Wrangell Island Timber Sale

DRAFT Transportation Report

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Introduction

The Wrangell Island Transportation Resource Report provides an assessment of the current condition of the project area and the potential effects of implementing the proposed action and the alternatives on transportation resources. The analysis utilizes existing information from recent field surveys, spatial GIS data, monitoring results, and scientific literature.

National Forest Transportation System roads are constructed to provide access to National Forest System (NFS) lands and are included in the Forest Development Transportation Plan (see Transportation Standards and Guidelines in Chapter 4 of the Forest Plan, USDA Forest Service 2008a). They are considered NFS roads or system roads, for short, as are other roads that are wholly or partially on NFS lands and are intended to be maintained for the long term (see Appendix A for glossary of transportation terms). With the exception of a few administrative sites and campgrounds, most forest roads are single lane, constructed with blasted quarry rock, and designed for off-highway loads.

For the Tongass, the demand for roads has primarily been a function of the demand for access to timber resources. The maintenance and reconstruction requirements of the existing system depend mainly on the volume of timber hauled and on recreational use. The amount of future road construction is anticipated to be determined by the need to access timber resources. The majority of roads discussed in this analysis area were originally built for logging and the associated administration, though recreational and subsistence use, including firewood gathering, now occurs throughout the area.

Roads have the potential to affect fish habitat, soils, and water quality by increasing erosion and landslide potential, changing recreation settings and opportunities, altering scenery, and increasing legal and illegal wildlife harvest. Roads also have the potential to affect logging system feasibility, silviculture systems, timber economics, and the long term feasibility of economical and sustainable forest management. These types of effects are discussed in their respective resource reports.

Timber Sale Roads Units of Measure

This analysis considers the effects of the new construction and reconditioning of roads used to access the proposed timber harvest. It also analyzes the status of these roads after timber harvest (open or closed). The units used in this report for measuring the effects and comparing the alternatives include:

- Miles of NFS road construction
- Miles of temporary road construction
- Miles of NFS road reconditioning
- Total cost of NFS and temporary road construction and NFS road reconditioning.
- Total road cost per net thousand board feet of sawlog and utility volume harvested ($/net MBF)

Overview of Issues Addressed

Access management decisions for motorized road use will affect future public access for recreation and subsistence and for agency administrative purposes.

Some commenters offered support for creating more NFS roads and keeping roads open longer for subsistence, firewood gathering, and recreation. Other commenters indicated that the project should limit new road construction to provide added resource protection and to minimize overall maintenance costs. Commenters requested that road development, closures, maintenance levels, and management objectives be analyzed.

36 CFR, Part 212.55 (a) provides direction and criteria for designation of NFS roads on NFS lands. The responsible official shall consider effects on NFS natural and cultural resources, public safety, provision of recreational opportunities, access needs, conflicts among uses, the need for maintenance and administration of roads, and availability of resources for that maintenance and administration.

Access Management Issue Indicators

- Miles of NFS roads designated as open to all vehicles
- Miles of NFS roads designated as motorized trails
- Miles of NFS roads designated as closed to all vehicles
- Miles of NFS roads designated to be decommissioned
- Estimated change from current annual road maintenance costs (percent)

Affected Environment

Existing Condition

Forest Road Classification

Forest roads are classified as National Forest System (NFS) roads and temporary roads by 36 CFR 212.1 (Travel Management Rule). The definitions for roads can be found in Appendix A, Transportation Key Terms; additional defining information is provided below.

- National Forest System 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." 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.

  When a NFS road is not needed in the short term but future use is anticipated, it is placed in storage. Road storage is intended to be the primary maintenance strategy on intermittent use roads during their closure cycle. Road Storage is defined in FSH 5409.17 as "the process/action of closing a road to vehicle traffic and placing it in a condition that requires minimum maintenance to protect the environment and preserve the facility for future use". Roads in storage are left in a self-maintaining state in order to use more road maintenance funds on the open drivable roads on the island. Maintenance Level 1, closure and basic custodial maintenance, is assigned.

- 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." Temporary roads are intended for short-term use and maintained for a limited time usually to access a timber harvest unit.

  Temporary roads are decommissioned after a timber harvest. Road decommissioning activities result in the stabilization and restoration of unneeded roads to a more natural state. The term "decommissioned roads" generally refers to temporary roads constructed for timber harvests that have had stream courses restored, culverts removed, waterbars added where needed, and cut and fill slopes re-vegetated.

Road Maintenance and Reconditioning

Road maintenance consists of superficial periodic repairs to the existing road surface, brushing, 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 accomplished as annual maintenance. Road reconditioning is heavier maintenance of an existing road, such as culvert replacement, surface rock replacement and subgrade repair.

Maintenance and reconditioning of existing NFS roads is an ongoing process that occurs on a periodic basis. Normally this type of 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 environment and may be categorically excluded. (FSH 1909.15, 321.12) This work can be done through separate service contracts or included with timber harvest contracts to reduce the backlog of deferred maintenance, recondition roads to comply with Best Management Practices, and maintain the existing infrastructure for National Forest management activities. The maintenance and reconditioning of NFS roads in the project area may occur before, during, and after this project analysis. Any effects from ongoing road maintenance and reconditioning work are included in the cumulative effects analysis for this project.

Maintenance level (ML) defines the level of service provided by, and the maintenance required for, a specific road, consistent with its road management objectives and maintenance criteria. These levels range between ML 1 (closed and in storage), ML 2 (suitable for high-clearance vehicles), ML 3 (suitable for passenger vehicles, rough surface), ML 4 (suitable for passenger vehicles, smooth surface), and ML 5 (suitable for passenger cars, dust free, possibly paved). Further definitions of the various maintenance levels can be found in transportation key terms, Appendix A.

Management of NFS roads is dynamic in the sense that roads are given both an operational maintenance level (OPML) and an objective maintenance level (OBML). The purpose of maintenance levels is to define the level of service provided by, and maintenance required for, a specific road or segment. Roads are often built and operated at a higher maintenance level during the timber sale or other activities than they are afterwards.

The OPML is the maintenance level currently assigned to a road considering today's needs, road condition, budget constraints, and environmental concerns. It defines the level to which the road is currently being maintained. It reflects the current condition and the ability to drive on the roads in the project area.

The OBML is the maintenance level to be assigned at a future date considering future road management objectives, traffic needs, budget constraints, and environmental concerns. The

objective maintenance level may be the same as, or higher or lower than, the operational maintenance level. (FSH 7709.58, Sec12.3 – Transportation System Maintenance Handbook)

The current conditions of roads on Wrangell Island are displayed in Table 1.

Table 1. Miles of existing Roads, Wrangell Island Project Area

ROUTE STATUS / SYSTEM	NFSR - NATIONAL FOREST SYSTEM ROAD OPERATIONAL MAINT LEVEL	NFSR - NATIONAL FOREST SYSTEM ROAD OBJECTIVE MAINT LEVEL	OTHER PUBLIC ROADS	TMP – TEMPORARY (DECOMMISSIONED)	TOTAL MILES
NFSR MAINT LEVEL					
1 - BASIC CUSTODIAL CARE (CLOSED)	9.41	24.1			
2 - HIGH CLEARANCE VEHICLES	27.84	32.52			
3 - SUITABLE FOR PASSENGER CARS	62.13	40.28			
4 - MODERATE DEGREE OF USER COMFORT	0.15	0.15			
D - DECOMMISSION		2.48			
TOTAL FOREST ROAD MILES	**99.53**	**99.53**	**21.32**		**120.85**
OTHER NON-NFS ROADS	0	0	12.7	20.79	**33.49**
DECOMMISSIONED MILES	6.92			22.11	**29.81**
TOTAL ROAD MILES NOT NEEDED FOR THE ADMINISTRATION OF THE FOREST SYSTEM	**6.92**	**0**	**12.7**	**42.9**	**63.3**

Marine Access Facility

A Marine Access Facility (MAF) is an area used to transfer items from land to saltwater or vice versa, that contains a structure such as a mooring buoy, dock, log transfer facility, boat ramp, or a combination of these. A Log Transfer Facility (LTF) is used to transfer logs and timber products from land-based transportation forms to water-based transportation forms (or vice-versa). These facilities are often used for the movement of equipment needed for logging and roadwork.

There are three existing LTFs within the Wrangell Island project area: Pats Creek, Earl West Cove (Venus Point), and at the site of the former Silver Bay mill in Shoemaker Bay. All three LTFs are options for a timber purchaser to move logs off Wrangell Island.

Pats Creek

The Pats Creek MAF is located at approximately mile 11 on the Zimovia Highway (State Highway 16) and consists of a barge loading and unloading ramp, a log-staging area, and a LTF.

The LTF is a single level, concrete block bulkhead with an approximately 0.5 acre log-staging area attached to it.

The Alaska Department of Environmental Conservation issued authorization AKG-70-0024 under Alaska Pollutant Discharge Elimination system (APDES) General Permit AKG-70-1000 allowing for the discharge of bark and wood debris associated with in-water log transfer and log storage. The site was last permitted in 2009 and is due to expire on November 30, 2013. Renewal of this permit is in process.

The last benthic dive associated with the Pats Creek Tideland Lease was completed in October, 2000 and bark accumulation was 0.33 acres of continuous bark debris and 0.16 acres of discontinuous bark debris, within the requirements of the permit.

Earl West Cove

The Venus MAF, commonly known as Earl West, is located at the terminal end of NFS 6265. Earl West consists of a LTF, log-staging area, and a barge loading and unloading ramp, or an equipment ramp. The LTF is a low angle, concrete reinforced ramp with steel rails with an approximately 0.5 acre log-staging area.

The Alaska Department of Environmental Conservation issued authorization AKG-70-0060 under Alaska Pollutant Discharge Elimination system (APDES) General Permit AKG-70-1000 allowing for the discharge of bark and wood debris associated with in-water log transfer and log storage. The site was last permitted in 2009 and was due to expire on November 30, 2013, but has been administratively extended.

The last benthic dive associated with the Earl West Tideland Lease was completed in June, 2001. The bark accumulation was 0.1 acres of continuous bark debris and 0.1 acres of discontinuous bark debris, which is within the requirements of the permit.

Silver Bay Mill

The former Silver Bay Mill is located at approximately mile 5.5 on the Zimovia Highway (State Highway 16) and consists of a large sort yard and a LTF. The LTF consists of a bulkhead where a crane is used to transfer logs. Additionally, there is a low angle ramp were logs can be delivered by vehicle directly into the water. The mill site is privately owned and the mill itself has been out of operation for several years.

Minerals and Geology

There are no existing mining claims on Wrangell Island.

Bridges

Table 2 displays all existing National Forest System bridges on Wrangell Island. All bridges with a less than satisfactory rating will require maintenance prior to log haul.

Table 2. Existing Bridges, Wrangell Island Project Area

Route Number	Milepost	Status	Length (ft)	Bridge Type	Year Built	Condition
50022	0.195	Existing - Inactive	60	Sawn Timber	1982	Satisfactory
50050	0.635	Existing - Active	88	Glulam	1988	Good
50055	0.700	Existing - Active	60	Sawn Timber	2004	Good
6265	0.815	Existing - Active	30	Sawn Timber	1982	Good
6265	5.270	Existing - Active	55	Sawn Timber	1989	Good
6265	10.645	Existing - Active	62	Sawn Timber	1988	Satisfactory
6265	11.994	Existing - Active	66	Sawn Timber	1980	Satisfactory
6270	1.621	Existing - Active	51	Glulam	1982	Good
6270	2.33	Existing – Active	61	Glulam	1982	Satisfactory
6270	8.054	Existing – Active	61	Glulam	1982	Fair
6270	8.282	Existing – Active	81	Glulam	1982	Fair
6270	9.032	Existing – Active	61	Glulam	1982	Fair
6270	9.092	Existing – Active	81	Glulam	1982	Good
6273	0.097	Existing – Active	68	Glulam	1986	Good
6299	0.967	Existing – Active	61	Glulam	1982	Poor
6299	5.525	Existing – Active	71	Steel	1982	Satisfactory

Note: Bridge data summarized from USFS INFRA data

Fish Stream Crossings

Most Class I and Class II fish stream crossing culverts for NFS roads on Wrangell Island have been surveyed and categorized as green, grey, or red. There are 42 known fish stream crossing culverts currently categorized as red or grey on Wrangell Island. Additional discussion involving Class I and Class II streams are addressed in the Aquatics Resource Report. The Tongass National Forest developed juvenile fish passage evaluation criteria with an interagency group of professionals. The evaluation matrix stratifies culverts by type, and establishes criteria thresholds for culvert gradient, stream channel constriction, debris blockages, and vertical barrier (or perch) at the culvert outlet. Culvert categories are as follows (USDA 2012):

- Green – conditions have a high certainty of meeting adult and juvenile fish passage requirements at all stream flows,
- Gray – conditions are such that additional analysis is required to determine juvenile fish passage ability,
- Red – conditions have a high certainty of not providing juvenile fish passage at all stream flows, such as mean annual flood levels.

Table 3 shows the number of gray and red crossings in each sub watershed within the project area. (See Aquatics Resource Report for a detailed list).

