

**PRINCE WILLIAM SOUND/COPPER RIVER AREA
TRANSPORTATION PLAN**

**Preliminary Environmental Issues Identification
Technical Memorandum**

prepared for the

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PURPOSE

The purpose of this memorandum is to identify and analyze relevant environmental issues and constraints that may affect the selection and implementation of proposed regional transportation alternatives under consideration in the Prince William Sound/Copper River area. The intent of the study is to locate those places within the Prince William Sound/Copper River area which are already experiencing impacts or are particularly sensitive to impacts and to identify important environmental resources, known sensitive areas and management issues and associated limitations. To some degree, the implications of these issues cannot be fully determined until specific regional transportation alternatives are developed. However, during the alternatives identification and evaluation portion of the Prince William Sound/Copper River Area Transportation Plan, this memorandum will be used to help determine the implications and limitations of natural resources, sensitive areas, and land management issues with respect to proposed regional transportation alternatives.

Conducted as a desktop exercise, it is important to note that this technical memorandum is not a suitable substitute for project specific issue identification which will be accomplished through public and agency involvement. However, regional transportation alternatives that exacerbate impacts in areas already experiencing impacts, or which introduce new impacts to the areas identified in this memorandum are likely to be examined with scrutiny from the public regulatory agencies, and land management agencies.

METHODOLOGY

The approach used in the identification and examination of environmental constraints and issues in the Prince William Sound/Copper River area relied on a review of existing planning efforts conducted by the Alaska Coastal Management Program, Alaska Department of Community Development, Alaska Department of Environmental Conservation, Alaska Department of Fish and Game, Alaska Department of Natural Resources, Alaska Department of Transportation and Public Facilities, U.S. Forest Service (Chugach National Forest), and the U.S. Fish and Wildlife Service. Coastal Management Plans, recent projects requiring National Environmental Policy Act (NEPA) documentation, and Comprehensive Land Management Plans were also reviewed to identify and analyze important environmental resources, known sensitive areas, and environmental issues. The following sections describe the documents reviewed.

Coastal Management Plans. Coastal Management programs in the Prince William Sound/Copper River area include resource inventories which describe the coastal habitats, major cultural resources, predominant land and water uses, major land and resource ownership and management responsibilities, and major historic, prehistoric, and archaeological resources. The discussion of transportation needs, objectives, and goals included in these documents are also pertinent to the Prince William Sound/Copper River area transportation planning effort. Enforceable policies, required of the coastal management programs, also cover infrastructure development and could have an effect on transportation alternatives. A review of the Cordova Coastal Management Plan, Valdez Coastal Management Plan, Kenai Peninsula Borough, and the Whittier Coastal Management Plan was conducted.

National Environmental Policy Act Documents (NEPA). NEPA based documents often provide an excellent source of documentation of environmentally sensitive areas and related potential environmental information. Several NEPA-based documents from projects in the Prince William Sound/Copper River area provide important information on the environmental conditions, issues, constraints, and land management constraints pertinent to development of transportation alternatives. The most relevant NEPA documents include environmental impact statements for the Chugach National Forest Plan (currently under revision), the Whittier Access Project, Copper River Highway.

Land Management Plans. Environmental issues and constraints relating to transportation development in the Prince William Sound/Copper River area were also identified through a review of land management plans. These provide important information, particularly as a supplement to coastal management documents. The following plans were reviewed for environmental issues relating to transportation development; Whittier Comprehensive Plan, Prince William Sound Area Plan, Chugach National Forest Plan, Wrangell-St. Elias National Park, Cordova Comprehensive Development Plan, Management Plan for State Marine Parks in Prince William Sound and Resurrection Bay, Exxon Valdez Oil Spill Prince William Sound Recreation Project, Shepard Point Road Cultural Resources Survey, Seward Comprehensive Plan, and the Alaska National Interest Lands Conservation Act.

ENVIRONMENTAL ISSUES AND CONSTRAINTS

AIR QUALITY

Established by the Environmental Protection Agency, National Ambient Air Quality Standards (NAAQS) regulate the allowable emissions for several pollutants classified as “criteria pollutants”. Criteria pollutants with established National Ambient Air Quality Standards include carbon monoxide (CO), small particulate matter (PM10), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), and lead (Pb). Transportation alternatives that are located in non-attainment areas or where investments could cause violations of one or more of the NAAQS, require a quantitative analysis of the impacts, which are typically part of the environmental process.

Air quality in the Prince William Sound/Copper River area is generally characterized as high and typically measures well under all National Air Quality Standards. However, as is common in Alaska, the Prince William Sound/Copper River area is subject to periods of high concentrations of suspended particulates. Naturally occurring phenomena such as windblown glacial silt, volcanic eruptions, and forest fires can dramatically increase the concentrations of suspended particulate matter during the snow-free season. During the winter season pollution sources are generally reduced, although meteorological events, such as temperature inversions, and topographical features that produce air drainage into confined areas with poor dispersion can produce sources of air pollution for major communities.

Particulates in the form of dust or smoke resulting from human activities such as construction or traffic on unpaved roads are typically limited to Cordova, Valdez, and Whittier. Major stationary sources of nationally regulated criteria pollutants are limited to the Alyeska Terminal Power Plant in Valdez. Other sources of nationally regulated criteria pollutants come from tankers used to haul crude oil from the Alyeska Terminal.

NOISE

Ambient noise levels in the Prince William Sound/Copper River area are associated with marine traffic, small aircraft and associated landing strips, local automobile traffic and long-haul trucks, and fishing industry activities. Many types of transportation investments have the potential to increase noise and vibration levels. Sources of transportation noise typically include vehicle operating noise whether from cars, trucks, buses, airplanes, or marine vessels. Transportation noise may affect a community in two ways: (1) the noise may be frequent enough and loud enough to increase the cumulative noise considerably, or, (2) the noise may last only a short duration which does not increase the overall noise level considerably but which may cause an impact. Noise impacts are exacerbated by topography in many locations, where mountainous terrain forms natural amphitheatres or walls which bounce the sound back into the community. Airstrips and seaplane landing areas close to a community also cause noise impacts, particularly where approach areas take planes over the community as in Chenega Bay and Tatitlek. Areas sensitive to excessive noise will likely be an issue where it has the ability to adversely affect community and wildlife well-being.

