July 2008

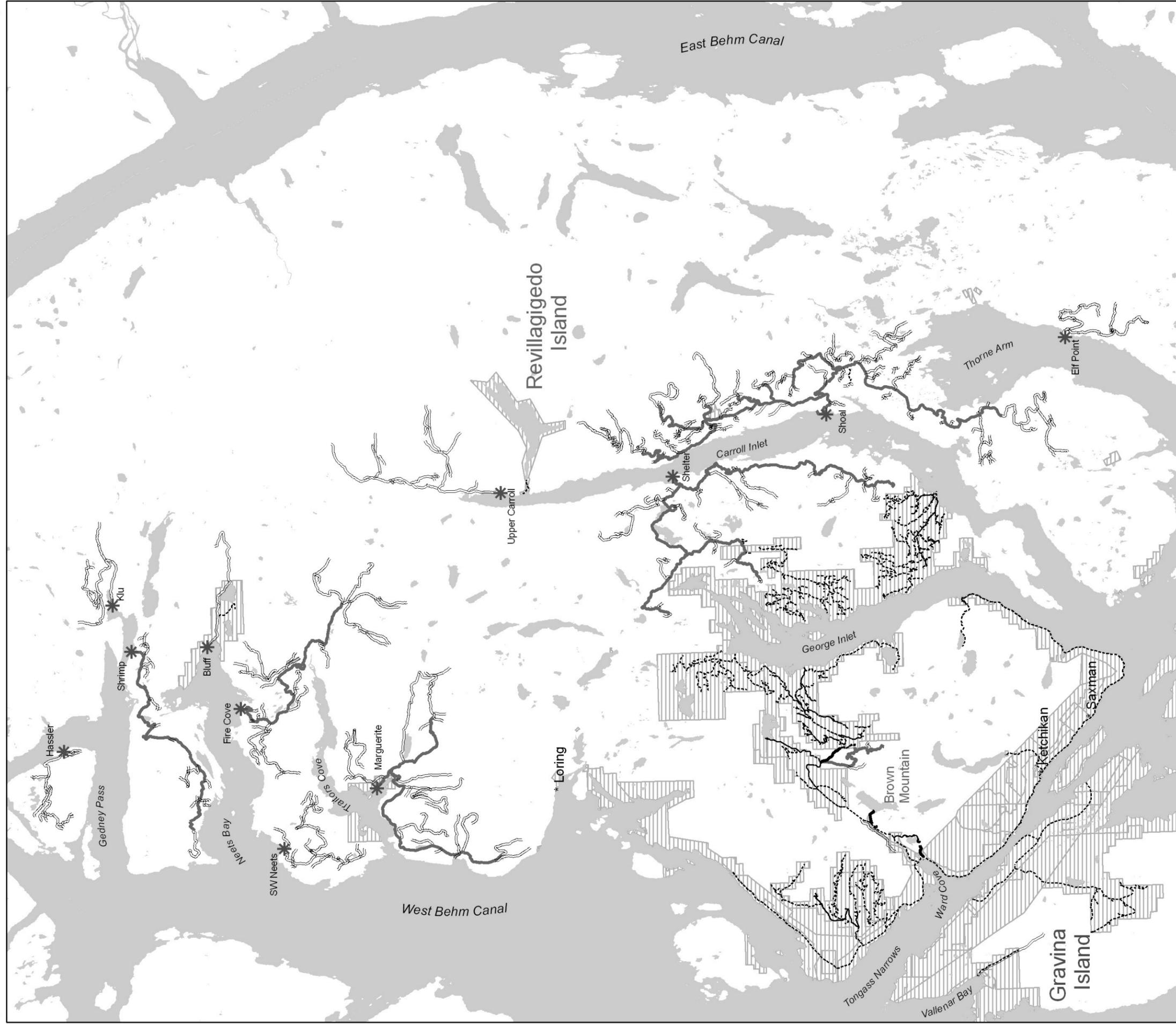


1 inch equals 3.7 miles

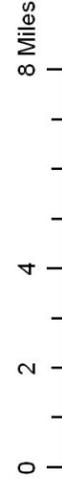
Legend

- Marine Access Facility
- Lakes or Saltwater
- Non-NFS Lands
- * ML - Maintenance Level
- * NFS - National Forest System
- ML 1 Closed Road
- ML 2 Mixed Use
- ML 3 Passenger Vehicles
- ML 4 Paved Road
- Non-NFS Roads

Alternative 2
Access and Travel Management Environmental Assessment
Ketchikan-Misty Fjords Ranger District