Table 3. Fish Stream Culverts on Wrangell Island

Road Number	Milepost	Stream Class	Structure Category	Road Number	Milepost	Stream Class	Structure Category
6270	8.904	II	Gray	50050	1.965	II	Red
6267	8.935	I	Gray	6259	2.334	I	Red
6267	9.318	I	Gray	6259	2.403	II	Red
50055	0.031	II	Red	6265	2.414	II	Red
50054	0.033	II	Red	6265	2.515	II	Red
50054	0.063	II	Red	6299	2.544	II	Red
50054	0.086	II	Red	6299	2.577	II	Red
6250	0.150	II	Red	6259	2.782	II	Red
50054	0.178	II	Red	6259	2.787	II	Red
6265	0.313	II	Red	6259	4.077	II	Red
6260	0.352	II	Red	6267	4.138	II	Red
50050	0.538	II	Red	6259	5.104	II	Red
6270	0.624	II	Red	6259	5.203	II	Red
6259	0.647	I	Red	6259	5.254	II	Red
6265	0.711	II	Red	6267	7.625	II	Red
6265	0.718	II	Red	6265	8.089	II	Red
50050	0.765	I	Red	6299	8.339	II	Red
6265	0.767	II	Red	6265	9.365	II	Red
6270	1.017	II	Red	6267	11.441	II	Red
50040	1.292	II	Red	6265	12.434	II	Red
50050	1.691	II	Red	6265	2.524	II	Red

Note: Stream crossing data summarized from USFS INFRA data.

Rock Quarries

There are numerous rock quarries throughout the project area. See Table 4 for a listing and location of existing rock quarries in the project area. Existing quarries are typically NEPA cleared for up to five acres.

Table 4. Existing Rock Quarries, Wrangell Island Project Area

Route Number	Milepost	Status	Route Number	Milepost	Status
50002	0.400	Existing - Active	6265	11.079	Existing - Active
50004	0.093	Existing - Inactive	6265	11.333	Existing - Active
50005	0.579	Existing - Inactive	6265	12.398	Existing - Active
50008	0.741	Existing - Inactive	6265	12.488	Existing - Active
50008	1.652	Existing - Inactive	6265	13.060	Existing - Active
50009	0.599	Existing - Inactive	6265	13.236	Existing - Active
50016_0.26ST	0.559	Existing - Inactive	6265	13.794	Existing - Active
50025	0.162	Existing - Inactive	6265_12.39R	0.134	Existing - Inactive
50034	1.010	Existing - Active	6267	0.224	Existing - Active
50034	1.517	Existing - Active	6267	0.499	Existing - Active
50050	2.565	Existing - Active	6267	6.745	Existing - Active
50050	3.343	Existing - Active	6267	7.548	Existing - Active
50050	4.904	Existing - Active	6267	8.511	Existing - Active
50051	1.435	Existing - Active	6267	8.541	Existing - Active
50051	2.226	Existing - Active	6267	9.205	Existing - Active
50052	0.384	Existing - Active	6267	10.194	Existing - Active
50054	0.464	Existing - Active	6267	11.295	Existing - Active
50060	0.274	Existing - Active	6267	12.226	Existing - Active
50060	0.943	Existing - Active	6267	13.778	Existing - Active
50060	1.243	Existing - Active	6267_8.54L	0.063	Existing - Inactive
50060	2.430	Existing - Active	6270	1.425	Existing - Active
50060	3.073	Existing - Active	6270	2.067	Existing - Active
50061	0.322	Existing - Inactive	6270	4.865	Existing - Active
50061	0.446	Existing - Inactive	6270	6.131	Existing - Active
6250	0.231	Existing - Active	6270	7.516	Existing - Active
6255	0.554	Existing - Inactive	6275	0.643	Existing - Inactive
6259	3.612	Existing - Active	6275_0.91ST	0.067	Existing - Inactive
6259	5.013	Existing - Active	6276	0.117	Existing - Active
6260	0.451	Existing - Inactive	6276	1.100	Existing - Active
6260	1.536	Existing - Inactive	6277	0.410	Existing - Inactive
6260	1.545	Existing - Inactive	6277	1.076	Existing - Inactive
6260_1.54R	0.022	Existing - Inactive	6277_0.41R	0.042	Existing - Inactive
6263	0.224	Existing - Active	6299	0.093	Existing - Active
6263	2.189	Existing - Active	6299	1.178	Existing - Active
6265	0.550	Existing - Active	6299	1.888	Existing - Active
6265	4.756	Existing - Active	6299	3.646	Existing - Active
6265	5.796	Existing - Active	6299	4.525	Existing - Active
6265	7.220	Existing - Active	6299	4.551	Existing - Active
6265	8.942	Existing - Active	6299	6.541	Existing - Inactive

Route Number	Milepost	Status	Route Number	Milepost	Status
6265	11.070	Existing - Active	6299_4.56L	0.031	Existing - Inactive

Note: Rock quarry data summarized from USFS INFRA data

Desired Condition

Regulatory Framework

Management activities on NFS lands are required to comply with the Tongass Land and Resource Management Plan (Forest Plan) and Federal and State laws. Relevant standards and regulations intended to protect transportation resources are addressed in the following subsections.

Tongass Land and Resource Management Plan

The management of National Forest System roads is regulated through the Code of Federal Regulations, including 36 CFR parts 212, 251, 261 and 295. Forest Service direction for management of transportation systems is found in Forest Service Manual (FSM), Forest Service Handbook (FSH) 7700, and FSH 2509.22 (Amendment No.: R-10 2509.22-2006-2) which provides the complete package of BMPs for consideration in project plans. Forest-wide Standards and Guidelines for Transportation are found in the Forest Plan beginning on page 4-80. The Forest Plan is the governing document for management activities that take place within the Tongass National Forest (USDA Forest Service 2008a). It consists of three parts that work together to facilitate the development of management activities. These parts include: forest goals and desired conditions for resources; the management prescriptions for each of the 19 land use designations (LUDs); and the Forest-wide Standards and Guidelines, which apply to all or most areas of the Forest and provide for the protection and management of forest resources.

In the LUDs where land-disturbing activities are proposed (i.e., Timber Production and Modified Landscape), as well as the LUDs where they are not proposed (e.g., Old-Growth Habitat), the Transportation LUD-specific Standards and Guidelines apply (USDA 2008a, chapter 3). In addition, there are Forest-wide Standards and Guidelines for Transportation that apply and provide for resource protection and safety across the Forest (USDA 2008a, chapter 4).

Other Laws, Policies, and Relevant Direction

Federal and State Road Standards

All roads are designed and constructed to comply with the Forest Plan standards and guidelines. In addition, all roads are constructed to American Association of State Highway Transportation Officials (AASHTO) and Occupational Safety and Health Administration (OSHA) standards. Roads are also constructed to meet Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-03.

Clean Water Act and Best Management Practices

A discharge of dredge or fill material for normal silvicultural activities such as harvesting for the production of forest products is exempt from Clean Water Act 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 best

management practices (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 Permits for Discharges of Dredged or Fill Material Into Waters of the United States (33 CFR 323.4(a)). All road construction would follow the applicable BMPs.

Executive Order 11990 (Wetland Protection)

Executive Order 11990 directs agencies to avoid to the extent feasible the destruction or modification of wetlands where there is a practicable alternative. It also directs agencies to preserve and enhance natural and beneficial values of wetlands in conducting land use planning.

Coastal Zone Management Act

The Alaska Coastal Management Program expired under State law on June 30, 2011. Consequently, there are currently no longer any requirements for consistency determinations or reviews under the Coastal Zone Management Act for Forest Service activities in Alaska.

General

Forest Plan goals and objectives for transportation include, but are not limited to, the development and management of roads to support resource management activities. Land Use Designations (LUDs) in the Wrangell Island project area are summarized in Table 5.

Table 5. Land Use Designations, Wrangell Island Project Area

Land Use Designation	Acres	Percent of Total
Non-NFS	17600	13.5%
Modified Landscape	10093	7.7%
Municipal Watershed	413	0.3%
Old-Growth Habitat	30926	23.7%
Scenic Viewshed	19102	14.6%
Timber Production	52578	40.2%
Overall Total	**130712**	**100.0%**

The Forest Plan management prescriptions provide for road construction in support of resource development in the moderate and intensive development LUDs. The “mostly natural setting” LUDs, such as Old Growth Habitat, are more restrictive for road construction.

When developing a transportation system to support timber harvest, the Forest Plan direction is to perform integrated logging system and transportation analysis to determine the least-cost facility (considering cost of construction, maintenance, and hauling) and design standards necessary to meet LUD objectives. This is accomplished on an alternative by alternative basis through the Financial Analysis Spreadsheet Tool – Residual Value (FASTR) program. This analysis is discussed further in the Timber Economics Resource Report.

Travel Analysis Process

The desired condition for the forest transportation system is guided in part by 36 CFR 212.5 - Road System Management. Part b provides guidance for determining the minimum road system needed.

(b) Road system—

> (1) Identification of road system. For each national forest, national grassland, experimental forest, and any other units of the National Forest System (§ 212.1), the responsible official must identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. In determining the minimum road system, the responsible official must incorporate a science-based roads analysis at the appropriate scale and, to the degree practicable, involve a broad spectrum of interested and affected citizens, other state and federal agencies, and tribal governments. The minimum system is the road system determined to be needed to meet resource and other management objectives adopted in the relevant land and resource management plan (36 CFR part 219), to meet applicable statutory and regulatory requirements, to reflect long-term funding expectations, to ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance.
>
> (2) Identification of unneeded roads. Responsible officials must review the road system on each National Forest and Grassland and identify the roads on lands under Forest Service jurisdiction that are no longer needed to meet forest resource management objectives and that, therefore, should be decommissioned or considered for other uses, such as for trails. Decommissioning roads involves restoring roads to a more natural state. Activities used to decommission a road include, but are not limited to, the following: reestablishing former drainage patterns, stabilizing slopes, restoring vegetation, blocking the entrance to the road, installing water bars, removing culverts, reestablishing drainage-ways, removing unstable fills, pulling back road shoulders, scattering slash on the roadbed, completely eliminating the roadbed by restoring natural contours and slopes, or other methods designed to meet the specific conditions associated with the unneeded road. Forest officials should give priority to decommissioning those unneeded roads that pose the greatest risk to public safety or to environmental degradation.

The Travel Analysis Process (TAP), formally referred to as the Roads Analysis Process (RAP), is a tiered, science-based system of analysis. The first tier is the Forest-wide Roads Analysis, which is an analysis for the entire Tongass National Forest (USDA Forest Service 2003). The Forest-wide Roads Analysis provided management recommendations for Maintenance Level (ML) 3, 4, and 5 roads. The second tier, or mid-level tier, is the Wrangell Ranger District Roads Analysis, which includes the Wrangell Island project area (USDA Forest Service 2006). This report details the analysis methods and recommendations for travel management of ML 1 and 2 roads on the Wrangell Ranger District (WRD), excluding Zarembo Island. Combined, these analyses recommend road management objectives for all existing NFS roads on the Ranger District. Recommendations documented in the WRD roads analysis, supplemented by input from public comment, led to the proposed action developed for the Access Travel Management (ATM) Plan for WRD (USDA Forest Service 2007).

The ATM Plan institutes a system of routes designated for motor vehicle use including class of vehicle, and if appropriate, time of year for motor vehicle use. The designated route system is shown on a Motor Vehicle Use Map (MVUM). The map can be updated annually and may be adjusted as conditions change. These maps are available at the WRD office.

The third tier is the project-level analysis which may include proposed roads as well as existing roads. The Road Management Objectives (RMO) for each proposed system road in the project area is detailed in the Road Cards of the EIS and those roads selected will become part of the Record of Decision. The RMO presents the OPML and OBML designated for each proposed NFS road. The existing road management objectives for the Wrangell Island area are summarized in Table 1.

Environmental Consequences

Affected Environment

The analysis area for the transportation system includes Wrangell Island and road segments within this area. There are no roads extending from within the project area and terminating outside the project area.

Methodology

This analysis utilizes existing information from recent field surveys, spatial GIS data, monitoring results, and scientific literature. Information sources for transportation analysis include the transportation GIS records which house the spatial data for road locations. An inventory of road attributes for NFS roads is maintained in a national database. A complete list of road attributes and definitions of these attributes is located in the project record.

Proposed new road construction routes were designed by transportation specialists and field reviewed by resource specialists during 2010 through 2012. Specific comments and concerns along with site-specific mitigation measures are discussed in the respective resource reports and in the road cards for NFS roads or the unit cards for temporary roads. The methodology for road location and field review does not vary by alternative; rather the roads are included or excluded by alternative based on the design criteria of each alternative.

The units used for measuring the effects and comparing the alternatives include:

- Miles of NFS road constructed
- Miles of temporary road construction
- Miles of NFS road reconditioning
- Miles of NFS roads designated as open to all vehicles
- Miles of NFS roads designated as motorized trails
- Miles of NFS roads designated as closed to all vehicles
- Miles of NFS roads designated to be decommissioned

- Estimated change from current road maintenance costs (percent)
- Total cost of NFS and temporary road construction and NFS road reconditioning
- Total road cost per net thousand board feet of sawlog and utility volume harvested ($/net MBF)

Incomplete and Unavailable Information

Roads are planned using aerial photos, topographic maps, GIS data, LIDAR data (when available), and other available resources. These plans are then taken to the field for initial reconnaissance while also locating road alignment control points. Control points are then connected to form the road's preliminary alignment. These preliminary alignments may require adjustments before being finalized, but often the preliminary alignment is also the final road alignment.

Reconnaissance of all planned NFS roads has occurred, but not all road segments have a finalized alignment. Additionally, roads are surveyed after they have been constructed. Because of these two factors, routes may change and alignments may vary from what is presented in the Alternative maps.

Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis

Access and Travel Management Plan

The WRD ATM was necessary to comply with the new management direction contained in the 2005 travel management rule. The Wrangell Ranger District has also seen a dramatic decrease in available road maintenance funds and subsequently a decision document was needed to manage the roads in a cost-effective and environmentally responsible manner.