WATER QUALITY

Typically, water quality can be affected by transportation alternatives in one of three ways: (1) dredging, discharging fill material, or introducing pollutants into the water, (2) altering surface drainage patterns or increasing runoff; or, (3) affecting the water table by dewatering or contaminating the ground water. Dredging or discharging of fill material into waters of the United States, including wetlands habitat, must comply with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Wastewater from maintenance facilities or storm water runoff can be a source of contamination. A National Pollutant Discharge Elimination System permit may be required under the Clean Water Act, if wastewater is discharged into a storm water system.

On March 24, 1989, the tanker vessel *Exxon Valdez* grounded on Bligh Reef in Prince William Sound causing the largest oil spill to date in U.S. waters. The result was the discharge of approximately 11 million gallons of Alaska North Slope Crude into marine waters. The spill spread at least 470 miles along the Alaska Peninsula and cost nearly \$3 billion dollars to cleanup. More than half of Prince William Sound was subject to some degree of oil contamination. From Bligh Reef the oil traveled in a westerly direction to Wells Passage and southwesterly to the east side of Montague Island and approximately everywhere in between.

Located on a 11 mile long fjord across from Valdez, the Alyeska Marine Terminal supplies crude oil to as many as 70 tankers a month. Incoming oil flow is measured up to 88,000 barrels per hour and is either sent to storage tanks or directly to tankers. It is likely that the Alyeska Marine Terminal also has some degree of impact on water quality due to the sheer volume and movement of oil and the related activities of tankers.

Presently, the marine waters of Prince William Sound are typically influenced by discharges of sewage effluent, process waters and wastes from seafood operations, oily water discharges from bilge pumping, and spills of petroleum products associated with the transportation, storage, and distribution of gasoline, fuel, oil, diesel, and lubricants. Though high levels of rainfall generally provide communities with an adequate supply of good water, water quality is considered to be a major issue by local residents. Water quality concerns and Alaska Department of Environmental Conservation (ADEC) regulations could affect the development of transportation improvements that have the potential to impact water bodies.

Non-point source pollution is also a relevant transportation issue. The 1990 Coastal Zone Management Act Reauthorization Amendments (Section 6217) and ADEC Alaska Non-Point Source Strategy, currently under development, address management and control of non-point source pollution and should be considered particularly for areas not within managed coastal boundaries. Based on these requirements, the DOT&PF has adopted a Best Management Practices (BMPs) manual to address non-point source pollution, which is modeled on standards established by the American Association of State Highway and Transportation Officials. Any transportation project receiving Federal Highway Administration funds must now meet these non-point source guidelines. Moreover, the Alaska Harbormasters Association are developing a set of BMPs in conjunction with the regulatory agencies to address runoff, drainage, and water quality concerns at boat harbors.

Specific water quality issues were identified through a review of Coastal Management Programs and the State’s Cumulative Impacts in Alaska report. Transportation alternatives that negatively affect the waterbodies listed below will likely face additional public and agency scrutiny.

**Identified Water Quality Issues
Prince William Sound**

Location	Waterbody	Water Quality Issues
Port Fidalgo	Two Moon Bay, Irish Cove	cumulative logging
Resurrection Bay	Thumb Cove and Humpy Cove	overcrowding of boating, potential conflict, high recreation density
Southcentral Alaska	Prince William Sound	commercial over-fishing, logging, runoff
Southcentral Alaska	Prince William Sound	petroleum products from Exxon-Valdez oil spill

Source: HDR Alaska, Inc. Cumulative Impacts in Alaska. June 1995

PROTECTED SPECIES

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531) requires consultation with the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS) to ensure that projects do not jeopardize the continued existence of any Federally threatened or endangered species or result in the destruction or adverse modification of habitat critical to their survival. Generally, marine species are under the jurisdiction of the NMFS. Other species are under jurisdiction of the USFWS. The protection afforded to protected species or their habitat can constrain transportation projects and should be a consideration in the project development phase.

There are several categories of protected species relevant to the Prince William Sound/ Copper River area. An “endangered species” is defined as one that is in danger of extinction throughout all or a significant portion of its range. A “threatened species” is defined as one that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. “Candidate species” are those species for which the USFWS has sufficient information on the specie’s biological vulnerability and threats to support issuance of a proposed rule to list the species under the Endangered Species Act. “Species of concern” refers to species for which a listing of threatened or endangered may be appropriate but which the USFWS has insufficient information to support their listing.

Federally protected species which could inhabit the Prince William Sound/Copper River area were identified through a review of the Comprehensive Planning documents and the endangered, threatened and candidate species lists maintained by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Sensitive plant species lists are maintained

by the US Forest Service and were identified for the Chugach National Forest and may inhabit areas of the Prince William Sound.

Federally Threatened, Endangered, and Protected Species

Status	Species
Federally Listed Threatened Species	Steller Sea Lion
USFWS Species of Concern	Arctic Peregrine Falcon, American Peregrine Falcon, Beluga Whale, Harbor Seal, Northern Fur Seal, Blackpoll Warbler, Gray-cheeked Thrush, Northern Goshawk, Olive-sided Flycatcher, Townsend’s Warbler
Federally Listed Endangered Species	Humpback Whale, Finback Whale, Short-tailed Albatross, American Peregrine Falcon
USFS Sensitive Species	Choris Bog-orchid, Pale Poppy, Circumpolar Starwort, Norberg Arnical, Goose Grass Sedge, Pretty Shooting Star, Unalaska Mist Maid, Truncate Quilwort, Crucifer,

Source: U.S. Fish and Wildlife Service. Endangered, Threatened, and Candidate Species in Alaska. May 1996.

Wildlife Indicator Species. Additionally, the 1984 Chugach National Forest Plan and Final Environmental Impact Statement identified several species to serve as indicators of the effects of management. These species will be monitored by the U.S. Forest Service determine the effects of management activities. Species were selected from three categories. (1) Special Habitat Indicators are species with special habitat needs that may be influenced significantly by planned management programs. (2) Forest Emphasis Species are commonly hunted, trapped, or fished species or species of high non-consumptive recreational value that are receiving special management in the forest. (3) Ecological Indicator Species whose population changes are indicative of management effects on these species, biological communities, or water quality. These species were selected to insure that the needs of the future species were met while also maintaining species richness. Transportation alternatives that adversely affect these species would likely face additional examination.

Species as Indicators of Effects of Management

Bald Eagle	River Otter
Black Bear	Savannah Sparrow
Boreal Chickadee	Sitka black-tailed Deer
Coho Salmon	Sockeye Salmon
Mountain Goat	Three-toed woodpecker
Orange-crowned Warbler	Townsend's Warbler
Pine Siskin	Tree Swallow
Pink Salmon	White-crowned Sparrow
Red Squirrel	Willow Ptarmigan

Source: Final Environmental Impact Statement; Chugach National Forest Plan. U.S. Forest Service. July 1984.