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1 inch equals 3.7 miles

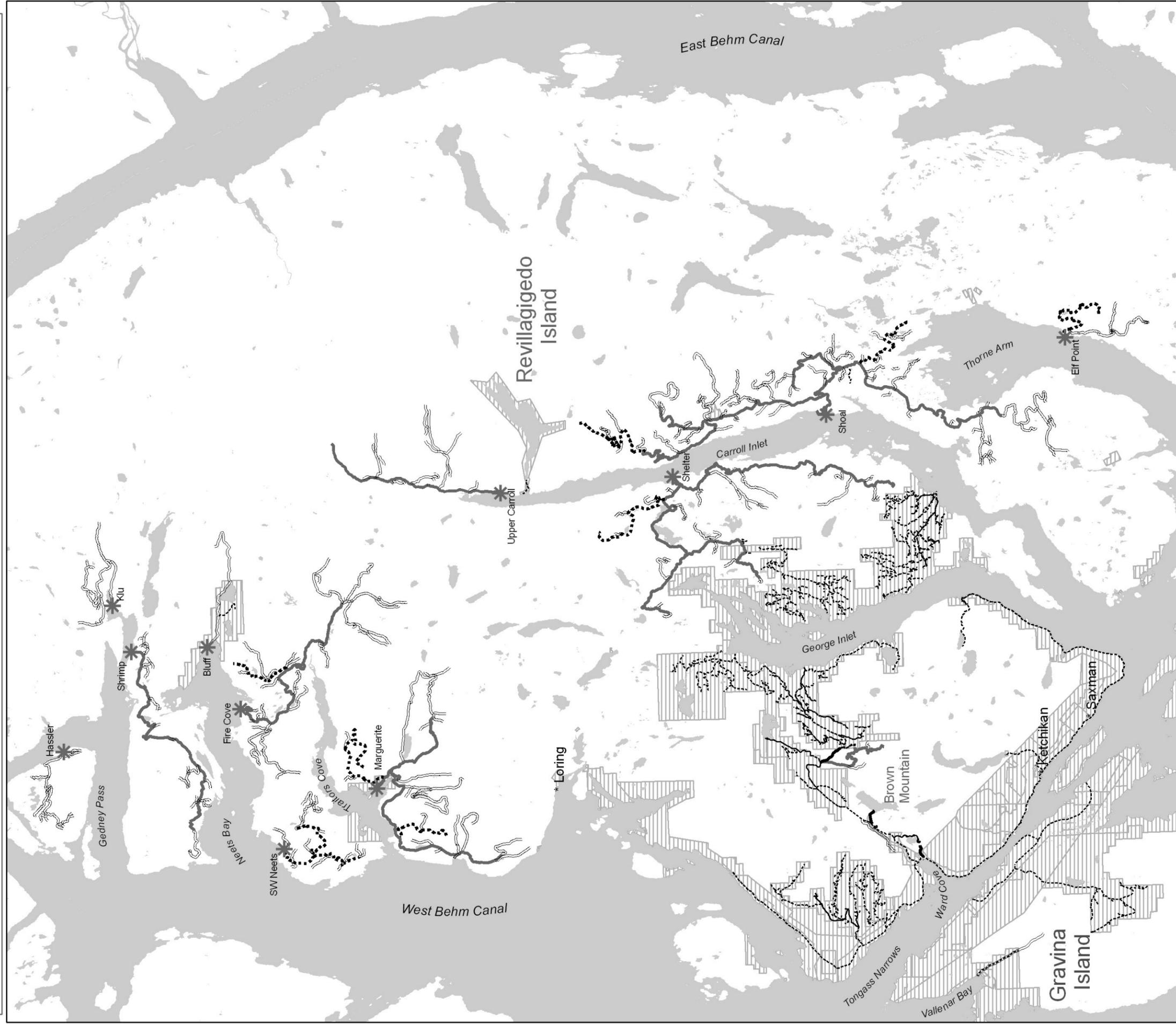


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 July 2008

Legend

- * Marine Access Facility
- Lakes or Saltwater
- Non-NFS Lands
- * ML - Maintenance Level
- * NFS - National Forest System
- ML 1 Closed Road
- ML 2 Mixed Use
- ML 3 Passenger Vehicle
- ML 4 Paved Road
- Non-NFS Roads

**Alternative 3
Access and Travel Management Environmental Assessment
Ketchikan-Misty Fiords Ranger District**

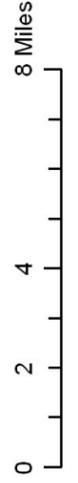


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July 2008

Legend

- Marine Access Facility
- Lakes or Saltwater
- Non-NFS Lands
- * ML - Maintenance Level
- * NFS - National Forest System
- *OHV -Off-Highway Vehicle
- ML 1 Closed Road
- ML 2 Mixed Use
- ML 3 Passenger Vehicles
- ML 4 Paved Road
- OHV Trail
- Non-NFS Roads

Map produced using GIS data.
This map may or may not meet
National Map Accuracy Standards.



1 inch equals 3.7 miles



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