The selected alternative of the ATM used the average annual road maintenance budget projections as sideboards for which roads could be maintained and at what levels. This alternative closed many of the roads in the Wrangell Island Project Area. The majority of the ATM implementation has already occurred, but there are still additional miles of road requiring closure or decommissioning (see Table 1). As part of the ATM decision, roads not needed for long-term management will be decommissioned while roads used intermittently have been, or will be, placed in an ML 1condition.

On Wrangell Island, 24.1 miles of NFS roads remain to be closed and 2.5 miles are designated to be decommissioned. The full implementation of the ATM decision had been deferred due to the planning efforts of this project.

Alaska Department of Natural Resources

The Division of Forestry (DOF) has proposed a 535 acre timber sale in the Earl West Cove area. This sale would construct approximately 4.4 miles of, presumably, temporary roads. It is not known when, or if, this sale will occur, but is listed in the DOF 5-year schedule. The DOF also has 16,683 acres identified as entitlement selection around the Thoms Creek area and does include NFS roads. It is not known if or when this selection will occur or how it will affect the NFS roads.

The Alaska Mental Health Trust Authority (AMHT) harvested approximately 104 acres and constructed approximately 0.6 miles of temporary roads in 2014. The AMHT has also proposed a land exchange with the Forest Service. This would include up to 1554 acres of AMHT lands on Wrangell Island to be exchanged to the Forest Service. The proposed AMHT land exchange would increase the miles of roads under the jurisdiction of the Forest Service by approximately one mile. The AMHT generally manages their roads as closed (as defined by the Alaska Forest Resources and Practices Act) with structures and fills removed from waterways. Should the exchange occur, the approximately one mile of road would likely be managed to a decommissioned temporary road. The exchange would not affect road maintenance budgets or motorized access.

Project Design Features and Mitigation Measures

Invasive Species Prevention

Contracts, permits, road maintenance plans and project design documents would contain appropriate provisions concerning the prevention and/or spread of invasive species along the road system.

Bridges

All existing bridges that will be used for this project will be reviewed and brought to standard prior to haul. New bridge construction may be required on new road construction. These bridges will be designed and built to a standard that will allow them to support log truck traffic.

Rock Quarries

There is a need for rock sources during the construction of the new system and temporary roads, reconditioning, and general maintenance of the existing NFS roads in this project. It is preferred the rock source is close to the site of road construction or maintenance, usually within two miles is best.

New rock quarries may be developed to support new road construction and road maintenance. Typically a three acre quarry would need to be developed for every two miles of new road construction however, the numerous rock quarries throughout the project area will allow for easy accessibility of existing quarries and may eliminate the need to develop new sites. (See Table 4 for listing and location of existing rock quarries in the project area that are available for future use and expansion.)

Quarry sites would be developed within 500 feet of a road and avoid Class I and Class II stream buffers, old-growth habitat reserves, eagle and goshawk nest tree buffers and non-developmental LUDs. With either the expansion of existing quarries or the development of new sites, the area footprint would not exceed five acres.

New Road Construction

In addition to using the existing roads, new NFS and temporary road construction would be needed to access harvest units within the project area for silvicultural activities. All new construction would be off of the existing road system.

Linear grading will be used to construct the new NFS roads. Linear grading is a construction tool used to reduce survey and design costs. The end result of a road constructed by linear grading is almost identical to normal construction. All streams receive adequate structures under the specifications and major structures (bridges and large culverts) are still surveyed and designed. All applicable BMPs still apply.

The effects of the Wrangell Island Project on transportation would be limited through the site-specific application of Forest Plan standards and guidelines and BMPs in all alternatives. BMPs are used to ensure soil and water resources are considered in transportation planning activities. Specific BMPs and site-specific design criteria are listed by resource on the road cards for new NFS roads and in unit cards for temporary roads. In particular, the following measures would reduce overall transportation system effects for the action alternatives:

- Cutslope erosion will be mitigated by timely erosion control.
- Side slopes of greater than 55% will be mitigated by full bench construction and slope stabilization, if necessary. See the road cards for site-specific requirements for other areas requiring full bench construction.
- Road construction across muskegs will be mitigated by using wetland protection measures.
- Open road density, road induced sedimentation, road maintenance requirements will all be mitigated through timely road storage after silvicultural activities are complete.

All newly constructed NFS road will be managed as ML 2, open to motorized vehicle traffic, during timber sale activities. These roads would be constructed and, after completion of the silvicultural activities and depending on the Alternative, may be placed in a self-maintaining hydrologic status (ML 1 or closed). This may include the placement of drivable water bars or dips at necessary drainage culvert locations to direct water across the road in the event the culvert plugs. Other design elements, like oversized culverts, may be used to help reduce the need for routine drainage maintenance.

NFS roads are needed for long term management of the National Forest to access future timber lands or have resource concerns that require engineering controls in construction. Closed NFS roads needed in the future could be re-opened by filling in waterbars or re-installing stream structures. Each of the closed NFS roads would be needed periodically in the future for silvicultural activities or further expansion into development LUDs.

Temporary roads are not needed for long term management of the National Forest. Temporary roads do not access future Timber Lands and do not have resource concerns that require major engineering controls in construction. All temporary roads would be decommissioned after timber harvest. This involves removing culverts and bridges, restoring natural drainage patterns, and allowing the roadway to re-vegetate. For the purpose of this analysis, the reporting of decommissioned roads equates to the sum of all decommissioned NFS roads, Temporary, and Not Needed roads (see Table 1).

Forest wide BMP implementation monitoring has consistently reported a high level of compliance (USDA Forest Service 2011, USDA Forest Service 2010). BMP implementation monitoring will continue to occur annually on a representative basis across the Forest as part of Forest Plan monitoring and is likely to occur in the Wrangell Island Project area. In addition, a

range of Forest Plan monitoring measures will occur at the forest level and will likely take place in the Wrangell Island Project area.

New NFS and temporary road construction is being proposed by varying amounts on either DOF lands, AMHT, or on both. Additionally, use of old temporary roads may be required on these two adjacent landowners. All appropriate use agreements, permits, or easements will be sought prior to any road construction or road use on these adjoining landowners.

Road Reconditioning

Roads proposed for reconditioning are existing NFS roads currently in a ML 1 status, or closed. Road closure methods can vary depending on administrative access needs and the timeframe for the next silvicultural entry. Because of this, road reconditioning can vary from replacing all removed structures and brushing the revegetated roadway, to simply blading drivable waterbars. Reconditioning would keep the roads in a safe and useful condition for which they are managed, while meeting Forest Plan Standard and Guidelines and following all applicable BMPs. (See Road Cards for road specific items)

Acid Rock Drainage

Road and quarry development have the potential to generate acid rock drainage (ARD). ARD, also referred to as acid mine drainage, is the outflow of acidic water from mining operations including waste rock, tailings, and exposed surfaces in open pits and underground workings. ARD forms as a result of the dissolution of sulphides, mainly pyrite (FeS2) and pyrrhotite (FeS), under oxidizing conditions in air and water if the rock contains sulphides. This oxidation releases H+ ions and lowers the surrounding pH to acidic levels. Acidic drainage may subsequently leach additional metal ions from the adjacent rocks and deposit them. The resulting drainage can become very acidic and contain a number of harmful constituents. In some cases, elements from the rock can leach out into contact water without acidification and result in water contamination – this is known as metal leaching. In either case, polluted water drains away from the exposed rock and can impact surrounding water bodies and the wildlife or people who come in contact with these sources.

Wetlands

Proposed roads are located to minimize impacts to soils, water and associated resources in accordance with BMPs. Wetlands are, at times, unavoidable on some portions of the location due to safety concerns, engineering design constraints and consideration for other resources. Alternatives to the location on wetlands could mean longer, higher-cost roads that may have impacted similar areas of wetlands. No high value wetlands, requiring practicable avoidance, were identified during project planning.

LTF and Sort Yards

As part of the logging operations, it is typical that a sort yard, fuel facility, equipment compound, repair shop, and field office will be located at one or multiple LTF sites. Activities with potential for spills of hazardous materials, such as fuel, require Spill Prevention, Control and Countermeasure plans (SPCC). Forest Service environmental engineers will review all SPCC plans prior to any petroleum products being on site. These plans must comply with all State and Federal permits and laws. LTFs, sort yards, and fuel storage areas must also comply with all applicable BMPs, such as, but not limited to: Region 10 12.8 – Oil Pollution Prevention and Servicing/Refueling Operations, 14.25 – Surface Erosion Control at Facilities, 14.26 – Daily LTF Cleanup, 14.27 – Log Storage/Sort Yard Erosion Control. Camping facilities could be located

either on land or on a barge near an LTF. Existing sites will be used where possible. All camps must obtain the appropriate state permits.

Land camps typically include a water supply, garage disposal, and sewage disposal. Water would be sourced from streams. Garbage would be disposed of by incineration or transported to a municipal disposal site. And sewage would require an approved drain field or septic tank.

A float camp would also get their water from a stream source. Garbage would be incinerated or transported to a municipal disposal site. Sewage would be treated prior to discharge into the ocean.

Due to the Silver Bay Mill no longer being in operation, all harvested timber will be hauled by log trucks to a LTF, transferred to the saltwater or barges, and then towed to either a lumber mill or an approved export site. All logs along the road system associated with action alternatives are being appraised to the Pats Creek LTF. The Earl West LTF is a viable alternative to using the Pats Creek LTF, but this will be dependent upon the purchaser as to whether they would like to use this site in lieu of or in conjunction with the Pats Creek LTF. For the purposes of this analysis, it is being assumed logs will be hauled to the Pats Creek LTF.

Because the Wrangell Island road system is connected to the town of Wrangell, camps, fuel facilities, equipment compounds, or field offices may not be needed or may not be located at the LTFs or elsewhere on Federal lands.

Pats Creek

The Pats Creek MAF is an actively used facility for transferring both equipment and logs to and from Wrangell Island's road system. No reconstruction is required at this facility, only minor and routine maintenance.

Earl West

The Earl West LTF has not been used to transfer logs for some years due to its location on the east side of Wrangell Island. Despite the lack of use at this site, the Earl West LTF is in good working order and does not require any maintenance.

Silver Bay Mill

The Silver Bay Mill site is an alternative to using either the Pats Creek or Earl West LTFs as this site would offer both a large sort yard and a LTF at one location. It would be up to the Timber Sale purchaser to coordinate and come to an agreement with the owner of this site. Any reconstruction and permitting needed for this site would be the responsibility of the purchaser.

Travel Analysis

During the week of March 4th, 2013, resource specialists representing Engineering, Timber, Silviculture, Wildlife/Subsistence, Fisheries/Hydrology, Recreation, and Soils/Invasive weeds conducted a Travel Analysis of Wrangell Island for all existing and proposed roads.

The travel analysis process, established by 36 CFR 212.5, FSM 7712 and FSH 7709.55 Travel Planning Handbook, was used to evaluate the long-term management objectives of individual roads. The IDT reviewed existing road designations within the Wrangell Island project area made in the 2007 WRD ATM EA Decision Notice. Public involvement and opportunities from Wrangell Island Project EIS lead to a review and recommended designation changes to the 2007 road management objectives. All proposed roads were included in the analysis.

The travel analysis was conducted to help identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands, per 36 CFR 212.5(b)(1). Recommendations were made as to which roads should be temporary (authorized by contract, short term need, decommissioned at end of use) or National Forest System Roads (needed for the long term management of the forest). Road management designation recommendations were made on NFS roads. These recommendations ranged from:

- Decommission the road,
- Close the road to public motorized vehicles after sale activates and to which level of storage treatment it would receive (ML 1),
- Close the road to highway legal vehicles and dual designate open to OHV, 50" or less in width (ML 1, OHV),
- Leave open to motorized vehicle use, by class of vehicle and, if appropriate, by time of year (ML 2 – 5).

During the travel analysis, the team made road recommendations based on future timber and silvicultural opportunities, as well as hunting and recreation needs and opportunities. Additionally, the team considered effects on the following, with the objective of minimizing:

- Damage to soil, watershed, vegetation, and other forest resources,
- Harassment of wildlife and significant disruption of wildlife habitats,
- Conflicts between motor vehicle use and existing or proposed recreational uses of NFS lands.

The travel analysis neither produced decisions nor allocates NFS lands for specific purposes, rather it merely provides recommendations. Analysis and public comments of these recommendations in the Wrangell Island EIS will inform the District Ranger in making travel management decisions for roads and trails. The analysis shall consider effects on National Forest Lands for natural and cultural resources, public safety, provision of recreational opportunities, access needs, conflicts among uses of National Forest System lands, the need for maintenance and administration of roads, and trails, that would arise if the uses under consideration are designated; and the availability of resources for that maintenance and administration. Refer to Appendix C – Travel Analysis for specific road management objectives by alternative.

Road Costs

Construction & Reconditioning

Estimated costs for construction of roads are shown in Table 8. NFS roads in Southeast Alaska are more expensive to build than in other parts of the nation. The major factor that contributes to higher costs is obtaining the rock for the roadbed. Rock is obtained by blasting bedrock, which is then hauled and shaped into a road over typically soft and uneven terrain. Other factors that contribute to the high cost of constructing Southeast Alaskan roads include the higher costs of shipping, labor, the numerous drainage structures needed, and more complex logistics.

Road development costs are based upon regional average costs for constructing roads in Southeast Alaska. Costs are applied based upon an average cost per mile for different classifications of road construction and reconstruction with an additional cost per stream crossing. The following costs were used for estimating the road development costs for each alternative:

- New NFS road construction - $146,559/mile
- NFS road constructed over decommissioned road grade - $40,000/mile
- New Temporary road construction - $131,523/mile
- Temporary road construction over decommissioned road grade - $40,000/mile
- NFS Stored Road Reconditioning - $3,000/mile
- Additional cost for stream crossings
    - Log Stringer Bridge - $157.45/foot
    - Modular Bridge - $2,518/foot

New road construction costs are based on average side slope gradients from the R10 Engineers Cost Guide. Within the Wrangell Island project area, the average side slopes for NFS road construction fell between the 20% to 40% range. Temporary roads had an average side slope of 0% to 20%. In addition to the new road construction costs per mile (shown above), costs for 18”-60”culverts were applied to NFS roads. Since temporary roads typically don’t cross major streams, only 18”-36” culverts were used in estimating costs of temporary roads. The estimated number of culverts was made by averaging the length of culverts per mile over several past road construction projects.