NATURAL HAZARDS

The location and design of transportation improvements are limited and constrained by natural hazards. All of the Prince William Sound/Copper River area is subject to earthquakes and associated tsunamis, slope failure, mass wasting, sea ice, storm surges, flooding, and avalanches. It is important to note that natural hazards exist below sea level as well. Transportation alternatives proposing the use of sea-going vessels should indicate that reference to navigational charts and adherence to established routes are necessary to avoid impact with the natural topographical features of the ocean floor.

The following table lists natural hazards for the Prince William Sound/Copper River area. These hazards were identified through a review of National Wildlife Refuge documents, Coastal Management Programs, and Environmental Impact Statements.

Identified Natural Hazards

District	Hazards
Chenega Bay	Earthquakes and associated ground rupture, ground shaking, ground failure, and tsunamis, avalanches, waves, landslides, winds
Chitina	Earthquakes and associated ground rupture and ground shaking, avalanches, landslides
Cordova	Earthquakes and associated ground rupture, ground shaking, ground failure, and tsunamis, avalanches, waves, landslides, winds

District	Hazards
Seward	Earthquakes, volcanic activity, flooding, tsunamis, avalanches, waves, landslides, winds, coastal erosion and deposition
Tatitlek	Earthquakes and associated ground rupture, ground shaking, ground failure, and tsunamis, avalanches, waves, landslides, winds
Valdez	Earthquakes and associated ground rupture, ground shaking, ground failure, and tsunamis, avalanches, waves, landslides, winds
Whittier	Earthquakes and associated ground rupture, ground shaking, ground failure, and tsunamis, avalanches, waves, landslides, winds

LAND MANAGEMENT

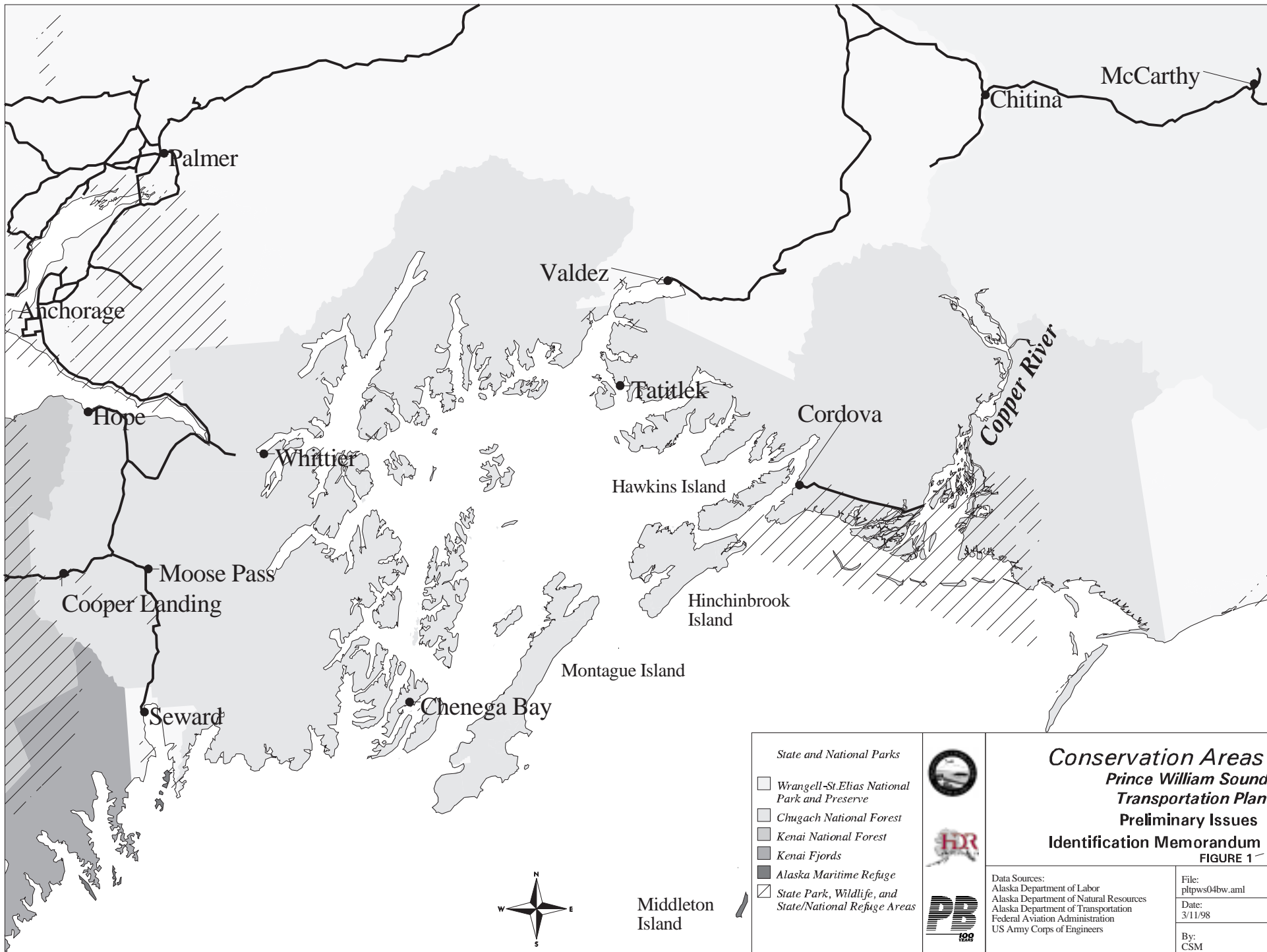
This section identifies environmentally sensitive areas in the Prince William Sound/Copper River area that are managed to protect the environmental resources and sensitive features of the area. Many environmental resources and sensitive areas in the Prince William Sound/Copper River area are protected by special land management status under public ownership. As in the Chugach National Forest Plan, the management and degree of protection is mandated by federal law, while in others the protection is prescribed by state management plans. In some of these areas, transportation improvements may be limited or altogether precluded. Transportation alternatives likely to affect parks, refuges, and recreation areas are subject the provisions of Section 4(f) of the U.S. Department of Transportation (DOT) Act.







National Parks and Monuments. National parks and monuments are managed by the National Park Service. They are protected in statute and by land management plans governing their administration. In general, national parks and monuments are managed to protect the values for which they were established. Management plans covering the areas should be consulted for specific policies. National preserves are managed as a unit of the National Park System in the same manner as a national park except regarding subsistence activities.

A portion of the Wrangell–St. Elias National Park and Preserve is within the boundaries of the Prince William Sound/Copper River study area. Within the study area, Chitina is the closest community to the boundary of this national park. Transportation alternatives in this area will have to consider the recommendations of the Park Master Plan.

The Kenai Fjords National Park abuts the western boundary of the study area, near Seward.

These parks were established by the Alaska National Interest Lands Conservation Act (ANILCA). Title XI of ANILCA governs the routing of transportation systems in conservation system units including these national parks. The conservation system units in the Prince William Sound/Copper River area on shown on the map on the following page.



- State and National Parks*
-  Wrangell-St. Elias National Park and Preserve
 -  Chugach National Forest
 -  Kenai National Forest
 -  Kenai Fjords
 -  Alaska Maritime Refuge
 -  State Park, Wildlife, and State/National Refuge Areas



**Conservation Areas
Prince William Sound
Transportation Plan
Preliminary Issues
Identification Memorandum
FIGURE 1**

Data Sources:
Alaska Department of Labor
Alaska Department of Natural Resources
Alaska Department of Transportation
Federal Aviation Administration
US Army Corps of Engineers

File:
pltpws04bw.aml
Date:
3/11/98
By:
CSM

Middleton Island

State Parks and Recreation Areas. State parks are managed by the Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation. The following state parks and recreation areas are located in the Prince William Sound/Copper River area. State parks are protected by state statute and area-specific management plans. Parks are also subject to Section 4(f) of the U.S. Department of Transportation (DOT).

Identified State Parks and Recreation Areas

State Park	Nearest Community
Bettles Bay State Marine Park	Whittier
Blueberry Lake State Recreation Site	Valdez
Boswell Bay State Marine Park	Cordova
Caines Head State Recreation Area	Seward
Canoe Passage State Marine Park	Cordova
Decision Point State Marine Park	Whittier
Driftwood Bay State Marine Park	Seward
Entry Cove State Marine Park	Whittier
Granite Bay State Marine Park	Whittier
Horseshoe Bay State Marine Park	Whittier
Jack Bay State Marine Park	Valdez
Kayak Island State Marine Park	Cordova
Liberty Falls State Recreation Site	Chitina
Little Tonsina State Recreation Site	Tonsina
Safety Cove State Marine Park	Seward
Sandspit Point State Marine Park	Seward
Sawmill Bay State Marine Park	Valdez
Shoup Bay State Marine Park	Valdez
South Esther Island State Marine Park	Whittier
Squirrel Creek State Recreation Site	Tonsina
Sunny Cove State Marine Park	Seward
Surprise Cove State Marine Park	Whittier

State Park	Nearest Community
Thumb Cove State Marine Park	Seward
Worthington Glacier State Recreation Site	Valdez
Zeigler Cove State Marine Park	Whittier

Source: Alaska Department of Natural Resources. Management Plan for State Marine Parks, Prince William Sound and Resurrection Bay. March 1995; Alaska Atlas. DeLorme Mapping 1982.

The areas noted below were identified using information from the Alaska Department of Natural Resources Parks and Recreation Division and the Alaska Almanac as developed parks and recreation sites and are managed as such. These areas have special land management proscriptions and are also subject to the provisions of Section 4(f) of the USDOT Act which state that “no administrative approval shall be granted for a Department of Transportation action using land from a publicly owned park, recreation area, wildlife and waterfowl refuge, or any significant historic site unless there are no prudent and feasible alternatives to taking this land.”

Identified Developed Recreation Areas

Location	Recreation Area
Chitina	Liberty Falls public camping grounds
Chitina	McCarthy Road public camping grounds
Copper River Delta	Alagnak Slough public use cabins
Copper River Delta	Martin Lake public use cabin
Copper River Delta	Pipeline Lake trail and public use cabins
Green Island	Green Island public use cabin
Hinchinbrook Island	Double Bay public use cabin
Hinchinbrook Island	Hook Point public use cabin
Hinchinbrook Island	Shelter Bay public use cabin
Katalla	Softuk Lagoon public use cabin
Montague Island	Patton Bay public use cabins
Montague Island	San Juan Bay public use cabin
Ptarmigan	Blueberry Lake public camping grounds
Seward	Caines Head public use shelter

Location	Recreation Area
Seward	Tonsina Creek public camping grounds
Tonsina	Little Tonsina public camping grounds
Tonsina	Squirrel Creek public camping grounds
Whittier	Cochrane Bay public use cabin
Whittier	Culross Passage public use cabin
Whittier	Decision Point State Marine Park
Whittier	Entry Cove State Marine Park
Whittier	Lake Shrode, Lake Jack public use cabin
Whittier	Northwest Pigot Bay public use cabin
Whittier	Surprise Cove State Marine Park

Source: Alaska Department of Natural Resources. Management Plan for State Marine Parks. March 1995; Alaska Atlas. DeLorme Mapping. 1992

Wilderness Areas. Wilderness areas in Prince William Sound/Copper River area were established by ANILCA in accordance with the purposes of the Wilderness Act of 1964. Wilderness areas are managed for the preservation of wilderness character, that is, “to preserve the area such that the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.” Generally, roads and motorized access are not allowed except for fixed-wing airplanes, motorboats, and snowmachines. Access is provided for in ANILCA sections 811, 1010, 1110, 1111, 1310, 1315(b), and 1323. Wilderness areas are considered conservation system units and are subject to Title XI of ANILCA. Of the 19 million acre Wrangell–St. Elias National Park, two of the largest wilderness areas extend northeast of Chitina, beyond the study boundary of this project, and east of the Copper River from Chitina to the Wernicke Glacier. However, a few smaller wilderness areas of the Wrangell–St. Elias National Park and Preserve do exist in the study boundaries and are listed below. The Chugach National Forest Plan, which is currently under revision, contains no designated wilderness. However, a large portion of the 2,116,000 acre Nellie Juan–College Fjord Wilderness Study Area has been recommended for wilderness designation and is managed as such. In addition to those areas within the Nellie Juan–College Fjord Wilderness Study area, the following nine Chugach Plan-Designated National Forest RARE II Further Planning areas and proposed ANILCA additions to the Chugach National Forest are not within the Nellie Juan–College Fjord Wilderness Study Area and may be considered for wilderness designation in the revised Chugach National Forest management plan.