The construction of road over a decommissioned road will require far less work as opposed to new construction. The $40,000/mile is assuming some additional rock will be needed, replacement of structures, brushing, ditching, and any other work needed for haul and to meet BMPs. $3,000/mile for reconditioning of roads is accounting for minor road work such as: minor brushing, filling of waterbars, ditching, and reshaping road surface. Culverts have been priced separate from these road costs. See Appendix B – Road Cost Calculations for detailed road costs.

Road storage can reduce annual and deferred road maintenance costs by removing drainage structures, installing waterbars, or other means to stabilize the road surface until the road is needed again. Decommissioning will remove the road from the National Forest System inventory. When a road is decommissioned, work items may include a combination of the following: reestablishing former drainage patterns, stabilizing slopes, restoring vegetation, blocking the entrance to the road, installing water bars, removing culverts, reestablishing drainage-ways, removing unstable fills, pulling back road shoulders, or other methods designed to meet the specific conditions associated with the unneeded road. Road closure and decommissioning costs are being accounted for in the Timber cost calculations.

Annual Maintenance

The annual maintenance cost, or the change in costs as displayed in Table 7, is an estimate and is intended to show the relative comparison between the alternatives. These costs were developed by dividing the 256.6 miles of open roads on the district, which the district is currently

maintaining, into the annual maintenance budget of $140,000. This equaled an approximate maintenance cost of $545.60 per mile of road.

This cost per mile is expected to be a conservative value due to roads receiving different levels of maintenance, such as ML 3 roads receiving more regular maintenance than ML 2 roads. The greatest maintenance level proposed by this project, depending on the alternative, is a ML 2 road; therefore it can be assumed the projected annual maintenance costs are an overestimate.

The change in annual maintenance costs is calculated in relation to the existing conditions, or the operational maintenance level of the roads. Because the open roads on Wrangell Island are currently being maintained with the given budget, any future road closures will be a reduction in maintenance costs. Alternatively, the change could also be calculated based on the objective maintenance level, or the direction provided in the district ATM decision. Presenting these values in this way would indicate an increase in maintenance costs to achieve the current operational maintenance level of the roads, which would not be the case.

Alternative 1 – No Action

Direct and Indirect Effects

Road miles and cost

Under Alternative 1, no new road construction or reconstruction would occur as a result of this project. There would be no additional road costs incurred by this alternative.

The Forest Plan's transportation goal is to "Develop and manage roads and utility systems to support resource management activities; recognize the potential for future development of major Transportation and Utility Systems." Alternative 1 proposes no new development of roads. This alternative would forfeit any opportunity to develop or enhance the current road system. It would also not develop the road system that would be required to move the forest toward its desired silvicultural condition.

Access and Travel Management

All NFS roads would be managed as directed by the Forest Plan, road management objectives, and previous NEPA decisions. A decision to implement this alternative would not impact projects that are already planned or currently being implemented.

No changes would be made to the ATM for existing roads. The WRD ATM decision would be fully implemented and, as resources and funding become available, roads would be stored or decommissioned to match the currently assigned OBML. This would be a reduction in the estimated annual maintenance costs of 19%.

Cumulative Effects

Cumulative effects of past timber harvests and other development activities have resulted in a total of 97.1 miles of NFS roads and 50.6 miles of decommissioned roads (see Table 6).

The proposed DOF timber sale would add approximately 4.4 miles of roads and the recent AMHT sale has added approximately 0.6 miles of roads. The proposed AMHT land exchange would transfer approximately one mile of road to the jurisdiction of the USFS and would likely be managed as a decommissioned temporary road.

Summary of Effects

Selection of this alternative would retain current RMOs as decided in the 2007 WRG ATM decision. Full ATM implementation on Wrangell Island would result in (see Table 7):

- 73.0 miles of NFS roads designated as open to all vehicles.
- 0.0 miles of closed NFS roads designated as motorized trails.
- 24.1 miles of NFS roads designated as closed to all vehicles.
- 2.5 miles of NFS roads to be decommissioned.
- A 19% reduction in the estimated annual road maintenance costs.

Effects Common to all Action Alternatives

Direct and Indirect Effects

Each action alternative proposes varying amounts of timber harvest to meet different management objectives and, subsequently, varying amounts of road construction. The effects of new road construction, road reconditioning, and access and travel management decisions on resources are discussed in their respective resource sections and reports. Site specific resource concerns and design criteria are discussed in the road and unit cards.

Road miles and costs

All newly constructed roads would extend from the existing road system. All temporary roads would be decommissioned after timber haul is complete. Closures or decommissioning of national forest system roads would occur following the completion of timber harvest and associated silvicultural management activities.

Existing and newly developed rock sources would be needed for road construction. Every 2 miles of new road construction would require pit development. Where feasible, existing quarries would be used however, most new road construction would require the development of new rock quarries. All newly developed borrow quarries would be reviewed and cleared by resource specialists prior to development. New construction over decommissioned roads would require less rock and will have lessened impacts then if an entirely new road was constructed in an alternate location. Typically this type of construction will utilize existing borrow quarries.

For all newly constructed roads crossing fish streams, designed structures will be used to provide fish passage. These structure types may include bridges, log culverts, or metal culverts which will be specifically designed to allow for adequate fish passage. These structures would be removed from all temporary roads following the completion of timber harvest. These structures may remain in place on NFS roads depending on the road management objectives.

New road construction and reconditioning may cause a timber sale to be uneconomical if there is not enough volume to amortize these road costs. To offset this effect, in terms of road costs and efficiencies, sufficient volume must be harvested. Additionally, it is more economical to offer a single, larger timber sale versus multiple, smaller timber sales spread over time, to minimize the cost of opening and closing roads with each harvest entry.

Cable and shovel yarding methods require the added cost of new road construction and road reconditioning to gain access to harvest units. These road costs are offset by the minimal logging

costs achieved by these methods. Additionally, the value of these road improvements can be realized through improved future economics for timber harvest, associated silvicultural management activities, and the ability to achieve forest plan desired conditions for the development land use designations.

Compared to conventional logging methods, helicopter yarding requires minimal new road construction and road reconditioning to gain access to harvest units. Within industry, helicopter yarding is typically only used in areas where the use of cable or shovel yarding is limited due to prohibitively high road costs or for environmental protection measures. This is primarily due to the harvest method's high cost of yarding and because of their need of access for perpetual stand management. Where new road construction opportunities exist and helicopter yarding is being utilized rather than other conventional yarding methods, the remaining volume would likely not support the future cost of new road construction to access the unit.

Access and Travel Management

Alternatives 1 and 5 share the similar road access and travel management objectives, which are based on the existing ATM Plan decision for Wrangell Island. Alternatives 2, 3, and 4 incorporate changes to some road access and travel management objectives to reflect the public needs identified through project scoping.

Short term effects to access and travel management are anticipated as a result from conflicts that may occur during implementation of the timber sale where hunters, loggers, and log trucks are using the roads simultaneously during the fall deer season. Long term effects to access and travel management, following the completion of silvicultural activities, would vary by alternative.

Cumulative Effects

The proposed DOF timber sale would add approximately 4.4 miles of roads and the recent AMHT sale has added approximately 0.6 miles of roads. The proposed AMHT land exchange would transfer approximately one mile of road to the jurisdiction of the USFS which would likely be managed as a decommissioned temporary road.

Irreversible and Irretrievable Actions

See Table 4 for the location of existing rock quarries located in the project area that are available for future expansion and use. Where feasible, these existing quarries will be used however, most new road construction will require the development of new rock quarries. The extraction of shot rock or gravel will be apparent. The excavation sites will be evident and alter the landscape, even with screening. These resources are not replaceable therefore these actions would be irreversible.

Alternative 2 – Proposed Action

Direct and Indirect Effects

Road miles and costs

Alternative 2 proposes construction of 17.2 miles of NFS road, 14.9 miles of temporary road, and the reconditioning of 5.8 miles of existing NFS roads.

Future harvest along these roads is a possibility, as well as future road extensions however, future opportunities for economical road construction will be limited due to this Alternative's high proportion of helicopter logging and partial cutting. Approximately 3410 acres, or 64% of the total proposed harvest acres, is proposed for helicopter. This is the greatest amount of acres proposed as helicopter and is the greatest in proportion to the total acres as compared to the other alternatives. Many of these proposed helicopter units are along existing roads however, in areas where road development opportunities do exist, the remaining volume will likely not support future road development.

Of the four action alternatives, this alternative proposes the second highest amount of new road construction, although comparable to Alternative 4 (Table 6). This alternative also ranks the greatest in transportation development costs however, at $83.2/net MBF, this alternative ranked the most efficient in road costs (Table 8).The road development proposed in this alternative is the minimum amount of road required to harvest the units in accordance with the objectives of this alternative.

Access and Travel Management

To address the access and travel management issue while meeting the overall alternative objectives, this alternative was designed to incorporate the road designation recommendations identified by the interdisciplinary team of resource specialists and the City and Borough of Wrangell.

Of the 17.2 miles of new NFS roads, 6.1 miles would be closed to all vehicles, 6.0 miles would be closed yet dual designated as motorized trails, and 5.1 miles would remain open to all vehicles. 0.2 miles of NFS roads would be designated to be decommissioned. The 86.7 miles of NFS roads designated to be open would reduce the estimated annual maintenance costs by 4% from what is currently open and drivable however, this would be a 19% increase in maintenance costs based on the ATM objective maintenance levels.

Cumulative Effects

Cumulative effects of past and proposed timber harvest would result in a total of 116.7 miles of NFS roads and 61.9 miles of decommissioned roads within the Wrangell Island project area. This is the second greatest cumulative amount of NFS and temporary road created by an alternative, though comparable to Alternatives 3 and 4.

Summary of Effects

- 6.1 miles of new NFS roads would be constructed and then closed, the second least for new NFS roads, though comparable to Alternatives 3 and 4.
- 14.9 miles of new temporary roads would be constructed and then decommissioned, the second most for new temporary roads
- 5.8 miles of existing NFS would reconditioned, the second most for reconditioning
- Total road development costs equate to $5,413,862, the greatest cost
- Total road cost efficiencies equal $83.2/net MBF, the most efficient
- 86.7 miles of NFS would be designated as open to all vehicles, comparable to Alternative 4, of which:

  - 5.1 miles are proposed roads
  - 81.6 miles are existing roads

- 6.0 miles of closed NFS roads would be dual designated as motorized trails, comparable to Alternatives 3 and 4, of which:
  - 6.0 miles are proposed roads
  - 8.0 miles are existing roads
- 16.1 miles of NFS roads would be designated as closed to all vehicles, comparable to Alternatives 3 and 4, of which:
  - 6.1 miles are proposed roads
  - 10.0 miles are existing roads
- 0.2 miles of NFS roads would be decommissioned, tied for the least amount
- Estimated annual maintenance costs would be reduced by 4% from what is currently open. This is tied for the least reduction in costs, although Alternative 3 is comparable.

Alternative 3

Direct and Indirect Effects

Road miles and costs

Alternative 3 proposes construction of 15.8 miles of NFS road, 14.1 miles of temporary road, and the reconditioning of 5.8 miles of existing NFS roads.

Future harvest along these roads is a possibility, as well as future road extensions however, future opportunities for economical road construction will be limited due to this Alternative's high proportion of helicopter logging and partial cutting. Approximately 1440 acres, or 45% of the total proposed harvest acres, is proposed for helicopter. This is least amount of acres proposed as helicopter and tied for the least in proportion to the total acres as compared to the other alternatives. Many of these proposed helicopter units are along existing or proposed roads however, in areas where road development opportunities do exist, the remaining volume will likely not support future road development.

Of the four action alternatives, this alternative proposes the second least amount of new road construction, but is comparable to Alternatives 2 and 4 (see Table 6). This alternative also ranks the second least in transportation development costs however, at $99.3/net MBF, this alternative ranked the second least efficient in road costs (Table 8).The road development proposed in this alternative is the minimum amount of road required to harvest the units in accordance with the objectives of this alternative.

Access and Travel Management

To address the access and travel management issue while meeting the overall alternative objectives, this alternative was designed to incorporate the road designation recommendations

identified by the interdisciplinary team of resource specialists and the City and Borough of Wrangell.

Of the 15.8 miles of new NFS roads, 6.2 miles would be closed to all vehicles, 5.7 miles would be closed yet dual designated as motorized trails, and 3.8 miles would remain open to all vehicles. 0.2 miles of NFS roads would be designated to be decommissioned. The 85.4 miles of NFS roads designated to be open would reduce the estimated annual maintenance costs by 5% from what is currently open and drivable however, this would be a 17% increase in maintenance costs based on the ATM objective maintenance levels.

Cumulative Effects

Cumulative effects of past and proposed timber harvest would result in a total of 115.3 miles of NFS roads and 61.9 miles of decommissioned roads within the Wrangell Island project area. This is the second least cumulative amount of NFS and temporary road created by an alternative, but is comparable to Alternatives 2 and 4.