Wilderness Areas

Bering Lake	Fidalgo/Gravina
Bremner River	Hawkins–Hinchinbrook
Columbia Glacier	Montague Island
Controller Bay	Sheridan Glacier
Copper River Wetlands	Tebay Lakes
Copper/Rude River	

Source: U.S. National Park Service. Chugach National Forest Plan. July 1984;
U.S. National Park Service. Wrangell–St. Elias Final Environmental Impact Statement.

Wild, Scenic, and Recreational Rivers. The Wild and Scenic Rivers Act of 1968 provides a means for identifying and protecting outstandingly remarkable scenic, recreation, geologic, fish and wildlife, historic, cultural, ecological, and other values of the nations rivers. The intent of the act is to preserve the free-flowing condition of the rivers and the characteristics of the river’s immediate environment. As such, depending on the classification of the river, transportation alternatives could be constrained by the act.

The Whittier Access Project Final Environmental Impact Statement provides a useful and detailed description for Wild and Scenic River standards. “There are three classes of rivers established by the act, “wild,” “scenic,” and “recreational.” The following definitions are used by the Act to specify the classification of rivers subject to the Act. Wild rivers are described as “Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive....” Scenic rivers are “those rivers or section of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.” Recreational rivers are “those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.”

The Forest Service Land and Resource Management Planning Handbook describes the standards for managing wild and scenic rivers. No roads or other provisions for motorized travel are permitted within a narrow incised river valley or, if the valley is broad, within 1/4 mile of the river bank. On scenic rivers, roads may occasionally bridge the river and short stretches of conspicuous or longer stretches of inconspicuous and well-screened roads or railroads could be allowed depending on the type of use. Paralleling roads could be constructed on one or both banks and there can be several bridge crossings on recreational rivers.

In the early 1970’s the Wild and Scenic Rivers Act and Public Law 88-29 authorized the Nationwide Rivers Inventory (NRI). The NRI was incomplete in Montana, the Pacific Northwest and Alaska (including the Chugach National Forest). There are 26 rivers included on the Wild, Scenic and Recreational register for Alaska. None of these rivers run through the Chugach National Forest or near Prince William Sound. However, the Chugach National Forest Plan is currently going through a revision process which includes a revised Wild and Scenic Rivers

Inventory. The first step of this process was to conduct a rivers inventory of all rivers and river segments which are natural or undeveloped as defined by the Wild and Scenic Rivers Act. The preliminary rivers list has been completed and contains in excess of 760 named rivers as shown on USGS quad maps.

To date, 18 rivers, two lakes, and three glaciers in the Chugach National Forest have been identified as having ‘outstandingly remarkable’ resource values which indicate they may be eligible for inclusion. The revised Chugach National Forest Plan will contain several management alternatives and the number of rivers or glaciers adopted as Wild and Scenic may vary depending on the selected alternative. The following table lists five rivers, two lakes, and one glacier in the Prince William Sound/Copper River area that may be eligible for Wild and Scenic designation.

Potentially Eligible Waterbodies

Waterbody	Location
Alagnak Slough	Copper River Delta
Bering Lake	Katalla
Coghill River	Whittier-Valdez
Columbia Glacier	Valdez
Copper River–lower	Copper River Delta
Copper River–upper	Wrangell–Saint Elias National Park and Preserve
Nellie Juan River	Whittier
Portage Creek	Whittier
Portage Lake	Whittier

Source: Chugach National Forest. Plan Revision Process. Personal communication with Gary Lehnhausen

State Critical Habitat Areas. The Copper River Delta Critical Habitat Area is the only identified State Critical Habitat Area in the Prince William Sound/Copper River area. Critical Habitat areas have been designated as such to provide a level of management and protection commensurate with the unique fish and wildlife values for these areas.

Crucial Habitat. Offshore areas, estuaries, wetlands and tideflats, rocky islands and seacliffs, barrier islands and lagoons, exposed high energy coasts, rivers, streams, lakes and important upland habitat may be designated as Crucial Habitat by the ADF&G and are managed to maintain or enhance biological, physical, and chemical characteristics of the habitat and are subject to section 6 AAC 80.130(d) of the Alaska Coastal Management Program.

Uses that are initially considered to be non-conforming with the standards and regulations for management of Crucial Habitat include; blocking fish passage, dredging, filling, significant compaction of vegetation or sediment, blasting, alteration of flow patterns, significant impact to the habitat or repeated disturbance to animals from noise or human activity, high levels of acoustical or visual disturbance from boat traffic, alteration of significant areas of intertidal vegetation or nesting habitat, or other activities that would significantly reduce the productivity and value of the habitat. Non-conforming uses may be allowed if there is significant public need, there is no conforming alternative to meet the public need, and feasible and prudent steps have been taken to conform with the standards prescribed in sections (b) and (c) of 6 AAC 80.130.

Several areas of Crucial Habitat were identified from ADNR's Prince William Sound Area Plan and listed in the following table.

Alaska Department of Fish and Game Crucial Habitat Areas

Location	Closest Community	Habitat Type
Bettles Bay State Marine Park	Whittier	Estuary, Eelgrass Beds, Salmon Spawning, Waterfowl Nesting, Sea Otter Habitat
Boswell Bay State Marine Park	Cordova	Beach, Shorebird Rookeries, Primary Seabird and Waterfowl Migratory Path
Canoe Passage State Marine Park	Cordova	Otter Haul-out, Migratory Bird Path
Entry Cove State Marine Park	Whittier	Estuary, Eelgrass Beds, Salmon Spawning
Granite Bay State Marine Park	Whittier	Estuary, Eelgrass Beds, Waterfowl Nesting
Horseshoe Bay State Marine Park	Chenega Bay	Estuary, Anadromous Stream
Jack Bay State Marine Park	Tatitlek	Estuary, Sea Duck Nesting and Feeding, Eelgrass Beds
Sawmill Bay State Marine Park	Valdez	Estuary, Riparian Zone, Eelgrass Beds, Seal Haul-out
Shoup Bay State Marine Park	Valdez	Lake Flats, Shorebird and Waterfowl Nesting, Black-Legged Kittiwake Rookery, Bald Eagle Nest

Location	Closest Community	Habitat Type
South Esther Island State Marine Park	Whittier	Estuary, Lagoon, Eelgrass Beds, Waterfowl Nesting, Salmon Rearing
Surprise Cove State Marine Park	Whittier	Estuary, Eelgrass Beds, Waterfowl Nesting, Salmon Spawning

Source: Alaska Department of Natural Resources. Prince William Sound Area Plan. June 1988; Management Plan for State Marine Parks: Prince William Sound and Resurrection Bay. March 1995.