Summary of Effects

- 15.8 miles of new NFS roads would be constructed, the second least for new NFS roads
- 14.1 miles of new temporary roads would be constructed and then decommissioned, the second least for new temporary roads
- 5.8 miles of existing NFS would reconditioned, the second most for reconditioning
- Total road development costs equate to $4,841,292, the second least cost
- Total road cost efficiencies equal $99.3/net MBF, the second least efficient
- 85.4 miles of NFS would be designated as open to all vehicles, the second least amount, of which:
    - 3.8 miles are proposed roads
    - 81.6 miles are existing roads
- 13.8 miles of closed NFS roads would be dual designated as motorized trails, the second least amount, of which:
    - 5.7 miles are proposed roads
    - 8.0 miles are existing roads
- 16.3 miles of NFS roads would be designated as closed to all vehicles, the second greatest amount, of which:
    - 6.2 miles are proposed roads
    - 10.1 miles are existing roads
- 0.2 miles of NFS roads would be decommissioned, tied for the least amount

- Estimated annual maintenance costs would be reduced by 5% from what is currently open. This is the second greatest reduction in costs, although Alternatives 2 and 4 are comparable.

Alternative 4

Direct and Indirect Effects

Road miles and costs

Alternative 4 proposes construction of 16.1 miles of NFS road, 16.2 miles of temporary road, and the reconditioning of 5.4 miles of existing NFS roads.

Future harvest along these roads is a possibility, as well as future road extensions however, future opportunities for economical road construction will be limited due to this Alternative's high proportion of helicopter logging and partial cutting. Approximately 1604 acres, or 45% of the total proposed harvest acres, is proposed for helicopter. This is the second least amount of acres proposed as helicopter and the second highest in proportion to the total acres as compared to the other alternatives, although this is comparable to Alternative 3 Many of these proposed helicopter units are along existing or proposed roads however, in areas where road development opportunities do exist, the remaining volume will likely not support future road development.

Of the four action alternatives, this alternative proposes the greatest amount of new road construction (Table 6). This alternative also ranks the second highest in transportation development costs however, at $102.4/net MBF, this alternative ranked the least efficient in road costs (Table 8).The road development proposed in this alternative is the minimum amount of road required to harvest the units in accordance with the objectives of this alternative.

Access and Travel Management

To address the access and travel management issue while meeting the overall alternative objectives, this alternative was designed to incorporate the road designation recommendations identified by the interdisciplinary team of resource specialists and the City and Borough of Wrangell.

Of the 16.1 miles of new NFS roads, 5.8 miles would be closed to all vehicles, 5.6 miles would be closed yet dual designated as motorized trails, and 4.7 miles would remain open to all vehicles. 0.2 miles of NFS roads would be designated to be decommissioned. The 86.3 miles of NFS roads designated to be open would reduce the estimated annual maintenance costs by 4% from what is currently open and drivable however, this would be an 18% increase in maintenance costs based on the ATM objective maintenance levels.

Cumulative Effects

Cumulative effects of past and proposed timber harvest would result in a total of 115.6 miles of NFS roads and 64.0 miles of decommissioned roads within the Wrangell Island project area. This is the greatest cumulative amount of NFS and temporary road created by an alternative.

Summary of Effects

- 116.1 miles of new NFS roads would be constructed, the second highest for new NFS roads

- 16.2 miles of new temporary roads would be constructed and then decommissioned, the greatest amount for new temporary roads
- 5.4 miles of existing NFS would reconditioned, the second least for reconditioning, although comparable to Alternatives 2 and 3.
- Total road development costs equate to $5,231,822, the second highest cost
- Total road cost efficiencies equal $102.4/net MBF, the least efficient
- 86.3 miles of NFS would be designated as open to all vehicles, the second highest amount, of which:
    - 4.7 miles are proposed roads
    - 81.6 miles are existing roads
- 13.6 miles of closed NFS roads would be dual designated as motorized trails, the second least amount, of which:
    - 5.6 miles are proposed roads
    - 8.0 miles are existing roads
- 15.7 miles of NFS roads would be designated as closed to all vehicles, the least amount, of which:
    - 5.8 miles are proposed roads
    - 10.0 miles are existing roads
- 0.2 miles of NFS roads would be decommissioned, tied for the least amount
- Estimated annual maintenance costs would be reduced by 4% from what is currently open. This is the least reduction in costs, although Alternatives 2 and 3 are comparable.

Alternative 5

Direct and Indirect Effects

Road miles and costs

Alternative 5 proposes construction of 12.5 miles of NFS road, 9.1 miles of temporary road, and the reconditioning of 4.1 miles of existing NFS roads.

Future harvest along these roads is a possibility, as well as future road extensions; however, future opportunities for economical road construction and future land management options may be limited due to this Alternative's high proportion of helicopter logging and partial cutting. Approximately 2754 acres, or 72% of the total proposed harvest acres, is proposed for helicopter. This is the second greatest amount of acres proposed as helicopter and the greatest in proportion to the total acres as compared to the other alternatives. Many of these proposed helicopter units are along existing or proposed roads however, in areas where road development opportunities do exist, the remaining volume will likely not support future road development.

Of the four action alternatives, this alternative proposes the least amount of new road construction (Table 6). This alternative ranks the lowest in transportation development costs however, at $86.9/net MBF, this alternative ranked the second most efficient in road costs (Table 8).The road development proposed in this alternative is the minimum amount of road required to harvest the units in accordance with the objectives of this alternative.

Access and Travel Management

To address the access and travel management issue while meeting the overall alternative objectives, this alternative was designed to be consistent with the existing 2007 WRD ATM decision within the project area.

All new and reconditioned NFS roads would be closed and none of these closed roads would be dual designated as motorized trails. 2.5 miles of NFS roads would be designated to be decommissioned. The remaining 72.8 miles of NFS roads designated to be open would reduce the estimated annual maintenance costs by 19% from what is currently open and drivable. This would be at the levels set by the ATM objective maintenance levels.

Cumulative Effects

Cumulative effects of past and proposed timber harvest would result in a total of 109.5 miles of NFS roads and 57.1 miles of decommissioned roads within the Wrangell Island project area. This is the lowest cumulative amount of NFS and temporary road created by an alternative.

Summary of Effects

- 12.5 miles of new NFS roads would be constructed and then closed, the least for new NFS roads
- 9.1 miles of new temporary roads would be constructed and then decommissioned, the least for new temporary roads
- 4.1 miles of existing NFS would reconditioned and then closed, the least for reconditioning
- Total road development costs equate to $3,719,960, the least cost
- Total road cost efficiencies equal $86.9/net MBF, the second most efficient
- 72.8 miles of NFS would be designated as open to all vehicles, tied for the least amount
- 0.0 miles of closed NFS roads would be dual designated as motorized trails, the least amount
- 36.5 miles of NFS roads would be designated as closed to all vehicles, the greatest amount
- 2.5 miles of NFS roads would be decommissioned, the greatest amount
- Estimated annual maintenance costs would be reduced by 19% from what is currently open. This is the greatest reduction in costs, equal to the No Action Alternative

Comparison of Alternatives and Summary of Effects

The tables in this section show side-by-side comparisons of key indicators for the transportation system proposed in each alternative.

Road Miles

Table 6 summarizes the miles of proposed road construction and existing road miles for both NFS roads and temporary roads. Temporary roads are decommissioned after their period of use has expired; they will not be open and drivable and are not counted as part of the National Forest System (NFS) roads network. Temporary roads are not needed for future access and are typically constructed to a lower design standard than system roads resulting in a lower construction cost. Temporary roads will not provide the public access to firewood after the timber harvest is complete. NFS roads may remain open until silvicultural activities are completed, depending on the road management objective of the alternative.

Table 6. Proposed and Existing Road Miles

Road Type	Alternative				
	1	2	3	4	5
Proposed NFS - New construction	0.0	17.2	15.8	16.1	12.5
Existing NFS[1]	97.1	99.5	99.5	99.5	97.1
Total NFS - after implementation	**97.1**	**116.7**	**115.3**	**115.6**	**109.5**
Proposed Temp - new construction	0.0	14.9	14.1	16.2	9.1
Existing Decommissioned[2,3]	50.6	47.1	47.8	47.8	48.0
Total Decommissioned - after implementation	**50.6**	**61.9**	**61.9**	**64.0**	**57.1**
Total Proposed road construction	**0.0**	**32.1**	**29.8**	**32.3**	**21.6**
Road Reconditioning (maintenance of closed roads)	**0.0**	**5.8**	**5.8**	**5.4**	**4.1**

[1] Miles are based on Objective Maintenance Level

[2] Existing miles vary to account for miles being converted to NFS or reused as Temp.

[3] Existing Decommissioned = decommissioned NFS + Temporary + Not Needed (refer to Table 1).

Issue Indicators

Table 7, below, displays the units of measure to describe and compare the access and road management issue. The effects of these units of measure can be found the respective resource reports.

Alternatives 1 and 5 are essentially the same when comparing issue units of measure of access and travel management. All proposed NFS construction in Alternatives 5 will be closed to all motorized vehicles. This is based on the amount of roads determined to be open and accessible in the 2007 ATM.

Alternatives 2, 3, and 4 are similar when comparing the issue units of measure for access and travel management. The road management objectives are based on the recommendations of the interdisciplinary team of resource specialists. These recommendations did not vary alternative to alternative, rather specific roads, or various lengths of a road, were needed for timber access.

Table 7. Issue Indicators

Issue Units of Measure	Alternative

	1	2	3	4	5
NFS roads designated as open to all vehicles (ML2 - ML5)					
Proposed	0	5.1	3.8	4.7	0
Existing	73.0	81.6	81.6	81.6	72.8
Total	**73.0**	**86.7**	**85.4**	**86.3**	**72.8**
NFS roads designated as motorized trails (ML1, OHV)					
Proposed	0	6.0	5.7	5.6	0
Existing	0	8.0	8.0	8.0	0
Total	**0**	**14.0**	**13.8**	**13.6**	**0**
NFS roads designated to be closed to all vehicles (ML1)					
Proposed	0	6.1	6.2	5.8	12.5
Existing	24.1	10.0	10.1	10.0	24.1
Total	**24.1**	**16.1**	**16.3**	**15.7**	**36.5**
NFS roads designated to be decommissioned					
Proposed	0	0	0	0	0
Existing	2.5	0.2	0.2	0.2	2.5
Total	**2.5**	**0.2**	**0.2**	**0.2**	**2.5**
Change in annual road maintenance costs					
Total	**-19%**	**-4%**	**-5%**	**-4%**	**-19%**

Road Costs

Table 8 displays the sum total of road costs per alternative as well as the relationship between road costs and volume harvested.

Alternative 2 is the most costly in terms of transportation costs, but is also the most efficient. This is due to the road costs being amortized over a greater volume of timber harvested.

Table 8. Estimated Transportation Costs and Efficiencies

Road Type	Alternative				
	1	2	3	4	5
NFS construction	$0	$3,286,605	$2,764,613	$2,852,732	$2,456,296
NFS reconditioning	$0	$17,280	$17,280	$16,050	$12,180
Temporary construction	$0	$2,109,977	$2,059,399	$2,363,041	$1,251,484
Estimated Total Road Costs	**$0**	**$5,413,862**	**$4,841,292**	**$5,231,822**	**$3,719,960**
Net MBF Harvested (sawlog & utility) (nMBF)	0	65057	48795	51075	42787
Total Road Costs per nMBF ($/nMBF)	**$0**	**$83.2**	**$99.2**	**$102.4**	**$86.9**

Note - Costs are estimated by road, but are not exact values; these values are presented to provide a relative comparison between the alternatives. All costs are subject to change.

Road Management Objectives

Table 9 is a summary of the existing and proposed NFS RMOs. The RMOs are a product of the alternatives' goals and are based on either recommendations made by the interdisciplinary team of

resource specialists or direction from the ATM Plan. Refer to Appendix C – Travel Analysis for road by road specifics.