Wetlands and Tidelands. Executive order 11990, "Protection of wetlands" requires federal agencies to avoid direct or indirect support of projects that involve new construction in wetland habitat when there is a practical alternative. U.S. DOT order 56601.1A "Preservation of the Nation's Wetlands," requires that a wetland analysis be performed for transportation investments that may affect wetland habitat. If a significant impact on wetland is indicated in the analysis, an environmental impact statement is required. The U.S. Army Corps of Engineers (COE) has primary responsibility for regulation of the discharge of fill material in wetlands. In Section 320.4(b) *Effect on Wetlands*, of the COE's regulatory policy it states that wetlands "constitute a productive and valuable public resource and the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest." The COE regulations also require selecting the "least damaging practical alternative." When the Section 404 process is done in conjunction with a NEPA evaluation this can influence design, routing, and alternative selection. Proposals for fill placement in wetlands require authorization from the COE, with concurrence of other federal and state agencies such as the Fish and Wildlife Service, the Environmental Protection Agency, the ADF&G, and the ADEC.

Every Coastal Management Plan includes wetlands as a habitat protection issue. Wetland habitat is found throughout Prince William Sound. It will be necessary to consult the U.S. Fish and Wildlife Service National Wetland Inventory Maps or regional or site specific wetland habitat mapping to better identify specific wetland habitat. Wetlands can typically be found in or near the following types of habitat.

- forested bogs/muskegs
- forested swamps
- lakes
- moist tussock tundra/sedge bogs
- mud/sand flats and beaches
- ocean shoreline
- open water
- open water ponds
- pond flats/beaches
- salt marsh
- shrub bogs/muskeg
- shrub swamps
- wet sedges/grass tundra

A few of the more important areas likely to be affected by regional transportation improvements are described in more detail below.

Because of Whittier's generally steep topography, traditional wetland habitats are limited to a few level areas adjacent to and at the head of Shotgun Cove. Tidelands occur along the shoreline near the Whittier townsite and West Camp Delta at the head of Passage Canal. Estuarine wetlands exist near the mouth of Shakespeare Creek and a few areas of palustrine wetlands exist on both sides of the Whittier airstrip. Saltwater wetlands and their associated tidelands are common in the eastern Port of Valdez but less so west of the Alyeska terminal and Gold Creek. Major saltwater wetlands and tidelands extend from the southwest portion of Dayville Flats to the Northwest edge of Island flats. Significant wetland habitat and tidelands also occur at Mineral Creek Flats, Gold Creek, Duck Flats and Sawmill Spit. Extensive saltwater marsh habitat can be found at the head of the major coves. Within the coastal management area of Cordova tidelands are limited to Odiak Slough, the area north of the industrial park, and the area between the municipal dock and Flemming Spit. Though estuaries, saltwater wetlands, barrier islands, and exposed high energy coasts do not exist in the Cordova Management Area, they do exist in the overall planning area and support a wide variety of vegetative, marine and terrestrial life.

Anadromous Fish Streams. Anadromous fish streams sustain native and wild runs of varying fish species. The Alaska Department of Fish and Game (ADF&G) identifies, catalogs and manages anadromous streams to protect the native wild populations of fish. Countless anadromous fish streams are present in the Prince William Sound/Copper River area and are far too numerous to list in this report. Though the ADF&G catalogs records of anadromous streams for Alaska and Prince William Sound, it will be necessary to consult the ADF&G when considering specific proposed transportation alternatives to identify these streams.

Subsistence. Subsistence management and activities on federal lands are subject to Title VIII of ANILCA. In particular, Section 810 describes management of land uses that could restrict subsistence uses. An evaluation referred to as an (810 evaluation) is required by the head of the federal agency having primary jurisdiction over the land proposed for use to determine the effects on subsistence resources. Management of subsistence activities on state lands is currently under debate between federal and state agencies. It is unclear at this time what level of involvement federal and state agencies will have in managing subsistence activities on state land.

Subsistence hunting, fishing, and gathering are fundamental parts of the socioeconomic systems for Tatitlek and Chenega Bay. Cordova residents do participate in subsistence activities, however, the effort is comparably less than that of Tatitlek and Chenega, although higher than Whittier. The level of effort for subsistence activities near Whittier could be characterized as very low or not measurable. According to the Whittier Coastal Management Plan, "There are no identified subsistence harvest activities that take place within the city limits." Residents of Chitina and Tonsina also participate in subsistence activities. Subsistence activities were not identified in Seward.

A review of the plans found the following main types of issues regarding transportation's effects on subsistence resources in the Prince William Sound/Copper River area:

- Human activity, particularly boating and harbor operations, impacts subsistence marine resources.
- Competition among commercial, sport, and subsistence use of the resources is often caused by improved access. Improved accessibility puts increased pressure on

subsistence resource populations. That is, the indirect impact of increased competition for fish and game resources because of better access and more people.

- The direct, indirect, and cumulative impact of displacing animal or fish populations, affecting their habitat, or impacting sites customarily used for harvesting.

Identified Subsistence Use Areas

Bainbridge Island and Passage	Fidalgo	Orca Bay/ Inlet
Blackstone Bay coastline	Glacier Island	Port Eshamy
Bligh Island	Green Island	Port Graham
Boulder Bay	Hawkins Island	Port Gravina
Busby Island	Hinchinbrook Island	Port Nellie Juan, Kings Bay
Chenega Island	Icy Bay	Port Wells
Coghill	Jackpot Bay	Prince of Wales Passage
College Fjord	Knight Island	Reef Island
Columbia and Long Bay	Knight Island Passage	Sawmill Bay
Copper Center	Latouche Island	Tatitlek Narrows
Copper River Delta	Latouche Passage	Unakwik Inlet
Dangerous Passage	Montague Island	Wells Bay
Elrington Island	Montague Strait	West Sound
Evans Island	Naked, Perry, and Smith Islands	Whale Bay

Source: Alaska Department of Fish and Game, Division of Subsistence. Technical Paper 199. August 1996.

EVOSS Trust Lands. Of special interest in Prince William Sound is the involvement of the Exxon Valdez Oil Spill Settlement (EVOSS) Trust. As a result of the Exxon Valdez oil spill the EVOSS funds the acquisition of land to protect resources and services impacted by the Exxon Valdez oil spill. Land is purchased with EVOSS funds through state and federal agencies which in turn provide a level of habitat protection and land management. The majority of the habitat has been acquired in large tracts to help protect ecosystems, but smaller tracts having unique habitat or strategic value were also acquired. So far, the EVOSS has spent \$211.2 million dollars to protect 454,000 acres of habitat. Due to the level of management prescribed by the participating agency transportation improvements in some of these areas may be limited or

altogether precluded. The following table summarizes lands acquired within the Prince William Sound/Copper River area.