Table 9. Miles of Road by Objective Maintenance Level

		NFSR - Obj ML	Temp		Alternative			
					2	3	4	5
Proposed (Miles)	**NFSR Obj Maint Level**							
	ML 1 - Basic Custodial Care (Closed)				6.1	6.2	5.8	12.5
	ML 1 - Closed, Designated as Motorized Trail				6.0	5.7	5.6	0
	ML 2 - High Clearance Vehicles				5.1	3.8	4.7	0
	ML 3 - Suitable for Passenger Cars							
	ML 4 - Moderate Degree of User Comfort							
	Decommission							
	Decommissioned Temp				14.9	14.1	16.2	9.1
Existing & Proposed (Miles)	**NFSR Obj Maint Level**							
	ML 1 - Basic Custodial Care (Closed)	24.09			16.1	16.3	15.7	36.5
	ML 1 - Closed, Designated as Motorized Trail	0			14.0	13.8	13.6	0
	ML 2 - High Clearance Vehicles	32.53			46.2	45.0	45.9	32.3
	ML 3 - Suitable for Passenger Cars	40.28			40.28	40.28	40.28	40.28
	ML 4 - Moderate Degree of User Comfort	0.15			0.15	0.15	0.15	0.15
	Decommission	2.48			0.15	0.15	0.15	2.48
	Decommissioned Temp		50.6		61.9	61.9	64.0	57.1

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Appendix A – Glossary

- **Abbreviations**:
    - AASHTO. American Association of State Highway and Transportation Officials.
    - CFR. Code of Federal Regulations.
    - EM. Forest Service Engineering Manual.
    - EO. Executive Order.
    - FSH. Forest Service Handbook.
    - FSM. Forest Service Manual.
    - USC. United States Code
- **Access Right** (1). The right of ingress to and egress from a property that abuts a street or highway. (23 CFR 710.105)
- **Access Right** (2). The authority to pass over a property for purposes of ingress to or egress from a piece of property. (FSM 5460.5)
- **Administrative unit**. A National Forest, a National Grassland, a purchase unit, a land utilization project, Columbia River Gorge National Scenic Area, Land between the Lakes, Lake Tahoe Basin Management Unit, Midewin National Tallgrass Prairie, or other comparable unit of the National Forest System. (36 CFR 212.1, 36 CFR 261.2)
- **All-Terrain Vehicle**. A type of off-highway vehicle that travels on three or more low-pressure tires; has handle-bar steering; is less than or equal to 50 inches in width; and has a seat designed to be straddled by the operator. (FSH 2309.18.05)
- **Annual Maintenance**. Work performed to maintain serviceability, or repair failures during the year in which they occur. Includes preventive and/or cyclic maintenance performed in the year in which it is scheduled to occur. Unscheduled or catastrophic failures of components or assets may need to be repaired as a part of annual maintenance. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)
- **Arterial Road** (1). A road that provides for relatively high travel speeds and minimum interference to through movement. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)
- **Arterial Road** (2). A forest road that provides service to large land areas and usually connects with other arterial roads or public highways. (FSH 7709.54, no longer in print)
- **Bridge** (1). A structure, including supports, erected over a depression or an obstruction, such as water, a highway, or a railway, having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments or spring lines of arches, or extreme ends of the openings form multiple boxes; it may include multiple pipes where

the clear distance between openings is less than half of the smaller contiguous opening. (23 CFR 650.403)

- **Bridge** (2). A road or trail structure, including supports, erected over a depression or an obstruction, such as water, a road, a trail, or railway, and having a deck for carrying traffic or other loads. (FSM 7705)

- **Collector Road** (1). A road that serves predominant travel distances shorter than arterial roads at more moderate speeds. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Collector Road** (2). A forest road that serves smaller land areas than an arterial road. Usually connects forest arterial roads to local forest roads or terminal facilities. (FSH 7709.54, no longer in print)

- **Construction** (1). The supervising, inspecting, actual building, and incurrence of all costs incidental to the construction or reconstruction of a highway, including bond costs and other costs relating to the issuance in accordance with section 122 of bonds or other debt financing instruments and costs incurred by the State in performing Federal-aid project related audits that directly benefit the Federal-aid highway program. Such term includes--

  A. locating, surveying, and mapping (including the establishment of temporary and permanent geodetic markers in accordance with specifications of the National Oceanic and Atmospheric Administration of the Department of Commerce);

  B. resurfacing, restoration, and rehabilitation;

  C. acquisition of rights-of-way;

  D. relocation assistance, acquisition of replacement housing sites, and acquisition and rehabilitation, relocation, and construction of replacement housing;

  E. elimination of hazards of railway grade crossings;

  F. elimination of roadside obstacles;

  G. improvements that directly facilitate and control traffic flow, such as grade separation of intersections, widening of lanes, channelization of traffic, traffic control systems, and passenger loading and unloading areas; and

  H. capital improvements that directly facilitate an effective vehicle weight enforcement program, such as scales (fixed and portable), scale pits, scale installation, and scale houses. (23 USC 101)

- **Construction** (2). The erection, construction, installation, or assembly of a new fixed asset. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Critical Vehicle**. The vehicle, normally the largest (by weight, size, or unique configuration), whose limited use on the road is necessary to complete the planned activity. (FSH 7709.56, 4.1)

- **Culvert**. A conduit or passageway under a road, trail, or other obstruction. A culvert differs from a bridge in that the top of a culvert does not serve as the road surface and is constructed entirely below the elevation of the traveled way. (Handbook of Steel Drainage & Highway Construction Products).

- **Cyclic Maintenance**. Preventive maintenance activities that recur on a periodic and scheduled cycle. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Decommission**. Demolition, dismantling, removal, obliteration and/or disposal of a deteriorated or otherwise unneeded asset or component, including necessary cleanup work. This action eliminates the deferred maintenance needs for the fixed asset. Portions of an asset or component may remain if they do not cause problems nor require maintenance. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Deferred Maintenance**. Maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period. When allowed to accumulate without limits or consideration of useful life, deferred maintenance leads to deterioration of performance, increased costs to repair, and decrease in asset value. Deferred maintenance needs may be categorized as critical or non-critical at any point in time. Continued deferral of non-critical maintenance will normally result in an increase in critical deferred maintenance. Code compliance (e.g. life safety, ADA, OSHA, environmental, etc.), Forest Plan Direction, Best Management Practices, Biological Evaluations other regulatory or Executive Order compliance requirements, or applicable standards not met on schedule are considered deferred maintenance. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Design Speed**. A selected speed used to determine the various geometric design features of the roadway with respect to topography, anticipated operating speed, the adjacent land use, and the functional classification of the road. The selected design speed should be consistent with the speeds that drivers are likely to expect on a given highway facility. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Design Vehicle**. A selected vehicle, with representative weight, dimensions, and operating characteristics, used to establish the design controls for the road. There are four general classes of design vehicles: (1) passenger cars, (2) buses, (3) trucks, and (4) recreational vehicles. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Designated road, trail, or area**. A National Forest System road, a National Forest System trail, or an area on National Forest System lands that is designated for motor vehicle use pursuant to 36 CFR 212.51 on a motor vehicle use map. (36 CFR 212.1)

- **Forest Development Road**. A forest road under the jurisdiction of the Forest Service. (23 USC 101)

- **Forest Development Trail**. A forest trail under the jurisdiction of the Forest Service. (23 USC 101)

- **Forest Highway**. A forest road under the jurisdiction of, and maintained by, a public authority and open to public travel. (23 USC 101)

- **Forest Road**. A road wholly or partly within, or adjacent to, and serving the National Forest System that is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources. (23 USC 101)

- **Forest Road or Trail**. A road or trail wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration and utilization or the National Forest System and the use and development of its resources. (36CFR 212.1, 36 CFR 251.5, 36 CFR 261.2)

- **Forest Trail**. A trail wholly or partly within, or adjacent to, and serving the National Forest System and which is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources. (23 USC 101)

- **Forest Transportation Atlas**. A display of the system of roads, trails and airfields of an administrative unit. (36 CFR 212.1)

- **Forest Transportation Facility**. A forest road or trail or an airfield that is displayed in a forest transportation atlas, including bridges, culverts, parking lots, marine access facilities, safety devices, and other improvements appurtenant to the forest transportation system. (36 CFR 212.1)

- **Forest Transportation System**. The system of National Forest System roads, National Forest System Trails, and airfields on National Forest System lands. (36 CFR 212.1)

- **Forest Transportation System Management**. The planning, inventory, analysis, classification, record keeping, scheduling, construction, reconstruction, maintenance, decommissioning, and other operations undertaken to achieve environmentally sound, safe, cost-effective, access for use, protection, administration, and management of National Forest System lands. (FSM 7705)

- **Functional Classification**. The grouping of roads by the character of service they provide. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Heavy maintenance**. Work usually done by highway agencies in repairing damage normally expected from seasonal and occasionally unusual natural conditions or occurrences. It includes work at a site required as a direct result of a disaster which can reasonably be accommodated by a State or local road authority's maintenance, emergency or contingency program. (23 CFR 668)

- **Highway**. The term ``highway'' includes-- (A) a road, street, and parkway, (B) a right-of-way, bridge, railroad-highway crossing, tunnel, drainage structure, sign, guardrail, and protective structure, in connection with a highway; and (C) a portion of any interstate or international bridge or tunnel and the approaches thereto, the cost of which is assumed by a State transportation department, including such facilities as may be required by the United States Customs and Immigration Services in connection with the operation of an international bridge or tunnel. (23 USC 101)

- **Jurisdiction** (1). The legal right or power to interpret and apply the law. Authority or control. (Webster)

- **Jurisdiction** (2). The legal right to control and regulate the use of a transportation facility. Roads on National Forest lands are under the control of the Forest Service, except for public roads established under the Act of July 26, 1866, private roads, roads for which the Forest Service has granted rights-of-way to private landowners or public road agencies, and roads whose use and rights pre-date the National Forest. Other factors may affect jurisdiction on acquired lands or easements. Review the granting document and obtain appropriate legal opinion for these cases, when necessary. There are roads on the transportation system where the Forest Service has limited rights of use and no jurisdiction over the traffic, such as private road systems and State, county, or township roads. (FSH 7709.59.21)

- **Jurisdiction** (3). The legal right or authority to control, operate, regulate use of, maintain, or cause to be maintained, a transportation facility, through ownership or delegated authority. The authority to construction or maintain such a facility may be derived from fee title, easement, written authorization, or permit from a Federal agency, or some similar method. (23 CFR 660.103)

- **Local Road** (1). A road that primarily provides access to land adjacent to collector roads over relatively short distances at low speeds. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Local Road** (2). A forest road that connects terminal facilities with forest collector, forest arterial or public highways. Usually forest local roads are single purpose transportation facilities. (FSH 7709.54, no longer in print)

- **Low-Volume Road**. A road that has an average daily traffic of 400 or less. (AASHTO, 2001, Guidelines for Geometric Design of Very Low-Volume Local Roads)

- **Maintenance** (1). The preservation of the entire highway, including surface, shoulders, roadsides, structures and such traffic-control devices as are necessary for its safe and efficient utilization. (23 USC 101)

- **Maintenance** (2). The upkeep of the entire forest transportation facility including surface and shoulders, parking and side areas, structures, and such traffic-control devices as are necessary for its safe and efficient utilization. (36 CFR 212.1)

- **Maintenance** (3). The act of keeping fixed assets in acceptable condition. It includes preventive maintenance normal repairs; replacement of parts and structural components, and other activities needed to preserve a fixed asset so that it continues to provide acceptable service and achieves its expected life. Maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from, or significantly greater than those originally intended. Maintenance includes work needed to meet laws, regulations, codes, and other legal direction as long as the original intent or purpose of the fixed asset is not changed. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Maintenance Levels**. Defines the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria. (FSH 7709.58, 12.3)

- **Maintenance Level 1**. 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 resource 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 of any type, class or construction standard, and 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 non-motorized uses. (FSH 7709.58, 12.3)

- **Maintenance Level 2**. 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. (FSH 7709.58, 12.3)

- **Maintenance Level 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. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users. (FSH 7709.58, 12.3)

- **Maintenance Level 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. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times. (FSH 7709.58, 12.3)

- **Maintenance Level 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. The appropriate traffic management strategy is "encourage." (FSH 7709.58, 12.3)

- **Motor Vehicle**. Any vehicle which is self-propelled, other than:

  - A vehicle operated on rails; and

  - Any wheelchair or mobility device, including one that is battery-powered, that is designed solely for use by a mobility-impaired person for locomotion, and that is suitable for use in an indoor pedestrian area. (36 CFR 212.1, 36 CFR 261.2)

- **Motor Vehicle Use Map**. A map reflecting designated roads, trails, and areas on an administrative unit or a Ranger District of the National Forest System. (36 CFR 212.1)

- **National Forest System**. As defined in the Forest Rangeland Renewable Resources Planning Act, the ``National Forest System'' includes all National Forest lands reserved or withdrawn from the public domain of the United States, all National Forest lands acquired through purchase, exchange, donation, or other means, the National Grasslands and land utilization projects administered under title III of the Bankhead-JonesFarm Tennant Act (50 Stat. 525, 7 U.S.C. 1010-1012), and other lands, waters or interests therein which are administered by the Forest Service or are designated for administration through the Forest Service as a part of the system. (36 CFR 212.1)

- **National Forest System Land**. All lands, waters, or interests therein administered by the Forest Service. (36 CFR 251.51)

- **National Forest System 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. (36 CFR 212.1, 36 CFR 251.51, 36 CFR 261.2)

- **National Forest System Trail**. A forest trail other than a trail which has been authorized by a legally documented right-of-way held by a State, county or other local public road authority. (36 CFR 212.1)

- **Need** (1). A maintenance, capital improvement, or other programmatic or operational requirement which can be satisfied by a single unit of work. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

    - **Critical Need**. A requirement that addresses a serious threat to public health or safety, a natural resource, or the ability to carry out the mission of the organization. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

    - **Emergency Need**. An urgent maintenance need that may result in injury, illness, or loss of life, natural resource, or property; and must be satisfied immediately. Emergency needs generally require a declaration of emergency or disaster, or a finding by a line officer that an emergency exists. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

    - **Health & Safety Need**. A requirement that addresses a threat to human safety and health (e.g. violations of National Fire Protection Association 101 Life Safety Code or appropriate Health Code) that requires immediate interim abatement and/or long-term permanent abatement. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

    - **Mission Need**. A requirement that addresses a threat or risk to carrying out the mission of the organization. Needs related to administration and providing services (transportation, recreation, grazing, etc.). Needs not covered by health and safety or natural resource protection. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

    - **Non-Critical Need**. A requirement that addresses potential risk to public or employee safety or health, compliance with codes, standards, regulations etc., or

needs that address potential adverse consequences to natural resources or mission accomplishment. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- Resource Protection Need. A requirement that addresses a threat or risk of damage, obstruction, or negative impact to a natural resource. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Obliteration** (1). To eliminate completely so as to leave no trace. (Webster)

- **Obliteration** (2). The reclamation and or restoration of land to resource production from that of a transportation facility. (FSH 7709.54, no longer in print)

- **Objective Maintenance Level**. The maintenance level to be assigned at a future date considering future road management objectives, traffic needs, budget constraints, and environmental concerns. The objective maintenance level may be the same as, or higher or lower than, the operational maintenance level. (FSH 7709.58, 12.3)

- **Off-Highway Vehicle** (1). Any motorized vehicle designed for or capable of cross county travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain. (36 CFR 212.1)

- **Off-Highway Vehicle** (2). Any motorized vehicle designed for or capable of cross county travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain; except that term excludes (A) any registered motorboat, (B) any fire, military, emergency or law enforcement vehicle when used for emergency purposes, and any combat or combat support vehicle when used for national defense purposes, and (C) any vehicle whose use is expressly authorized by the respective agency head under a permit, lease, license, or contract. (EO 116-44 as amended by EO 11989). See also FSM 2355. 01 - Exhibit 01.