**Exxon Valdez Oil Spill Settlement Trust
Acquired Land and Habitat**

Location	Parcel(s) Area	Parcel Size	Agency Management	Extent of Ownership	Ownership Status
Chenega	Eshamy Bay, Jackpot Bay, Chenega Village Site	59,520 acres	USFS & ADNR	surface title & conservation easement	acquisition completed
Cordova	Orca Narrows Subparcel	2,052 acres	USFS	commercial timber rights	acquisition completed
Eyak	Nelson Bay, Eyak Lake, Hawkins Island, Port Gravina, Sheep Bay, Windy Bay	75,425 acres	USFS & ADNR	surface title & conservation easements	offer accepted
Tatitlek	Bligh Island, Two Moon Bay, Port Fidalgo, Sunny Bay, Snug Corner Cove	69,814 acres	USFS	surface title & conservation easements	offer accepted (future parcels to be acquired)

Coastal Management. Coastal Management Plans have been developed for a few of the communities in the Prince William Sound/Copper River area. The state standards for transportation and utilities (6 AAC 80.080) require that transportation routes and facilities be sited inland from beaches and shorelines unless the route or facility is water-dependent or no feasible and prudent inland alternative exists to meet the public need for the project. In addition, the standards require that transportation routes and facilities in the coastal area be sited, designed, and constructed so as to be compatible with local district programs. Coastal management programs for Cordova, Whittier, and Valdez have been developed. Seward is included under the Kenai Peninsula Borough Coastal Management Program.

Coastal management programs also identify and provide special protection to sensitive areas and environmental resources. "Areas Meriting Special Attention" (AMSA) is an official designation provided to areas important to subsistence, or have special scientific values or opportunities, or are areas with potential for designations as estuarine or marine sanctuaries. Other sensitive areas not formally designated as AMSAs are also identified in the plans and often have particular importance to the communities. A review of the coastal management

programs identified the following proposed AMSAs for the Prince William Sound/Copper River area.

Identified Proposed AMSA

Location	Proposed AMSA	Primary Value
Cordova	Cordova Industrial Park (Proposed AMSA)	coastal access, unique geologic/topographic significance
Cordova	Ski Hill (Proposed AMSA)	recreation
Seward	Upper Resurrection Bay (Proposed AMSA)	development, recreation, scenic, heritage, coastal resource
Valdez	Duck Flats (Proposed AMSA)	waterfowl habitat, recreation and economical
Valdez	Keystone Canyon (Proposed AMSA)	recreation, scenic, historical
Valdez	Mineral Creek Canyon (Proposed AMSA)	recreation and scenic
Valdez	Mineral Creek Islands (Proposed AMSA)	unique vegetative composition, harbor seal haul-out, and waterfowl habitat
Valdez	Robe Lake (Proposed AMSA)	fish habitat
Whittier	Shotgun Cove/Emerald Bay Subdivision (Proposed AMSA)	recreation, coastal access, unique geologic and topographic significance
Whittier	Whittier Port and Harbor (Proposed AMSA)	recreation, coastal access, unique geologic/topographic significance

SOCIAL, CULTURAL, HISTORIC ISSUES

Historic Resources. Transportation projects that affect historic or cultural sites are subject to Section 106 of the National Historic Preservation Act. The Act requires that federal agencies identify and assess the effects of expenditures of federal funds to maintain the integrity of historic and archaeological sites. The Act requires agencies to provide the Advisory Council on Historic Preservation an opportunity to comment on activities with the potential to impact historic properties. In addition, to the extent possible, impacts on the properties must be mitigated. Properties subject to the act are those on or eligible for the National Register of Historic Places. State law also protects historic sites and all projects should be coordinated with the State

Historic Preservation Officer. Cultural resources are also covered. The following table lists Prince William Sound/Copper River area sites recorded on the National Historic Register.

National Historic Register Sites

Location	Site
Chitina	Chitina Tin Shop – Main St
Chitina	Dakah De'nin's Village site
Copper River Delta	Million Dollar Bridge
Copper River Valley	Copper River and Northwestern Railway
Cordova	Alaganik Village site
Cordova	Anitvq Village site
Cordova	Aqtatula
Cordova	Axtuoacku Miq
Cordova	Burial Site for Russian Explorers
Cordova	Cannery tender
Cordova	Cockle Place Northeast Eskimo burial cave
Cordova	Cockle Place West Eskimo campsite
Cordova	Cordova Historical District
Cordova	Cordova Post Office and Courthouse
Cordova	Crystal Falls Cannery
Cordova	deLaguna no. 15 Eskimo burial cave
Cordova	deLaguna no. 21 burial site
Cordova	deLaguna no. 26
Cordova	Eyak Village site
Cordova	Heney Monument
Cordova	Hydroelectric Power Plant
Cordova	Ictam Uocita Village site
Cordova	Mummy Island East
Cordova	Mummy Island Peak

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Location	Site
Cordova	Naval Radio Station
Cordova	Nu n Aq midden site
Cordova	Nunaktvq Village site
Cordova	Old Cannery
Cordova	Old Hardrock Mine
Cordova	Old Sawmill
Cordova	Palugvik Archeological District
Cordova	Parshas
Cordova	Parshas Indian settlement
Cordova	Qayuaviyat pictographs
Cordova	Qi Ayvik Village site
Cordova	Qucuyvli Eskimo burial cave
Cordova	Reception Building – 2nd and B Sts.
Cordova	Red Dragon Historic District – Lake St.
Cordova	Rex Beach Cabin
Cordova	Shepard Point
Cordova	St. Michael the Archangel Church
Cordova	St. Theodosios Chernigou Church
Cordova	Tauxtvik Village site
Cordova	Tu Tliyalck Eskimo campsite
Cordova	Txalam Qidl Va
Cordova	UmLincq Midden site
Cordova	Un Hin Uaq Eskimo shelter
Cordova	vi Va Klik
Cordova	W. H. Bancroft
Cordova	Whitshed
Katalla	Chilkat Oil Company Refinery Site