- **Open to Public Travel** (1). The road section is available, except during scheduled periods, extreme weather or emergency conditions, passable by four-wheel standard passenger cars, and open to the general public for use without restrictive gates, prohibitive signs, or regulation other than restrictions based on size, weight, or class of registration. Toll plazas of public toll roads are not considered restrictive gates. (23 CFR 460.2)

- **Open to Public Travel** (2). Except during scheduled periods, extreme weather conditions, or emergencies, open to the general public for use with a standard passenger auto, without restrictive gates or prohibitive signs or regulations, other than for general traffic control or restrictions based on size, weight, or class of registration. (23 CFR 660.103)

- **Operational Maintenance Level**. The maintenance level currently assigned to a road considering today's needs, road condition, budget constraints, and environmental concerns. It defines the level to which the road is currently being maintained. (FSH 7709.58, 12.3)

- **Passenger Cars**. These include passenger cars of all sizes, sport/utility vehicles, minivans, vans and pickup trucks. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Permit**. A special use authorization which provides permission, without conveying an interest in land, to occupy and use National Forest System land or facilities for specified purposes, and which is both revocable and terminable. (36 CFR 251.51)

- **Primary Maintainer**. The agency or party having primary (largest share) financial responsibility for maintenance. (FSH 7709.58, 13)

- **Private Road**. A road under private ownership authorized by easement to a private party, or a road which provides access pursuant to a reserved or private right. (FS-643, Roads Analysis; Informing Decisions About Managing the National Forest Transportation System, August 1999.)

- **Public Road**. Any road or street under the jurisdiction of and maintained by a public authority and open to public travel. (23 USC 101)

- **Reconstruction**. To construct again. (Webster)

- **Repair**. Work to restore a damaged, broken, or worn-out fixed asset, component, or item of equipment to normal operating condition. Repairs may be done as annual maintenance or deferred maintenance activities. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Replacement**. Substitution or exchange of an existing fixed asset or component with one having essentially the same capacity and purpose. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Restoration**. To bring back to an original state. (Webster)

- **Road** (1). A motor vehicle route over 50 inches wide, unless identified and managed as a trail. (36 CFR 212.1)

- **Road** (2). A general term denoting a facility for purposes of travel by vehicles greater than 50 inches width. Includes only the area occupied by the road surface and cut and fill slopes. (FSM 2355.05)

- **Road Construction or Reconstruction**. Supervising, inspecting, actual building, and incurrence of all costs incidental to the construction or reconstruction of a road. (36 CFR 212.1)

- **Road Decommissioning**. Activities that result in the stabilization and restoration of unneeded roads to a more natural state. (36 CFR 212.1)

- **Road Maintenance**. The ongoing upkeep of a road necessary to retain or restore the road to the approved road management objective. (FSM 7705)

- **Road Management Objectives**. Defines the intended purpose of an individual road based on management area direction and access management objectives. Road management objectives contain design criteria, operation criteria, and maintenance criteria. (FSH 7709.55, 33)

- **Roadway**. The portion of a highway, including shoulders and auxiliary lanes, for vehicular use. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Routine Maintenance**. Work that is planned to be accomplished on a continuing basis, generally annually or more frequently. (FSH 7709.58, 13.41)

- **Other than Routine Maintenance**. Work that can be deferred without loss of road serviceability, until such time that the work can be economically or efficiently performed. The frequency of such work is generally longer than a year. (FSH 7709.58, 13.41)

- **Running Speed**. The speed at which an individual vehicle travels over a highway section. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Service Life**. The length of time that a facility is expected to provide a specified service. (FSH 7709.56b, 05)

- **Special Use Authorization**. A permit, term permit, lease, or easement which allows occupancy, use, rights, or privileges of National Forest System land. (36 CFR 251.51)

- **Subject to the Highway Safety Act** (HSA). National Forest System roads that are open to use by the public for standard passenger cars. This includes roads with access restricted on a seasonal basis and roads closed during extreme weather conditions or for emergencies, but which are otherwise open for general public use. (FSM 7705)

- **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. (36 CFR 212.1)

- **Traffic Service Level**. Describes the significant characteristics and operating conditions of a road. (FSM 7705). See also FSH 7709.56, Chapter 4.

- **Trail**. A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail. (36 CFR 212.1)

- **Travel Route**. A road, river or trail, that is open for use by members of the general public. (36 CFR 292.21)

- **Traveled Way**. The portion of the roadway used for the movement of vehicles, exclusive of shoulders and auxiliary lanes. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets).

- **Trucks**. These include single-unit, tractor-semitrailer combinations and tractor-semitrailer in combination with additional trailers. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Unauthorized Road or Trail**. A road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas. (36 CFR 212.1)

  Unauthorized roads are categorized into two types and recorded in the SYSTEM linear event in the Infra Travel Routes database. The two types are:

  - **Undetermined**. Roads where long term purpose and need has yet to be determined, and

- **Not Needed**. Roads not needed for long-term management of national forest resources as determined through an appropriate planning document. (Travel Routes National Data Dictionary for Roads)

- **Vehicle**. Any device in, upon, or by which any person or property is or may be transported, including any frame, chassis, or body of any motor vehicle, except devices used exclusively upon stationary rails or tracks. (36 CFR 261.2)

Appendix B – Road Cost Calculations

Alternative 2					
	Item Description	Estimated Quantity	Unit	Unit Price	Cost
NFSR	New construction	15.63	Mile	$146,559	$2,290,717
	Existing road prism	1.58	Mile	$40,000	$63,200
	Reconditioning	5.76	Mile	$3,000	$17,280
	18" cmp	9670.37	Linear foot	$38	$367,474
	24" cmp	1768.69	Linear foot	$45	$79,591
	36" cmp	849.89	Linear foot	$82	$69,691
	48" cmp	689.1	Linear foot	$142	$97,852
	60" cmp	114.85	Linear foot	$234	$26,875
	Log Culvert	20	Linear foot	$156	$3,120
	Log Stringer Bridge	262	Linear foot	$138.49	$36,284
	Modular Bridge	100	Linear foot	$2,518	$251,800
Temp	New construction	12.9	Mile	$131,523	$1,696,647
	Existing road prism	1.97	Mile	$40,000	$78,800
	18" cmp	6260.27	Linear foot	$38	$237,890
	24" cmp	1144.99	Linear foot	$45	$51,525
	36" cmp	550.19	Linear foot	$82	$45,116
	Log Stringer Bridge	0	Linear foot	$138.49	$0
	Modular Bridge	0	Linear foot	$0	$0
	LTF	0	Lump Sum	$60,000	$0
				Total Cost =	$5,413,862

Alternative 3					
	Item Description	Estimated Quantity	Unit	Unit Price	Cost
NFSR	New construction	14.17	Mile	$146,559	$2,076,741
	Existing road prism	1.58	Mile	$40,000	$63,200
	Reconditioning	5.76	Mile	$3,000	$17,280
	18" cmp	9055.71	Linear foot	$38	$344,117
	24" cmp	1656.27	Linear foot	$45	$74,532
	36" cmp	795.87	Linear foot	$82	$65,261
	48" cmp	645.3	Linear foot	$142	$91,633
	60" cmp	107.55	Linear foot	$234	$25,167
	Log Culvert	16	Linear foot	$156	$2,496

	Log Stringer Bridge	155	Linear foot	$138	$21,466
	Modular Bridge	0	Linear foot	$2,518	$0
Temp	New construction	12.88	Mile	$131,523	$1,694,016
	Existing road prism	1.21	Mile	$40,000	$48,400
	18" cmp	5931.89	Linear foot	$38	$225,412
	24" cmp	1084.93	Linear foot	$45	$48,822
	36" cmp	521.33	Linear foot	$82	$42,749
	Log Stringer Bridge	0	Linear foot	$138	$0
	Modular Bridge	0	Linear foot	$0	$0
	LTF	0	Lump Sum	$60,000	$0
				Total Cost =	**$4,841,292**

Alternative 4					
	Item Description	Estimated Quantity	Unit	Unit Price	Cost
NFSR	New construction	14.73	Mile	$146,559	$2,158,814
	Existing road prism	1.38	Mile	$40,000	$55,200
	Reconditioning	5.35	Mile	$3,000	$16,050
	18" cmp	9034.66	Linear foot	$38	$343,317
	24" cmp	1652.42	Linear foot	$45	$74,359
	36" cmp	794.02	Linear foot	$82	$65,110
	48" cmp	643.8	Linear foot	$142	$91,420
	60" cmp	107.3	Linear foot	$234	$25,108
	Log Culvert	20	Linear foot	$156	$3,120
	Log Stringer Bridge	262	Linear foot	$138	$36,284
	Modular Bridge	0	Linear foot	$2,518	$0
Temp	New construction	14.75	Mile	$131,523	$1,939,964
	Existing road prism	1.46	Mile	$40,000	$58,400
	18" cmp	6824.41	Linear foot	$38	$259,328
	24" cmp	1248.17	Linear foot	$45	$56,168
	36" cmp	599.77	Linear foot	$82	$49,181
	Log Stringer Bridge	0	Linear foot	$138	$0
	Modular Bridge	0	Linear foot	$0	$0
	LTF	0	Lump Sum	$60,000	$0
				Total Cost =	**$5,231,822**

Alternative 5					
	Item Description	Estimated Quantity	Unit	Unit Price	Cost
NF	New construction	11.44	Mile	$146,559	$1,676,635

	Existing road prism	1.01	Mile	$40,000	$40,400
	Reconditioning	4.06	Mile	$3,000	$12,180
	18" cmp	6950.71	Linear foot	$38	$264,127
	24" cmp	1271.27	Linear foot	$45	$57,207
	36" cmp	610.87	Linear foot	$82	$50,091
	48" cmp	495.3	Linear foot	$142	$70,333
	60" cmp	82.55	Linear foot	$234	$19,317
	Log Culvert	20	Linear foot	$156	$3,120
	Log Stringer Bridge	168	Linear foot	$138	$23,266
	Modular Bridge	100	Linear foot	$2,518	$251,800
Temp	New construction	7.46	Mile	$131,523	$981,162
	Existing road prism	1.64	Mile	$40,000	$65,600
	18" cmp	3831.1	Linear foot	$38	$145,582
	24" cmp	700.7	Linear foot	$45	$31,532
	36" cmp	336.7	Linear foot	$82	$27,609
	Log Stringer Bridge	0	Linear foot	$138	$0
	Modular Bridge	0	Linear foot	$0	$0
	LTF	0	Lump Sum	$60,000	$0
				Total Cost =	**$3,719,960**

Appendix C – Travel Analysis

Wrangell Island Road Management Strategies

Road Status	Road Number	Road Name	Begin Mile Post	Ending Mile Post	Segment Length	SUBSISTENCE RESOURCES AND ACTIVITIES	TRADITIONAL METHODS OF SUBSISTENCE ACCESS CURRENTLY USED	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Remarks
								Is the road proposed for Reconditioning work. Objective Maintenance Level (OBML) long-term maintenance plan. ATM Plan institutes a system of route designations for motor vehicle use.					

• Alternative 1 Objective Maintenance Level (OBML) on existing roads are the decision from the Access Travel Management (ATM) Plan for WRD (USDA Forest Service 2007) and does not reflect current conditions.

Reconditioning: Roads proposed for reconditioning are existing NFS roads currently in a maintenance level status of closed. Road reconditioning can vary from replacing all removed structures and brushing the re-vegetated roadway, to simply blading drivable water bars.

OBML 1: The road maintenance objective is to be closed following timber harvest operations.

ATM
- **Closed:** Road is designated for no public motorized vehicle access. Administrative and permitted motorized access could be allowed.
- **Open OHV**: Road is designated as a yearlong motorized trail for access by off-highway motorized vehicles (OHV) less than or equal to 50" width.

OBML 2: The road maintenance objective is to be open following timber harvest operations.
- **ATM Mixed Use:** Road is designated for access by full-sized, highway-legal vehicles, but also allows access for OHVs, ATVs, and other non-highway-legal vehicles.

Decommission: The road maintenance objective is to be decommissioned following timber harvest operations. Manage as a road not needed for long-term management and will be decommissioned. Decommissioning will remove the road from the National Forest System inventory.
- **ATM Road Not Needed** is designated for no public motorized vehicle access to be removed from the system..