Location	Site
Kayak Island	Bering Expedition Landing Site
Kayak Island	Cape St. Elias Lighthouse
Seward	Alaska Central Railroad: Tunnel No. 1
Seward	Alaska Nellie's Homestead – Mile 23, Seward Hwy.
Seward	Ballaine House
Seward	Brown & Hawkins Store
Seward	Diversion Tunnel at Lowell Creek
Seward	Government Cable Office
Seward	Jesse Lee Home for Children
Seward	Seward Depot – 501 Railway Ave.
Seward	St. Peter's Episcopal Church
Seward	Swetman House
Seward	Van Gilder Hotel
Valdez	McIntosh's Roadhouse
Valdez	Old Stampmill
Whittier	Buckner Building
Whittier	Hodge Building (Begich Towers)
Whittier	State Site #059 – Native Camping Location
Whittier	State Site #104 – Roadhouse
Whittier	State Site #307 – Chugach Eskimo Homesite and Smokehouse, Culturally Modified Trees
Whittier	State Site #346 – Burial Site, Culturally Modified Trees

Source: National Park Service, National Register of Historic Places. NRIS Database.
[HTTP://www.cr.nps.gov/nr/nrhome.html](http://www.cr.nps.gov/nr/nrhome.html); Whittier Access Project. HDR Alaska, Inc. May 1995.

Executive Order 12898 (Environmental Justice). Executive Order 12898 applies to federal actions to address environmental justice in minority group and low income populations. This order calls for strategies to identify and address disproportionately high and adverse human health and environmental impacts on low income and minority group populations. In the Prince William Sound/Copper River area there is a significant minority group Alaska Native population.

In addition, much of the population is economically disadvantaged. These could become factors under Executive Order 12898. The table below lists the Alaska Native population percentage and below-poverty-level percentage for Prince William Sound/Copper River area communities.

Low Income and Alaska Native Populations

Location	% Alaska Native	% Below Poverty Level
Chenega Bay	69.1	26.6
Chitina	46.9	40.9
Cordova	11.2	4.7
Seward	15.2	10.7
Tatitlek	86.6	19.8
Valdez	5.9	5.1
Whittier	12.3	13.0

Source: U.S. Census. 1990.

TRANSPORTATION LEGISLATION

This section discusses transportation legislation that has a land based environmental protection component that could constrain transportation development and thus could affect transportation alternatives in the Prince William Sound/Copper River area. The two main legislative actions identified are Section 4(f) of the U.S. Department of Transportation (DOT) Act and Title XI of the Alaska National Interest Lands Conservation Act.

SECTION 4(f)

Section 4(f) of the U.S. Department of Transportation Act states that no administrative approval may be granted for a Department of Transportation action using land from a publicly owned park, recreation area, wildlife and waterfowl refuge, or any significant historic site unless there are no prudent and feasible alternatives to taking this land. In addition to the aforementioned resources, Section 4(f) has been found to apply to Wild and Scenic Rivers and trails of the National Trails System Act. A Section 4(f) evaluation is used to evaluate a range of alternatives when one or more would use Section 4(f) properties. Such an evaluation is used, in particular, to evaluate avoidance of Section 4(f) properties and to determine which alternative and measures to minimize harm should be implemented.

This technical memorandum identifies major state and federal parks, recreation areas, and wildlife and waterfowl refuges that would likely be subject to Section 4(f) and which could impact regional transportation alternatives. This list is not all-inclusive of Section 4(f) resources. Lacking in particular are local parks and historic and cultural sites. However, these sites are unlikely to impact regional transportation alternatives.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

The National Environmental Policy Act of 1969 was enacted to establish policies, set goals, and provide a means for carrying out policies for the protection of the environment. To the fullest extent possible NEPA procedures require federal agencies to: (a) Interpret and administer the policies, regulations, and public laws of the United States in accordance with the policies set forth in the Act and in these regulations; (b) Implement procedures to make the NEPA process more useful to decision-makers and the public...; (c) Integrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively; (d) Encourage and facilitate public involvement in decisions which affect the quality of the human environment; (e) Use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment, including the indirect and cumulative impacts caused by the alternative which are not a direct consequence of the alternative but are still reasonably foreseeable; (f) Use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment.

NEPA requires that federal agencies consider the consequences of their actions before acting. The law encourages, but does not mandate, them to act in a way consistent with the goals of a healthful and pleasing environment.

ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT (ANILCA)

Title XI of ANILCA provides a process for siting transportation systems through the conservation system units covered by ANILCA. Conservation system units are any Alaska lands in the National Park System, National Wildlife Refuge System, National Wild and Scenic Rivers Systems, National Trails System, National Wilderness Preservation System, or National Forest Monument System.

The approval process required by the Act (Section 1104) requires an application to be filed with each appropriate agency having the authority to grant any authorization. The federal agencies then have 60 days to determine whether or not the application was complete. The draft EIS would be jointly prepared by all agencies with which the application is filed. Title XI modifies the standard NEPA process time line by requiring that a draft EIS be filed by the head of the lead agency within nine months from the date the application was filed. The final EIS is required to be completed within a year of filing. Either of these deadlines may be extended, but such extension would require publication of the reasoning in the *Federal Register*. The records of decision (ROD) of each agency are required within four months of publication of the final EIS. Adhering to these guidelines would result in an EIS with a relatively quick turnaround.

Title XI also modifies the typical NEPA process for areas designated wilderness by elevating the federal decisions from the agencies to the President and Congress (Sec 1106(b)). Title XI provides that each federal agency involved shall submit to the U.S. President “promptly” (presumably at the end of the four-month period required for agency decisions) notification of whether the agency tentatively approves or disapproves each federal authorization and reasons for the decision. Within four months of receiving notification, “the President shall decide whether or not the application for the system concerned should be approved.” If he approves, he sends it on to Congress with a recommendation for approval. If he does not approve, the applicant is considered to have exhausted the administrative process. The project is either canceled or goes to court. If the President sends a recommendation of approval to Congress, the Senate and House of Representatives must approve a joint resolution supporting the project within “the first 120 calendar days of continuous session of the Congress...” If the two houses agree on a joint resolution, then the project goes forward. If they do not, the project is canceled. Section 1106(c)(2) of ANILCA defines “continuous session.”

While the USFWS has dealt with the Title XI provisions in some 30 instances, neither it nor any federal agency has apparently yet tested the Title XI provisions for crossing designated wilderness areas. The closest is an effort currently underway by the Department of Transportation and Public Facilities (DOT&PF) to gain approval for upgrade and realignment of the Sterling Highway in an area that would cross the Resurrection Pass National Recreation Trail and a portion of the Kenai National Wildlife Refuge designated wilderness.

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