Wrangell Island Road Management Strategies

Road Status	Road Number	Road Name	Begin Mile Post	Ending Mile Post	Segment Length	SUBSISTENCE RESOURCES AND ACTIVITIES	TRADITIONAL METHODS OF SUBSISTENCE ACCESS CURRENTLY USED	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Remarks
Existing	6250	PATS TTF	0.0	0.3	0.3	HUNTING FISHING FREE USE	Mixed Traffic	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OPEN ML3 NO CHANGE LEAVE OPEN
Proposed	6251		0.0	1.3	1.3			Not in alt	OBML 2 Mixed Use	Not in alt	OBML 2 Mixed Use	OBML 1 Closed	
Existing	6255	PATS PIT	0.0	0.6	0.6	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 1 Closed	
Existing	6259	PATS CREEK	0.0	5.4	5.4	HUNTING FISHING FREE USE	Mixed Traffic	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OPEN ML3 NO CHANGE LEAVE OPEN
Existing	6260	RIDGE	0.0	1.0	1.0	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 1 Closed	ML 2, open to public. Free use area, subsistence.
Existing	6260	RIDGE	1.0	1.7	0.7	HUNTING		OBML 1 CLOSED	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	
Existing	6260	RIDGE	1.7	2.0	0.3	HUNTING		OBML 1 CLOSED	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	OBML 1 CLOSED	
Existing	6262	MONKEY	0.0	0.2	0.2	HUNTING FISHING FREE USE	Mixed Traffic	Decommission Road not needed	Decommission Road not needed	Decommission Road not needed	Decommission Road not needed	Decommission Road not needed	
Existing	6263	WEST FORK CREEK	0.0	2.4	2.4	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN
Existing	6265	MCCORMICK CREEK	0.0	14.6	14.6	HUNTING FISHING FREE USE	Mixed Traffic	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OPEN ML3 NO CHANGE LEAVE OPEN
Existing	6267	MEMO	0.0	13.9	13.9	HUNTING FISHING FREE USE	Mixed Traffic	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OPEN ML3 NO CHANGE LEAVE OPEN

Wrangell Island Road Management Strategies

Road Status	Road Number	Road Name	Begin Mile Post	Ending Mile Post	Segment Length	SUBSISTENCE RESOURCES AND ACTIVITIES	TRADITIONAL METHODS OF SUBSISTENCE ACCESS CURRENTLY USED	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Remarks
Existing	6270	FOOLS INLET	0.0	9.9	9.9	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN
Existing	6271	LONG LAKE	0.0	0.3	0.3	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN
Existing	6273	STUMBLE CREEK	0.0	1.3	1.3	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN
Existing	6275	BOZO CREEK	0.0	0.9	0.9	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Closed	
Proposed	6275	BOZO CREEK	0.9	1.2	0.3			Not in alt	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Closed	
Existing	6276	PAW	0.0	2.7	2.7	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN
Proposed	6276	PAW	2.7	2.9	0.2			Not in alt	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 1 Closed	ML2, subsistence, recreation
Existing	6277	UPROOT	0.0	1.4	1.4	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Closed	Silv needs, subsistence, rec
Existing	6296	WACKE	0.0	1.2	1.2	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Closed	Leave as OBJ ML 1, method A, Open OHV access

Wrangell Island Road Management Strategies

Road Status	Road Number	Road Name	Begin Mile Post	Ending Mile Post	Segment Length	SUBSISTENCE RESOURCES AND ACTIVITIES	TRADITIONAL METHODS OF SUBSISTENCE ACCESS CURRENTLY USED	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Remarks
Existing	6299	THOMS CREEK	0.0	5.6	5.6	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN 1 BRIDGE IS AT END OF SECTION. Provides access to Thoms Lake.
Existing	6299	THOMS CREEK	5.6	9.0	3.4	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 1 Closed	OPEN ML2 NO CHANGE LEAVE OPEN 1 BRIDGE IS AT END OF SECTION. Provides access to Thoms Lake.
Existing	50001	BOULDER	0.0	0.5	0.5	HUNTING FISHING FREE USE	Mixed Traffic	Decommission Road not needed	Reconditioning OBML 1 Open OHV	Reconditioning OBML 1 Open OHV	Reconditioning OBML 1 Open OHV	Reconditioning Decommission Road not needed	Road needs reconstruction work. Moose hunting Open OHV access.
Proposed	50001	BOULDER	0.5	1.3	0.8	HUNTING , FREE USE	Mixed Traffic	Not in alt	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	Temp this Alt Temp this Alt	Rd needs reconstruction work. Moose hunting Open OHV access.
Existing	50002	DEER RIDGE	0.0	1.5	1.5	HUNTING FISHING FREE USE	Mixed Traffic	Decommission Road not needed	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	Decommission Road not needed	Change to ML 1, Open OHV access
Existing	50003	NUGGET	0.0	0.2	0.2	HUNTING FISHING FREE USE	Mixed Traffic	Decommission Road not needed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	Decommission Road not needed	

Wrangell Island Road Management Strategies

Road Status	Road Number	Road Name	Begin Mile Post	Ending Mile Post	Segment Length	SUBSISTENCE RESOURCES AND ACTIVITIES	TRADITIONAL METHODS OF SUBSISTENCE ACCESS CURRENTLY USED	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Remarks
Existing	50005	COY	0.0	0.2	0.2	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OPEN ML2 NO CHANGE LEAVE OPEN
Existing	50009	ELDER	0.0	0.5	0.5			OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	OBML 1 Closed	
Existing	50009	ELDER	0.5	1.0	0.5			OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	
Existing	50016	JUG	0.0	0.3	0.3	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	
Existing	50022	GARNET	0.0	0.2	0.2	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN BRIDGE AT END OF SECTION.
Existing	50022	GARNET	0.2	2.0	1.8	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Closed	Remove or storm proof at risk culverts to maintain Open OHV access.
Existing	50024	BARB	0.0	1.4	1.4	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	
Proposed	50024	BARB	1.4	2.5	1.1			Not in alt	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	
Existing	50029	YUNSHOOKUH LOOP CAMPGROUND	0.0	0.1	0.1	HUNTING FISHING FREE USE	Mixed Traffic	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OPEN ML3 NO CHANGE LEAVE OPEN
Existing	50030	BASIN	0.0	0.7	0.7	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	OBML 1 Closed	

Wrangell Island Road Management Strategies

Road Status	Road Number	Road Name	Begin Mile Post	Ending Mile Post	Segment Length	SUBSISTENCE RESOURCES AND ACTIVITIES	TRADITIONAL METHODS OF SUBSISTENCE ACCESS CURRENTLY USED	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Remarks
Proposed	50030	BASIN	0.7	1.6	0.9			Not in alt	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	Not in alt	
Existing	50031	L H DOME	0.0	0.5	0.5			OBML 1 Closed	Reconditioning OBML 1 Open OHV	Reconditioning OBML 1 Open OHV	Reconditioning OBML 1 Open OHV	Reconditioning OBML 1 Closed	
Existing	50031	L H DOME	0.5	0.6	0.1			OBML 1 Closed	Not in alt	Not in alt	Not in alt	Not in alt	
Existing	50032	POINT	0.0	0.2	0.2			OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	OBML 1 Closed	No Change. Wood waste storage, no access is allowed.
Existing	50032	POINT	0.2	0.3	0.1			OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	No Change. Wood waste storage, no access is allowed.
Existing	50033	ANITA VIEW	0.0	0.3	0.3	HUNTING FISHING FREE USE	Mixed Traffic	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OPEN ML3 NO CHANGE LEAVE OPEN
Existing	50034	TURN	0.0	2.2	2.2			OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	
Existing	50035	HIGHLINE CAMPSITE	0.0	0.1	0.1	HUNTING FISHING FREE USE	Mixed Traffic	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OPEN ML3 NO CHANGE LEAVE OPEN
Existing	50040	HIGHBUSH	0.0	1.3	1.3	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN

Wrangell Island Road Management Strategies

Road Status	Road Number	Road Name	Begin Mile Post	Ending Mile Post	Segment Length	SUBSISTENCE RESOURCES AND ACTIVITIES	TRADITIONAL METHODS OF SUBSISTENCE ACCESS CURRENTLY USED	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Remarks
Existing	50041	BEAVER CREEK	0.0	0.1	0.1	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	
Existing	50041	BEAVER CREEK	0.1	1.0	0.9	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	OBML 1 Closed	
Proposed	50042		0.0	0.5	0.5			Not in alt	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	Not in alt	
Existing	50049	LOWER SALAMANDER CAMPGROUND	0.0	0.1	0.1	HUNTING FISHING FREE USE	Mixed Traffic	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OPEN ML3 NO CHANGE LEAVE OPEN
Existing	50050	SALAMANDER	0.0	5.3	5.3	HUNTING FISHING FREE USE	Mixed Traffic	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OBML 3 Mixed Use	OPEN ML3 NO CHANGE LEAVE OPEN
Existing	50050	SALAMANDER	5.3	5.7	0.4			OBML 1 Closed	OBML 1 Closed	Reconditioning OBML 1 Closed	OBML 1 Closed	Reconditioning OBML 1 Closed	
Existing	50051	OLD HERMIT	0.0	1.5	1.5	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 1 Closed	Borough & Power company want to see it open. Needs road work.
Existing	50051	OLD HERMIT	1.5	2.7	1.2	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	Reconditioning OBML 2 Mixed Use	Reconditioning OBML 2 Mixed Use	Reconditioning OBML 2 Mixed Use	Reconditioning OBML 1 Closed	Borough & Power company want to see it open. Needs road work.
Proposed	50051	OLD HERMIT	2.7	3.2	0.5			Not in alt	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 1 Closed	Borough & Power company want to see it open. Structures need to be replaced (large pipes)

Wrangell Island Road Management Strategies

Road Status	Road Number	Road Name	Begin Mile Post	Ending Mile Post	Segment Length	SUBSISTENCE RESOURCES AND ACTIVITIES	TRADITIONAL METHODS OF SUBSISTENCE ACCESS CURRENTLY USED	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Remarks
Existing	50052		0.0	1.1	1.1	HUNTING FISHING FREE USE	Mixed Traffic	OBML 1 Closed	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 1 Closed	Needed for the next 5yrs for silv. On current snowmobile route and accesses high country. Potential timber units beyond rd.
Existing	50053	SHOTGUN	0.0	0.1	0.1	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN
Existing	50053	SHOTGUN	0.1	0.3	0.2			OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	Reconditioning OBML 1 Closed	OBML 1 Closed	
Existing	50053	SHOTGUN	0.3	0.4	0.1			OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	
Existing	50054	LOST JOE	0.0	1.9	1.9	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN
Existing	50055	NUFIE	0.0	2.5	2.5	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN
Proposed	50058		0.0	0.9	0.9			Not in alt	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 1 Closed	
Existing	50060	BIG HOLLOW	0.0	3.7	3.7	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN

Wrangell Island Road Management Strategies

Road Status	Road Number	Road Name	Begin Mile Post	Ending Mile Post	Segment Length	SUBSISTENCE RESOURCES AND ACTIVITIES	TRADITIONAL METHODS OF SUBSISTENCE ACCESS CURRENTLY USED	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Remarks
Existing	50060	BIG HOLLOW	3.7	4.3	0.6			OBML 1 Closed	Reconditioning OBML 1 Open OHV	Reconditioning OBML 1 Open OHV	Reconditioning OBML 1 Open OHV	Reconditioning OBML 1 Closed	High hunting area. Open OHV access
Existing	50061		0.0	0.5	0.5			OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	
Existing	50061		0.5	0.9	0.4			OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	
Proposed	50062		0.0	1.4	1.4			Not in alt	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 1 Closed	ML1, Open OHV, Rec, subsistence
Proposed	50062		1.4	1.9	0.5			Not in alt	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Closed	ML1, Open OHV, Rec, subsistence
Proposed	50062		1.9	2.1	0.2			Not in alt	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	Not in alt	ML1, Open OHV, Rec, subsistence
Proposed	50062		2.1	2.3	0.2			Not in alt	OBML 1 Open OHV	Not in alt	OBML 1 Open OHV	Not in alt	ML1, Open OHV, Rec, subsistence
Proposed	50064		0.0	0.2	0.2			Not in alt	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	Not in alt	
Proposed	50068		0.0	0.9	0.9			Not in alt	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	
Proposed	50073		0.0	1.9	1.9			Not in alt	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Closed	Open OHV, Rec
Proposed	50073		1.9	2.5	0.6			Not in alt	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	Not in alt	Open OHV, Rec
Proposed	50074		0.0	1.3	1.3			Not in alt	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Closed	Access rec and subsistence opportunities.
Proposed	50074		1.3	1.7	0.4			Not in alt	OBML 1 Open OHV	OBML 1 Open OHV	Not in alt	OBML 1 Closed	Access rec and subsistence opportunities.
Proposed	50075		0.0	0.9	0.9			Not in alt	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	

Wrangell Island Road Management Strategies

Road Status	Road Number	Road Name	Begin Mile Post	Ending Mile Post	Segment Length	SUBSISTENCE RESOURCES AND ACTIVITIES	TRADITIONAL METHODS OF SUBSISTENCE ACCESS CURRENTLY USED	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Remarks
Proposed	50076	COZY	0.0	0.6	0.6			Not in alt	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 1 Closed	Original road number was 50076. ML2, open to public. Subsistence, free use area.
Proposed	50076	COZY	0.6	1.2	0.6			Not in alt	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Open OHV	OBML 1 Closed	
Proposed	50081		0.0	0.4	0.4			Not in alt	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	Not in alt	
Proposed	50081		0.4	1.4	1.0			Not in alt	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	Not in alt	
Proposed	50082		0.0	0.2	0.2			Not in alt	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	
Proposed	50082		0.2	0.7	0.5			Not in alt	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	Not in alt	
Proposed	50087		0.0	0.1	0.1			Not in alt	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	Not in alt	
Proposed	50092		0.0	0.2	0.2			Not in alt	OBML 1 Closed	OBML 1 Closed	OBML 1 Closed	Not in alt	
Existing	50999	WRANGELL RANGER STATION	0.0	0.1	0.1			OBML 4 Mixed Use	OBML 4 Mixed Use	OBML 4 Mixed Use	OBML 4 Mixed Use	OBML 4 Mixed Use	
Existing	50999_0.008R	WRD PARKING	0.0	0.0	0.0	HUNTING FISHING FREE USE	Mixed Traffic	OBML 4 Mixed Use	OBML 4 Mixed Use	OBML 4 Mixed Use	OBML 4 Mixed Use	OBML 4 Mixed Use	OPEN ML3 NO CHANGE LEAVE OPEN
Existing	6267_0.87R		0.0	0.1	0.1	HUNTING FISHING FREE USE	Mixed Traffic	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OBML 2 Mixed Use	OPEN ML2 NO CHANGE LEAVE OPEN